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UNITED NATIONS INDUSTRIAL
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SOLIDARITY MEETING OF MINISTERS OF INDUSTRY FOR CO-OPERATION IN THE INDUSTRIAL DEVELOPMENT OF HAITI*

PROJECT PROPOSALS

[redacted]

Port-au-Prince, Haiti, 5-9 November 1979

* This is a translation of a document which has not undergone formal editing.

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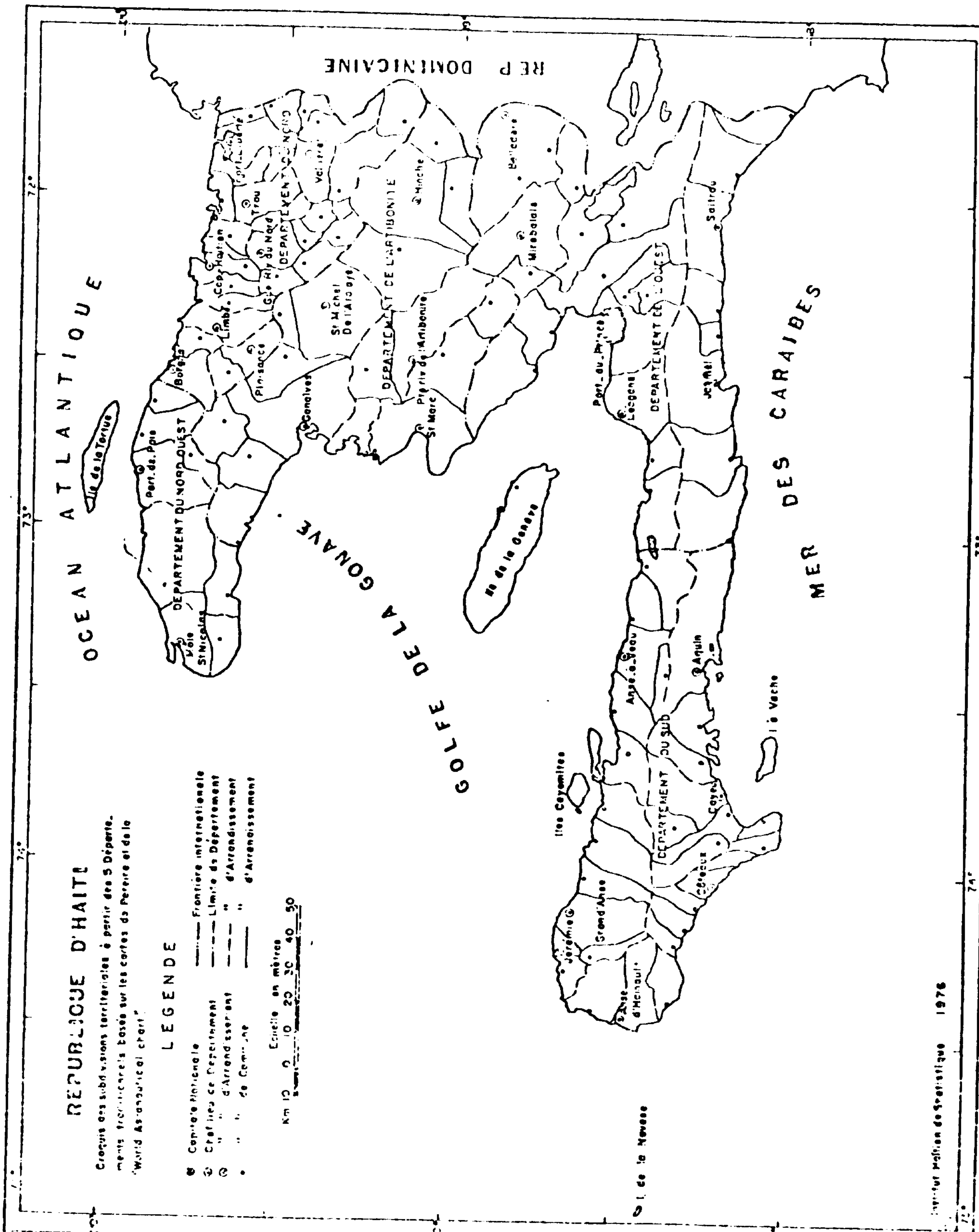
MAP OF HAITI


REP DOMINICAINE
OCEAN ATLANTIQUE
GOLFE DE LA GONAVE
MER DES CARAIBES
Ile de la Tortue
Ile de la Gonave
Ile à Vache
Iles Cayemites
DEPARTEMENT DU NORD OUEST
DEPARTEMENT DE L'ARTIBONITE
DEPARTEMENT DE L'OUEST
DEPARTEMENT DU SUD
Port-de-Paix
Gonaives
Mirebalais
Port-au-Prince
Léogane
Jacmel
Aquin
Cayes
Jérémie
Grand'Anse
St Marc
REPUBLIQUE D'HAITI
LEGENDE
Frontière internationale
Capitale Nationale
Echelle en mètres
1976

Explanatory notes

References to dollars ($) are to United States dollars, unless otherwise stated.

The monetary unit in Haiti is the gourde (G). During the relevant period, the value of the gourde in relation to the United States dollar was $US 1 = 5 gourdes.

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PART ONE

HAITI: A GEOGRAPHICAL, HISTORICAL AND ECONOMIC SURVEY

The purpose of the brief introduction that follows is to assist the participants in the Solidarity Meeting to a better understanding of the reality of Haiti. The geography of Haiti is a key to its history, a history that is very much a factor in its contemporary institutions and socio-economic structures. The men and women of Haiti have faith in the development potential of their country and in its effective transformation into a modern society. Their endeavours are directed towards bringing about that goal as soon as possible.

1. Geography

Haiti, known as the "Pearl of the Antilles" and situated between Cuba and Puerto Rico, in the heart of the Caribbean, half-way between Miami and Trinidad, is a mountainous island of 77,250 square kilometres. Under the Treaty of Ryswick (1697) the island was partitioned between France and Spain. The eastern, formerly Spanish part, now the Dominican Republic, covers 48,500 km^2, while the western, formerly French part, now the Republic of Haiti, has an area of 27,750 km^2.

Despite the difference in size, the two countries are roughly equal in population, with about 5 million inhabitants each.

Haiti is a mountainous land edged with coastal plains. These plains cover a total area of 7,000 km^2 or one-quarter of the country; the mountains cover the rest.

The climate of the island is hot, although tempered somewhat by the trade winds: the temperature varies between 25° and 30° C during the winter and between 27° and 36° C during the summer.

The country is divided into nine departments and comprises 117 "communes", one large city - the capital - and a number of small towns.

The capital is Port-au-Prince, whose population is estimated at between 500,000 and 700,000 inhabitants.

None of the small regional towns have a population exceeding 20,000 inhabitants. This disparity in size between Port-au-Prince and the small regional towns is significant. All economic and commercial activity is thus concentrated in the capital. The Government is pursuing a policy of regional development which should begin to produce results in a few years.

Haiti enjoys a great advantage in that, situated as it is in the very heart of the Caribbean near both North and South America, it might well become a kind of workshop at the crossroads of the Americas.

2. History (1492 to the present)

The island was discovered on 5 December 1492 by Christopher Columbus, who, because it reminded him of a barren region in Spain, named it Hispaniola.

The "Indians" Columbus discovered were in reality Arawaks grouped together under the authority of five caciques who shared the island, known in their language as "Quisqueya". These leaders pooled their resources and together enjoyed the peace and happiness of the early ages of human history.

The island of Hispaniola was to know varying fortunes over the centuries. There is no need to recount the circumstances in which the territory was developed: the local wars with the English and the Spaniards, the uprisings of the slaves brought from Africa, and finally the heroic exploits of Toussaint Louverture, who reunified the island temporarily. Louverture's work was completed in 1804 by Dessalines. Forerunners of the decolonization movement, the Haitian leaders, more than a century and a half ago, established the world's first black State.

The beginnings were difficult. Division was rife until Boyer brought unity to the country and, on 17 April 1825, gained French recognition of Haitian independance in return for an indemnity of 60 million gold francs, the last annual instalments of which were scrupulously paid by the Haitian government on the eve of the last World War. Thus, Haiti came into being on a ravaged land, lacking trained people to manage its affairs, and beset by the turbulence common to all young nations.

For more than a hundred years Haitian history was marked by unrest and political turmoil. This climate of instability resulted in intervention by the United States of America, which occupied the country from 1915 to 1935. Confronted by the unyielding patriotism of the Haitian people, President Roosevelt finally recognized the need to withdraw the marines.

Dr. François Duvalier was elected President in 1957. In January 1971 he designated his son, Jean-Claude, as his successor, a choice ratified by the people on 31 January 1971.

As a result of this decision, following the death of President François Duvalier on 21 April 1971 his son, Jean Claude, became the ninth President for life of the Republic of Haiti.

3. Economy

Haiti, with its 5 million inhabitants, continues to look with great hope to its economic future. The country of Toussaint Louverture has become one of the countries receiving the most aid per head in the world. The total amount of this assistance exceeds actual budget revenue.

The Republic of Haiti is the only country in the Americas to appear on the United Nations list of the world's twenty-five poorest countries.

According to estimates by international bodies, per capita income is in the order of $220 a year. This low income level explains why tens of thousands of Haitian citizens have been forced to leave their country to look for work elsewhere, principally in the United States and Canada.

In 1977 GNP was slightly above one billion dollars; it is nearly stationary in per capita terms, taking into account the rate of demographic growth (about 2 per cent per annum).

Agriculture accounts for approximately 45 per cent of GNP, whereas it employs more than 80 per cent of the economically active population. The reasons for this low percentage are to be found, firstly, in the limited area under cultivation and, secondly, in the rudimentary agricultural methods in use.

In order to improve its poor performance, the agricultural sector has been assigned top priority in the current five-year plan (1976-1981), with the consequence that more than 20 per cent of public resources allocated to development will be directed to agriculture.

The country's most important agricultural resources are: coffee, which accounts for an average of more than one-third of all exports; sugar-cane (10 per cent of exports); essential oils, such as cuscus (vetiver), citronella (6.5 per cent), and charcoal for household use. Together, mining and industrial enterprises and construction and transport enterprises make up some 20 per cent of the gross domestic product, while the service sector accounts for about 30 per cent. Finally, 9 per cent consists of foreign aid. There has, however, for some time now, been evidence that the economy is beginning to take off. One factor in this has been the establishment, around the capital of Port-au-Prince, of several hundred factories providing work for some 40,000 workers.

In recent years foreign businessmen, mainly from the United States, attracted by the country's low wages, have established a number of small and medium-scale enterprises, mostly for processing and assembly activities. In 1976 these enterprises exported goods worth more than 90 million dollars, which was more than half of all exports to the United States and about 40 per cent of total exports.

Economic indices for Haiti

	1975	1976	75/76	1977	76/77	1978	77/78
	millions of $	millions of $	%	millions of $	%	millions of $	%
GNP (current prices)	865.1	969	12	1 047	8	1 131	8
GNP (constant prices), index 1955	381.9	393	2	397	1	409	3
GNP per capita[a/] (current prices)	173.02	193.8	12	213.8	10	236.62	10.9
GNP per capita[a/] (constant prices), index 1955	73.3	78.6	7	79.4	1	81.8	3
Minimum daily wage[b/]	1.30	1.30		1.30		1.60	23
Price index, 1955 = 100	160.9	190.1	16	207.2	9	225.8	9
Industrial production index, 1955 = 100	143	155	8	161	4	167.5	4

Sources: Ministry of Planning, BNRH; Institute of Statistics; International Monetary Fund (IMF).

a/ Population estimated at 5 million.

b/ Increased to $1.60 in October 1977

Foreign trade

Haiti's foreign trade is based essentially on exports of agricultural products and imports of manufactures and raw materials. In recent years the value of imports has consistently exceeded that of exports. Consequently, as indicated by the statistics, the Haitian balance of trade is heavily in deficit.

Haiti's balance of trade

	1974	1975	1976	1977[a/]	1978[b/]
	(in millions of US dollars)				
Imports c.i.f.	111.3	142.5	159	245	253
Exports f.o.b.	71.3	81.2	112	143	167
Balance of trade	-40.0	-61.3	-47	-102	-86

Source: National Institute of Statistics, World Bank, IMF.

a/ Estimate.

b/ Projection.

Geographical distribution of exports and imports
(principal countries)

	Exports to			Imports from		
	1974	1975	1976	1974	1975	1976
	(in millions of US dollars)					
France	6.32	6.32	7.1	5.9	6.4	12.24
Federal Republic of Germany	5.44	4.9	6.56	0.82	0.5	0.78
United States	48.54	75.12	110.38	46.16	57.6	75.8
Canada	7.38	7.76	12.16	1	1.68	1.38

Imports: The United States is consistently in the lead, accounting for 55 per cent of Haitian imports. What is more, its share of the market is rising slightly from year to year. The position of the other countries (except Canada) is declining somewhat in relative terms; this is especially true of France.

Exports: Although the United States remains far and away the country's first customer, there is a downward trend in the percentage of Haitian products sold in the North American market. At the same time, exports to Europe have nearly doubled. The principal reason for this development has been the increase in coffee prices.

Employment situation

Haiti is estimated to have an economically active population of about 2 million, preponderantly employed in the agricultural sector.

Distribution of the economically active population	Percentage
Agriculture	85
Services	5
Commerce and industry	5
Construction	3
Civil servants (including the military)	2

Although the first steps towards industrialization have been taken in recent years and there is a widespread desire for vocational training, the great majority of Haitian workers have no technical background, and are thus unable to play an important role in industry. This situation is not the result of a lack of aptitude but of the absence of a sufficient demand for technical skills.

The existence in the labour market of unemployment and under-employment contributes to a high level of emigration; thus every year several thousand Haitians leave the country, principally for the United States and Canada. The savings which these emigrant workers send back to Haiti are an important factor in reducing the deficit in the balance of payments. With the increasing industrialization of the country, however, some of these workers are returning to Haiti.

Manpower

The availability of cheap labour is a key factor in the national economic situation.

As one might expect in a country suffering from chronic under-employment, the wage level in Haiti is one of the lowest in the Americas. This situation is an incentive to investment. Not only is Haitian labour cheap - it is also remarkably good. Haitian workers are extremely capable and highly industrious.

4. Present status of the industrial sector and future outlook

As a small, under-developed and over-populated country with a faltering agricultural sector, Haiti has no choice but to look to the industrial sector if it is to raise the standard of living of its people.

This sector, whose real development may be said to have begun around the 1960s, has since 1970 recorded a fairly dynamic and sustained growth of 10 to 15 per cent annually. This growth has been due, essentially, to the Government's efforts in the institutional, manpower and legislative areas. Currently at 18 per cent, the industrial sector's contribution to GNP is relatively small and well below that of the agricultural sector; however, it has great potential and the institutions directly involved in its development are being gradually strengthened.

Among these institutions we might mention:

(a) The Ministry of Commerce and Industry, the principal agency with responsibility for the industrial sector, whose objective is the promotion of over-all industrial development. Working through its specialized departments and offices - the Directorate of Industry, the Department of Industrial Promotion, the Industrial Inspectorate and the recently established National Investment Promotion Office - this Ministry guides and co-ordinates industrial activities by:

- Actively seeking viable investment projects of high development priority, and competent national or foreign entrepreneurs who may be interested in undertaking them;
- Seeking, either from the above-mentioned entrepreneurs or from any other suitable source, the necessary financial resources;
- Assisting and co-ordinating the activities of the different partners.

(b) The Ministry of Planning, formerly the National Council for Development and Planning (CONADEP), responsible for co-ordinating the formulation and execution of national plans. It is also involved in a number of research projects and proposes solutions for problems encountered by the industrial sector.

(c) The Agricultural and Industrial Development Institute (IDAI), the country's only institution offering medium-term loans, prepares evaluations of all the projects it finances. The Institute also operates the Port-au-Prince industrial estate and manages a number of enterprises.

Problems and prospects for Haitian industry

The obstacles to industrial growth in Haiti are of different kinds:

(a) Obstacles inherent in the country's economic infrastructure:

- Insufficiency of electric power;
- Lack of port and airstrip facilities, although significant efforts have been made to correct this deficiency (at Port-au-Prince);
- Inadequate water-management and other facilities.

(b) The absence of specialized management institutions or offices, complicating the establishment of complex enterprises with upstream and downstream effects;

(c) Problems in securing medium- and long-term financing;

(d) The limited size of the domestic market.

Despite the efforts that have been made so far by the government agencies concerned to bring about a dispersal of industry, Haitian industry continues to be highly concentrated in the Port-au-Prince metropolitan area. Apart from a few agro-industry enterprises (engaged in the processing of fruits and vegetables and the production of essential oils, matches, etc.) scattered throughout the country, 92 per cent of the industrial facilities are at Port-au-Prince.

Nevertheless, considering the country's material, human and institutional potential, the outlook is good. Haiti has a large pool of talented and relatively cheap manpower (the basic wage is between eight and ten gourdes a day). In addition, the country's industrial resources are undeveloped,

particularly as regards agro-industries and non-metallic minerals. The non-metallic mineral resources that have been utilized so far have contributed to the development of the cement industry, while other minerals, such as clay, marble, salt, building stones, lignite, etc., are still awaiting development.

Finally, the Haitian Government is engaged in a commendable effort to improve the country's power-generating capacity and modernize its institutions: establishment of the National Investment Promotion Office, provision of basic and specialized training for administrative personnel, organization of seminars for the managerial staff of existing enterprises.

Industrial production

Haitian industrial production is quite varied. In addition to such traditional products as sugar and sugar derivatives, sisal and rope, essential oils, cotton fabrics, leather and leather articles, mention should also be made of the import-substitution and re-export industries which began to develop in the 1970s. The private sector has invested some 18 million gourdes in industrial development.

The substitution industries, established with a view to the gradual, cautious substitution of domestic products for imported products without endangering the country's public finances, involve some forty enterprises. These produce such articles as: edible oils, soaps and detergents, vinegar, fruit and vegetable juices and preserves, food pastes, biscuits, chocolate sweets, fabrics, paints, glues, plastic articles, matches, furniture, etc.

Although these enterprises turn out a wide range of products, they are nevertheless unable to satisfy local demand. Accordingly, in view of the importance of this activity to the national economy, the Government intends to step up agricultural production as a basis for the development of the substitution industries, while at the same time establishing the necessary infrastructure to support these industries.

The predominant characteristic of the country's industrialization process continues to be the promotion of enterprises producing consumer durables and the tendency of businessmen to invest in enterprises using imported raw materials - the so-called re-export industries. As in the past, the explanation for this

phenomenon lies in the limited domestic market. The approximately 150 enterprises operating on a subcontracting basis assemble a fairly wide range of products: clothing, electronic and electric components, leather articles, baseballs and softballs, etc. These products go almost exclusively to the United States market. Seventy-six per cent of all industrial jobs are provided by these firms, which are Haitian in location only; the supporting industries are insignificant. These enterprises operate with cheap local labour and have only a few overhead expenses, such as rent, water, electricity and the like.

Legal aspects of industrial companies

Haitian law recognizes three kinds of companies:

- General partnerships;
- Limited partnerships;
- Limited companies (sociétés ananymes).

The first two types are associations of persons who, knowing each other well and desiring to work together, enter into a partnership for their mutual advantage. The third type is a joint-stock company.

The limited company:

Most of the enterprises currently in operation are limited companies, i.e. companies in which capital contributions are represented by freely negotiable securities, the bearer's liability being limited to the amount subscribed.

The two main features of limited companies are the following:

- The liability of all the partners, who may not be fewer than two in number, is limited to the amount of their share in the capital of the company;
- The capital is divided into "shares", which are negotiable securities issued in return for a contribution in cash or in kind or when reserves or profits are added to the share capital.

Current legislation requires a minimum face value of five dollars for shares issued by limited companies. The law also sets the minimum share capital permitted for commercial limited companies at $5,000 and for industrial limited companies at $20,000.

Laws regarding new companies

In a general context which is highly favourable, the Government offers major incentives to all persons, Haitian or foreign, who invest in the country's economy.

Current Haitian laws are among the world's most liberal, creating a propitious climate for private investment, particularly following the decrees of August 1960, March 1963 (amended on 8 October 1969) and, most recently, 9 May 1977, which deal, respectively, with new agricultural and industrial companies and the decentralization of the latter.

In all cases the principal incentive for the establishment of these enterprises lies in the considerable tax benefits for which they are eligible. This policy is evidence of the Haitian Government's determination to promote the country's economic and social development, recognizing the inevitability of this and the importance of encouraging the establishment of new agricultural and industrial enterprises in order to make maximum use of available manpower and stimulate the investment of domestic and foreign private capital.

Conclusion

It will be clear from the foregoing remarks that Haiti is still at the first stages of its industrial development and that, like all developing countries, it offers attractive investment opportunities. A considerable effort is in progress to strengthen the country's institutional structures with a view to effectively orienting the national industrial process, making available to the private sector industrial information and technical assistance services in the field of project identification, investment options and enterprise managment. Public incentive measures are also planned to encourage the establishment of agro-industries, the creation of import-substitution enterprises using locally available materials, and the expansion of re-export industries employing labour-intensive technology.

PART TWO

CO-OPERATION AND ASSISTANCE AGREEMENTS BETWEEN HAITI AND OTHER DEVELOPING COUNTRIES

What the Haitian economy most lacks is the "industrial man" - that is, the technician, the organization and marketing specialist, the entrepreneur, the skilled worker, etc. It lacks the kind of person who, through his creativity and discipline, can provide the driving force for the industrial development effort. The basic idea behind the following project proposals is to strengthen the existing nucleus of men and women with these aptitudes in the Haitian economy through co-operation, at the ministerial, institutional and public or private enterprise level, between specialists from the participating countries and their Haitian counterparts.

These project proposals may be regarded as providing a basis for the initiation of a dialogue between the representatives of Haitian industry and their opposite numbers from the countries taking part in the Solidarity Meeting. In most cases, initial consultations of this kind will already contribute towards a more precise formulation of the problems and alternatives involved. In preliminary consultations or - still more so - in negotiations, the tasks for joint action can be defined.

As another basic idea behind these proposals it is planned to place experts with operational experience at the disposal of Haitian industry. These experts will remain in the country long enough to work closely with their Haitian counterparts and at the same time to train them. Their assignments will take them all the way from the initial formulation of the project to its completion and start-up.

In order, therefore, to carry out the proposed projects, it will be necessary to establish close and flexible ties between Haitian agencies, institutions and enterprises and those of the interested countries participating in the Solidarity Meeting. Through their experts, who will remain in contact with their headquarters, these institutions and agencies will participate in the day-to-day work of seeking solutions to the development problems confronting Haiti. For their part, Haitian technical personnel will have an opportunity to upgrade their professional skills at the agencies and institutions of the assisting countries.

In the area of sectoral investment projects, financial contributions are envisaged both from IDAI and from private and public industrial enterprises. IDAI is a public agency and the only institution in the country granting medium-term loans. Normally, the Haitian partner will request direct investment and/or suppliers' credits from the foreign partner. The financial terms of these co-operative arrangements are negotiable separately for each project.

Co-operation of this type will also bring advantages to the assisting countries. For those located far away it will provide an additional opportunity to establish professional, commercial or industrial relations with a Caribbean country, and to gain greater knowledge of the region and its substantial development potential. For the technical, economic and commercial specialists of the countries that take part in the Solidarity Meeting, this form of co-operation and assistance will represent a challenge to use their skills in a human environment with a rich historic legacy currently in the throes of change.

In part three of this report a technical description of each project is given, supplemented by a tentative budget. Specific costs and the way they are to be financed will have to be determined through direct negotiations between the partners concerned.

PART THREE

PROJECT PROPOSALS OF THE HAITIAN GOVERNMENT

1. ADMINISTRATIVE, FINANCIAL AND TECHNICAL INFRASTRUCTURE PROJECTS

1.1. STRENGTHENING OF INSTITUTIONS CONCERNED WITH INDUSTRIAL POLICY, PLANNING AND PROGRAMMING

1. Introduction

The Directorate of Industry operates under the responsibility and supervision of the Secretary of State for Commerce and Industry, who, under the organic law of the Secretariat of State for Commerce and Industry (Decree of 16 April 1973; see Le Moniteur, No. 47, 13 June 1973), is directed "to study all measures designed to promote the development of foreign and domestic trade, industry and the crafts sector."

The function of the Directorate of Industry is to promote industrial production and encourage the processing of domestic raw materials. To this end:

(a) It maintains current information on the industrial sector and prepares documentation for the use of potential investors;

(b) It seeks out new industrial opportunities and prepares technical and economic studies;

(c) It evaluates the results of planning for the industrial sector and submits suggestions and recommendations to the agencies concerned.

The management staff of the Secretariat of State for Commerce and Industry makes available to foreign investors statistical data on the Haitian economy and the list of national priority industries, and assists in such areas as the preparation of financial and technical documents, the recruitment and training of Haitian personnel, etc.

The Directorate of Industry numbers among its staff university graduates and technicians. Industrial planning and programming is a joint responsibility of the Directorate of Industry and the Ministry of Planning.

2. Aim of the project

(a) Industrial policy

The strengthening of the Directorate of Industry in the consistent application of the industrial legislation in force; the improvement of the institutional framework for the promotion, protection and monitoring of the activities of industrial enterprises; quality control, including the improvement of co-operation between the Ministry and industrial enterprises; the systematic elaboration of the major options and objectives of industrial development, including the options and objectives for the sectors; consolidation of the Ministry's role as a promoter and co-ordinator of the country's industrial development; the introduction of institutionalized procedures in all its activities, including relations with industry.

(b) Sectoral surveys

The organization of industrial surveys on a sectoral basis with a view to better defining sectoral options and objectives, assisting in the identification of investment opportunities and promotion of projects and contributing to the preparation of the next plan (to begin in 1982).

3. Project activities

For both projects the Haitian partner will be the Ministry of Commerce and Industry. The intention is to conclude co-operation agreements with the ministries of industry of the participating countries and with economic and industrial research institutions. The foreign organizations will make available to the Haitian Ministry the services of officials and experts in the above-mentioned areas to assume responsibility for specific industrial management functions, including the training of their Haitian counterparts. It is expected that this co-operation will extend over a two-year period.

4. Budget

(a) Industrial policy

	Number of months	$US
1 expert in industrial policy	12	30 000
1 expert in industrial law	12	30 000
1 industrial administrator	12	30 000
1 expert in international co-operation	12	30 000
1 expert in export marketing	12	30 000
Fellowships for Haitian nationals (training abroad)	12	30 000

(b) Sectoral surveys

Planning and programming	Number of months	$US
Expert in industrial surveying and programming	12	30 000
Experts in special sectors (ten sectors to be determined)	40	100 000

1.2. SMALL-SCALE INDUSTRY PROMOTION SERVICE

1. Introduction

During the period from 1965 to 1975 the number of registered manufacturing enterprises rose from 317 to 913; during the same period the number of employees increased from 10,000 to 17,529.

During these same years the number of enterprises in the building and public works sector increased from 215 to 648, and the number of employees from 1,706 to 5,815. Average enterprise size in terms of the number of paid workers declined from 32 to 14 in the case of manufacturing enterprises, but remained fairly stable in the building and public works sector (8-9).

Haiti has a large number of production units comprising the "small-scale industry" sector. When one examines the geographical distribution of these facilities, one finds that in 1974/75 two-thirds of the manufacturing units were concentrated at Port-au-Prince and only 14 public sector units were located outside the capital.

The principal areas in which small-scale entrepreneurs require special assistance are the following:

- Technical assistance: improvements in production processes and product quality; introduction of new products; management; personnel training;
- Common professional services;
- Negotiation of favourable credit terms;
- Marketing (in Haiti and possibly abroad - "group marketing");
- Equipment for plant expansion or establishment;
- Supplies of raw materials and other production materials.

2. Aim of the project

Examination of existing promotion services in Haiti; analysis of the special requirements of small-scale industry and of the measures needed, including the organization of a special unit with responsibility for promoting small-scale industry.

3. Project activities

The Haitian Ministry of Commerce and Industry intends to enter into a co-operative arrangement with an organization specializing in the promotion of small-scale industry.

4. Budget

A two-year agreement for co-operation and assistance could provide a range of small-scale industry services geared to Haitian conditions. Such a project would require:

	Number of months	$US
Experts for the services described above	24	60 000
Training fellowships for Haitian personnel for a duration of six months	6	9 000

1.3. NATIONAL PACKAGING INFORMATION SERVICE

1. Introduction

The agricultural sector, once the principal source of Haiti's wealth, is still a key element in its economy. Even the country's future industrial development is to be based on agro-industries established in the immediate vicinity of the growing areas (packaging plants for tropical fruits, juices, citrus fruits, early agricultural products and fish).

The Haitian authorities fully recognize the role of packaging technology in this kind of development effort. There is a keen awareness on the part of agriculturalists, the managers of the new agro-industry enterprises and indeed all consumer goods producers of the problems surrounding packaging quality and pricing.

The packaging industry can already count on a number of large plants (producing metal, paper and plastic boxes and sisal bags). These companies are often affiliated with foreign business groups which contribute technical support.

There is inadequate knowledge on the part of Haitian producers of the actual conditions which packaging must withstand, and the technology required to produce packaging with the required specifications is often ill-defined (this is the reaction of the packaging producers). Furthermore, neither the users of the packaging nor the authorities have facilities for the control of packaging materials manufactured in Haiti or imported from abroad.

From a social point of view, the aim should be to have export products processed and made up as far as possible in the country, using Haitian manpower.

2. Aim of the project

The establishment of a National Packaging Service for the purpose of:

- Meeting the need to monitor the quality and pricing of packaging and packaging materials;
- Developing packaging to satisfy the needs of local and export markets;
- Making maximum use of locally available raw materials;
- Assisting industrialists in solving technical problems and giving them advice to enable the best over-all results to be obtained.

3. Project activities

Of a public-service nature

- To devise packaging standards and national quality certification procedures;
- To establish the Service's jurisdiction country-wide as the technical body with recognized expertise in this area so as to enable it, at the request of Haitian courts, to intervene in disputes involving packaging;
- To bring Haitian legislation in the area of packaging into line with the relevant international standards;
- A study of consumption over a period of five years will be carried out to provide guidance for packaging and raw-material producers and enable the Government to set long-term objectives.

Under the heading of technical vocational training, a study could be made to determine training requirements according to economic sector.

Finally, a documentation centre will be established to function as a central clearing-house for all information and documentation, including information on the latest developments, in regard to the packaging and presentation of goods.

Of an interprofessional nature

(a) In connexion with the activities of packaging producers:
- To establish a national quality certification seal as a means of promoting Haitian packaging both among domestic industrial consumers and abroad;
- To devise performance standards for each category of packaging so as to ensure adequate product protection, especially for export products;

(b) In connexion with the activities of packaging users:
- Assistance to user companies in the following areas:
  - The selection of the type of packaging most suitable for their special needs;
  - The preparation of specifications;
  - Inspection procedures when orders are accepted.

(c) In connexion with consumer and user interests:
- Consumer protection in the area of food purity standards;
- User protection, specifically with regard to the transport, storage and handling of dangerous, inflammable and explosive materials;
- Packaging cost analyses for consumer goods designed to optimize the "packaging-cost/product-cost ratio".

4. Budget

Co-operation partner:

Haitian Ministry of Commerce and Industry

Under a co-operation agreement concluded with a packaging institute, the following would be made available to the Ministry:

	Number of months	$US
1 senior packaging consultant	12	30 000
1 packaging/laboratory expert	4	10 000
1 prototype production expert	3	7 500
1 expert on legislation	6	15 000
1 information and documentation expert	6	15 000
1 expert in consumption analysis and forecasting	6	15 000
Test laboratory equipment (the laboratory to be set up within the National Quality Control Laboratory 1/)		100 000
Technicians for the laboratory equipment and for training	12	30 000
Fellowships for Haitian personnel	12	15 000

As a result of these activities by the foreign experts and their Haitian counterparts, a special team will be formed (a technician, an engineer and a designer) under the Ministry of Industry, to be responsible for organizing the national packaging service.

1/ Project 1.8.

1.4. ASSOCIATION OF HAITIAN INDUSTRIALISTS

1. Introduction

In an economy traditionally based on agriculture and trade the emergence of a new type of businessman - the technocrat or industrial manager - is an important development. Haitian industry is of recent origin. It is privately owned, with fairly extensive foreign participation. However, a number of public or semi-public enterprises play an important role in the economy of the country.

Among the country's industrialists there are some who made their start in the crafts sector; others come from the commercial world, where they continue to maintain their contacts. Some previously occupied posts in the government service. These new Haitian industrialists are individualists obliged to hold their own in a milieu in which competition is intense for importers and newcomers to the branch. They often feel isolated and insufficiently recognized and protected by the Government. At the same time they have not yet developed a strong enough sense of solidarity. Most of them, however, are beginning to realize the importance of their common interests, recognizing that these interests must be effectively articulated and represented. Taking this into account, the authorities, particularly the Ministry of Commerce and Industry, favour institutionalized co-operation with industrialists.

2. Aim of the project

To establish the legal, structural and operational principles for a professional organization of industrialists (i.e. in effect a chamber of industry) in co-operation with a group of Haitian industrialists and the Ministry of Commerce and Industry. The role of this organization will be to articulate the concerns of the industrial community and serve as a focal point for the exchange of industrial experience at the national and international level. At the invitation of the authorities, the organization could likewise participate in the drafting of Haitian legislation and in official decisions of interest to the industrial community.

In addition, the organization will be responsible for organizing conferences and seminars and for promoting industrial co-operation with other countries. As part of its structure, the organization will include individual sections corresponding to specific industrial branches.

3. Project activities

(a) A group of Haitian industrialists will be invited by similar professional organizations to study their structure, programmes and operation.

The cost is estimated at $15 000

(b) Representatives of the organizations visited will assist the Haitian group in preparing the charter of the Haitian association and will take part in the first constituent assembly of the association.

The cost is estimated at $10 000

(c) The organizations visited will assist with logistic support for the operation of the new organization, particularly as regards its international activities.

1.5. THE "INTERNATIONAL SOLIDARITY" INDUSTRIAL ESTATE

1. Introduction

As defined in the development plan, the Haitian Government's industrial policy stresses the strengthening of the institutional capacity of the organizations responsible for the formulation and execution of industrial development projects and for the industrial dispersal which is to follow the creation of the basic infrastructure in certain regions of the country, including the establishment of industrial estates.

The country's first industrial estate has already been set up at Port-au-Prince by the National Equipment Corporation (SEN) with technical assistance from UNIDO and financial support from the International Bank for Reconstruction and Development (IBRD). The development of the building site, the completion of the necessary infrastructure facilities and the construction of the first buildings required four years (1970-1974), the park becoming operational in 1975.

Within the framework of SEN, but as an independent organization with a budget separate from the budget of SEN, the Government has created a new agency known as the National Industrial Estates Corporation (SONAPI), whose mission is to set up, organize and manage industrial estates in Haiti.

One aspect of the five-year plan for 1976-1981 concerns the policy of industrial dispersal and territorial development. As part of this policy there are plans to establish an industrial estate at Cap-Haitien and to reinforce the infrastructure of the northern region.

2. Aim of the project

The intention is to establish an industrial estate, covering an initial area of 10 hectares, not far from the harbour and airport of Cap-Haitien, the country's second largest town, 230 km from Port-au-Prince. The estate will be gradually expanded to encompass a built-up area of 31,200 m^2 to be rented to entrepreneurs.

3. Project activities

The government agency involved is the Agricultural and Industrial Development Institute (IDAI) (Boîte postale 1313, Port-au-Prince, Haiti), whose Director-General is Mr. Gérard Louis, agronomist. The promoter and partner will be the National Industrial Estates Corporation (SONAPI), c/o IDAI.

Costs have been estimated at $560,000 for pre-investment activities, $2,340,000 for buildings, and $100,000 for machinery and equipment.

The countries taking part in the Solidarity Meeting at Port-au-Prince are invited to participate in the establishment of this estate through direct investment, the setting up of a machine shop, and assistance towards common services and promotion.

A contribution to the building and operation of this estate by the countries taking part in the Meeting would be seen as a gesture of solidarity with the people of Haiti. Should a resolution along these lines be adopted by the Meeting, the complex might be named the "International Solidarity Industrial Estate" in commemoration of this Meeting and the collective assistance made available by the participating countries.

4. Budget

	$US
Construction of a machine shop	250 000
Common services, promotion	50 000

1.6. ESTABLISHMENT OF AN EXPORT FREE ZONE AT PORT-AU-PRINCE

1. Introduction

It is to be expected that foreign shipowners will be making increasing use of the port of Port-au-Prince in the years ahead. The turnover of ships in 1977/78 was 695, representing the handling of about one million tons of cargo, approximately 60 per cent of which was containerized - meaning around 15,000 containers.

The port of Port-au-Prince is being steadily modernized. The access channels have been dredged to a depth of 32 feet. The Export Free Zone, which is to be set up close to the port and near an industrial zone, will initially cover an area of approximately 425,000 square feet. It will be possible to expand this area as required, since the National Port Authority (APN) has additional large areas suitable for development.

The decree authorizing the establishment of the Free Zone was signed by the President of the Republic on 29 March 1979.

2. Aim of the project

- To work out in detail the planning and building programme for an Export Free Zone at Port-au-Prince;
- To conduct negotiations with potential partners on the implementation of this project and on the terms for investment and technical assistance.

3. Project activities

Phase 1

- Examination of the decree authorizing the establishment of the Free Zone from the standpoint of the requirements of an export production zone of the type envisaged and the characteristics of the Haitian industrialization process;
- Planning of the general layout of the zone, the scheduling of the building programme, infrastructure, plant and warehouse facilities, support services, equipment and development;

- Devising of a preliminary system of incentives to attract investment;
- Formulation of the strategy to promote the zone;
- Identification of the industries that might wish to set up operations in the zone;
- Establishment of the organizational and management structures of the zone, supervisory functions, and support and maintenance services;
- Structural analysis of Haitian export industry and, taking account of foreign experience in the establishment of export free zones, the formulation of recommendations on policies to be adopted and practical measures to be put into effect;
- Advice on the legal and commercial problems involved in exporting manufactures and semi-manufactures produced in Haiti in the Free Zone to Latin America, the European Common Market and the United States (on the basis of tariff 806/807);
- Cost analysis;
- Planning of fellowships or tours to study free zones and their operation.

Phase 2

- Activities of a group of highly skilled experts to ensure the systematic progress of the project, particularly in respect of infrastructure, environment, management, promotion and local personnel training.

4. Budget

Phase 1	$US
Preparatory activities	10 000
Phase 2	
Establishment of the Free Zone	180 000

1.7. DEVELOPMENT FINANCE COMPANY

1. Introduction

Apart from the Agricultural and Industrial Development Institute (IDAI),[2/] operators of small and medium-scale agricultural, industrial or agro-industry enterprises in Haiti have no access to the traditional sources of credit. As these sectors are the mainstay of the Haitian economy, the greatest importance is attached to easing their access to loans.

2/ IDAI will participate in the financing of a number of the projects submitted to the Solidarity Meeting.

Wishing to play a larger and more effective role in the country's economic development, a group of businessmen have joined together to form a Development Finance Company. The aim of this company, the establishment of which has received strong backing from the Government (which has also indicated a willingness to subscribe up to 10 per cent of its initial capital), would be to organize, promote, plan and finance the setting up of enterprises capable of contributing to Haiti's economic development, particularly agricultural, industrial and agro-industry enterprises.

The finance company envisaged, which cannot be assimilated to a commercial bank, will operate within the framework and limits of appropriate legislation differing from that governing the banking community. Nevertheless, its investment policy will take into account the Government's economic development planning.

The company will obtain the funds for its operation from several different sources. First of all, there is its own capital, which has been set at 10 million dollars. The shares, which will be offered to the largest possible number of investors, must be fully paid up within the time required by the law and the company's own statutes. It is also envisaged that a certain percentage of the shares will be subscribed by international organizations. In any event, in order to prevent any one shareholder from controlling too large a block of shares, no one investor may hold more than 10 per cent of the capital.

During contacts which the promoters of the company have had with potential backers, a large number of international financial institutions have expressed the desire to follow the Government's lead in encouraging this initiative on the part of the Haitian private sector, either by investing directly in the company's capital or by granting loans, whose possible total may be as high as 10 million dollars. The terms under which these loans will be made available to the company are still under discussion; naturally, the Haitian promoters are interested in securing the most favourable possible interest rates and also repayment schedules, including grace periods that are as liberal as those granted to similar companies comparable to those existing in Haiti.

The fact is that only if it receives long-term loans will the company be able to realize its principal objectives, the most important of which is the medium- and long-term financing of small and medium-scale agricultural, industrial and agro-industry enterprises which lack access to the traditional sources of credit.

The company will be under the direction of a highly qualified professional management staff, initially assisted by one or more foreign specialists. It is anticipated that it will begin to show a satisfactory profit between its third and fifth year of operation, when the rate of return on invested capital should reach 11-15 per cent, a figure considered normal for finance companies of this type.

2. Aim of the project

The Haitian promoters of the Development Finance Company now being formed have expressed their desire to encourage the countries participating in the Solidarity Meeting to contribute to the establishment and effective operation of the company both through direct investment in its capital and by granting it loans on favourable terms.

3. Project activities

The company is a flexible instrument, urgently required to stimulate existing projects and promote new ones. Institutions of a similar nature are already operating successfully in many countries with the same essential characteristics as Haiti.

The company will provide a useful forum for co-operation between the Haitian business community, the private sector and the international financial institutions. Its operations are certain to have a major effect on business in general in Haiti and to benefit both those receiving the loans and the private and public sector in general.

4. Contribution sought

- Contributions to the company's capital;

- Offers of loans at favourable interest rates.

1.8. NATIONAL QUALITY-CONTROL AND STANDARDS LABORATORY

1. Introduction

Haiti does not have a national system of industrial standards. What is more, the country still lacks a quality-control laboratory capable of providing the three essential services required - the inspection of domestically manufactured products for consumption in the country, the inspection of domestically manufactured products intended for export, and finally the inspection of imported products (including unfinished products to be processed locally).

The absence of an institution of this type has obvious negative consequences for the Haitian economy. The only currently existing facility along these lines is a small quality-control laboratory which specializes in the inspection of locally produced essential oils and issues a quality certificate authorizing the export of the products. This laboratory is affiliated with the Agricultural and Industrial Development Institute (IDAI) through the National Equipment Corporation (SEN), a public agency established under a law enacted on 15 January 1963. The intention of the project is to expand and diversify the activities of this enterprise.

2. Aim of the project

The establishment of a national quality-control and standards laboratory which, together with the certificates it issues, will be officially recognized by local and international authorities. The laboratory will be equipped to apply modern and officially recognized methods of quantitative and qualitative analysis as well as physical, chemical and biochemical analytical techniques. Along with this, it will gradually develop a national system of standards.

3. Project activities

The promoters of this project include the Ministry of Commerce and Industry, the Agricultural and Industrial Development Institute (IDAI) and its affiliate, the National Equipment Corporation (SEN), a corporate body under civil law with its own capital. The authorities are seeking co-operation with a foreign institution specializing in this area.

4. Budget

Under the heading of personnel, the proposed initial staffing includes the management (manager and assistant manager) and the technical staff (three specialists in analytical chemistry and biochemistry) and 15 laboratory assistants).

	Number of months	$US
Buildings: 400 m^2 at 100 dollars/m^2		40 000
Documentation and the like		9 000
Machinery and equipment (including the testing of packaging for project 1.3., estimated at $100,000)		280 000

Assistance sought

Expert to develop a system of standards and quality control	6	15 000
Expert in technical studies	4	10 000
Experts to assist in the operation of the laboratory and the training of the personnel	30	75 000

1.9. DEVELOPMENT OF BUILDING STANDARDS

1. Introduction

At the present time Haiti lacks a building code as part of its public law. The intention of this project is, therefore, through the development of such a code or such standards, to lay down a body of national regulations governing the work of building planners (architects, engineers and consultancy organizations) and construction enterprises in the erection of dwellings and of public, commercial or industrial buildings.

These standards are to apply to the following work:

- Fabric of the building: Masonry;
  Concrete work;
  Laying of foundations;
  Ironwork, etc.
- Installation work: Electrical circuitry;
  Plumbing;
  Waste-water disposal systems;
  Sanitation systems.

These standards must be geared to local climatic conditions (standards for resistance to earthquakes and cyclones) while taking into account other factors that need to be considered.

Bearing in mind the wide use of prefabricated structural elements in modern building practice, there will also be a need for industrial standards governing the manufacture of these elements, which must satisfy all necessary conditions in respect of tolerances, safety and strength.

It is felt that the financial institutions that might be persuaded to invest in building programmes in Haiti will do so only when they see that their investments or loans will be put to work under a system of building standards binding on the country's construction industry.

2. Aim of the project

- Analysis and evaluation of technical legislation, regulations and codes, and their effects on economic activity and public safety;
- Preparation of recommendations for legislation and standards in the technical area and for the training of Haitian specialists in this area;
- Development of basic principles in accordance with international standards, suggestions for the necessary legal provisions, and an implementing programme.

3. Project activities

The Government is seeking a public institution as a possible partner with Haiti in carrying out this project. The Haitian agencies concerned are the Ministry of Justice, the Ministry of Public Works, the Ministry of Commerce and Industry, the National College of Haitian Architects and Engineers and the Faculty of Sciences, which might also play a role.

4. Budget

	Number of months	$US
Experts specializing in building standards and codes and in the related legal and enforcement aspects	6	15 000

2. INTRODUCTION AND ADAPTATION OF NEW TECHNIQUES

2.1. USE OF SOLAR ENERGY

1. Introduction

Haiti has many energy problems that can be solved - at least partially - by using solar energy.

There is a shortage of drinking water in certain coastal areas of Haiti. Desalination of sea water (production of fresh water) is perfectly possible with solar stills.

The country consumes an enormous amount of wood each year either in the form of charcoal (for cooking) or for firing ovens (baking, pastry-making etc.). This increases the erosion of arable land. In such a situation, the use of solar ovens seems to be the ideal approach.

Haiti is an essentially agricultural country, but many of its plains are arid and the ground-water bed may be shallow because of the karst massifs that surround the plains. The water can be extracted with solar pumps for irrigation and for fresh-water supplies to the rural population and their cattle.

The Department of Mines and Energy Resources already has a few items of solar apparatus (water heater, still, cooker, drier) that it is trying out. Unfortunately, there is not yet sufficient equipment to make measurements.

2. Aim of the project

To accelerate the exploitation of and generalize the use of solar energy.

3. Project activities

The Department of Mines and Energy Resources is seeking the co-operation of an agency specializing in the use of solar energy so as to:

- Complete the experimental studies;
- Select equipment suited to conditions in Haiti (cookers, water heaters, stills, driers, solar pumps);
- Start the local manufacture of some equipment;
- Arrange demonstrations in rural areas.

4. Budget

	Number of months	$US
- Experts to complete the experimental studies and help with the selection of equipment suited to local conditions	8	20 000
- Supply of additional apparatus and instruments		25 000
- Pilot manufacture of equipment in Haiti		
1 mechanical engineer	10	25 000
Supply of raw materials		50 000
- Demonstrations in rural areas 1 technician	6	15 000

2.2. ENERGY OF ORGANIC ORIGIN (BIOGAS)

1. Introduction

The Department of Mines and Energy Resources is concerning itself intensely with the introduction of alternative technologies for the production of energy from renewable and non-conventional sources. The aim is to satisfy the country's energy needs and reduce wood consumption and the amounts of fuel and gas imported.

Energy, fertilizers and rural development are priority objectives for the Government. The technology of energy of organic origin (biogas) not only provides energy and organic fertilizer but also contributes to the utilization of waste and the control of pollution. Moreover, because of its simplicity - and the possibility of manufacturing the equipment locally - the technology is particularly applicable in rural areas. Complete designs can be made available to Haiti by the developing countries.

2. Aim of the project

The production of cheap energy and the improvement of soil yields by the hygienic treatment of organic waste; demonstration, introduction and propagation of biogas technology.

3. Project activities

The promoter of the project in Haiti is the Department of Mines and Energy Resources. The Department seeks co-operation with a foreign institution to:

- Install 10 biogas generators for demonstration and for the adaptation of the technology:
- Establish the data for a cost-benefit analysis of the installations·
- Establish a detailed programme for the propagation of biogas technology in Haiti:
- Train skilled technical staff for the propagation of the technology in Haiti;
- Prepare for the manufacture of equipment suited to conditions in Haiti.

4. Budget

	Number of months	$US
Studies and training of local staff	4	10 000
1 mechanical engineer	2	5 000
Supply of equipment (including technical service)		45 000

2.3. ARTIFICIAL FUEL: STRAW BRIQUETTES

1. Introduction

As another approach to the search for replacement fuels, the Department of Mines and Energy Resources has developed an artificial fuel made from straw and assorted organic wastes. The technology of manufacture is very simple. The waste is first reduced to pieces a few centimetres - or even a few millimetres - in size with a simple device developed by the Institute. The reduced particles are then bound with a binder which consists of a sodium silicate waste from a soap factory.

The presses, moulds and heaters were designed by the Department and are all of local manufacture. They are, of course, extremely simple devices.

2. Aim of the project

Industrial-scale exploitation of straw briquettes.

3. Project activities

The Department wishes to:

(a) Analyse the equipment, with outside help, so as to see how it could be improved and adapted to industrial production;

(b) Determine the final technological process that could be put into general use throughout the country;

(c) Co-operate with a partner in the industrial production of briquettes.

The programme would be divided into three phases:

First phase. This would include the finalizing of the equipment and large-scale production for the fuel manufacturing centres: 1,000 presses, 30,000 moulds, 10 mixers, and 100 devices for reduction of particle size.

Second phase. This would be devoted to making the fuel and the manufacturing technique widely known.

Third phase. An enterprise with provincial branches would be set up. Initially, there would be 10 production centres headed by a central body until the centres are able to operate independently.

4. Budget

The Department of Mines and Energy Resources would be prepared to work with a technological institution which could send to Haiti:

	Number of months	$US
One expert mechanician with practical experience who would help with the improvement of existing devices and the development of a complete equipment design	3	7 500
An expert in technology would also be welcome to help the Haitian partners with the manufacture of the devices	6	15 000

2.4. LIGNITE BRIQUETTES

1. Introduction

The problem of energy is a crucial one in Haiti because of the increase in the cost of petroleum and the complete deforestation of the country for heating purposes.

This main source of energy is beginning to be exhausted. The main purpose of the Department of Mines and Energy Resources is therefore to increase the amount of research done on conventional and non-conventional forms of energy so as to make the country less dependent on imported energy supplies. It therefore wishes to develop lignite briquettes.

2. Aim of the project

To set up an experimental workshop to conduct research on lignite briquettes and design a factory to apply the final formulae on an industrial scale.

3. Project activities

Since the Department of Mines and Energy Resources already has a small craft-type workshop, it would like to work with an expert who could evaluate the workshop and make proposals for experiments to be carried out and for the setting up of a proper experimental workshop, or recommend another approach that would result in the setting up of industrial facilities (2 months, $5,000).

On the basis of the expert's recommendations, it would be possible to continue and expand research or to start preparing a feasibility and engineering study for an industrial briquette works.

2.5. USE OF THE CHLOROPHYLL PORTION OF SISAL (HECOGENIN)

1. Introduction

Sisal is grown in the dry regions of Haiti by agro-industrial enterprises and by small farmers. The area under sisal was estimated to be 17,000 ha in 1976 (in 1950 it was estimated at 55,000 ha). In recent years the output of

fibre has varied from 10,000 to 29,000 tons; in 1977 it fell to 7,000 tons, mainly because of competition from foreign producers and producers of man-made fibres.

Sisal fibre is used in the manufacture of such articles as string, bags and carpets. The waste is used in the manufacture of mattresses.

Until now, in the preparation of fibre, the chlorophyll portion (hecogenin) has not been used in Haiti.

2. Aims of the project

- To identify the technology for the use of the chlorophyll portion of sisal (hecogenin);
- To set up a plant in Haiti to extract hecogenin from sisal, hecogenin being a chemical that sells at a high price on the external market.

3. Project activities

The promoter of the project is the Minoterie d'Haïti, a dynamic national enterprise which possesses sisal plantations.

Activities envisaged

- Analysis of sisal;
- Installation of a factory to extract hecogenin from sisal juice;
- Drafting of production programmes;
- Setting up of a laboratory for chemical analysis;
- Training of local technicians:
  Extraction, purification and steroids separation methods;
  Quality control;
  Equipment maintenance.

4. Budget

	$US
Expert services estimated at	25 000
Equipment estimated at	100 000

The assistance requested consists of making the expert services (including training) and equipment available to the Minoterie d'Haïti on favourable financing terms.

2.6. USE OF CUSCUS WASTE

1. Introduction

Cuscus is found in various areas of Haiti, but particularly in the South of the country. The area planted is estimated to be 3,400 ha. The oil is extracted in a large number of small factories. Yield is 2 tons of roots per ha, with 1.5 per cent essential oil content. Total annual cuscus oil production is 250 tons. Since cuscus fibre is very strong, studies on the use of cuscus wastes seem to be fully justified.

2. Aim of the project

To make from cuscus waste a product that can be used as a fuel, as a building material or for any other useful application.

3. Project activities

The Minoterie d'Haïti, which is one of the main factories producing cuscus oil, would like to co-operate with a technical institution concerned with this field. It is ready, with the authorization of the competent Ministry, to co-operate with any other friendly country that can provide the necessary technical studies with a view to making the best use of the waste in all possible applications. If the technical help can be provided, the Minoterie d'Haïti will be able to co-operate financially in the setting up of a factory.

Estimated cost of technological research $25,000

2.7. PRODUCTION OF CEMENT TILES

1. Introduction

Tiling is very little used in Haiti; the cost is too high and the technique insufficiently developed.

A few enterprises have been making cement tiles for years in factories of a semi-craft type with out-of-date equipment.

High quality tiles are all imported. By modernizing the enterprises, these imports could be avoided, since the raw material is available locally.

Demand is very high and will increase in the years to come because of the development of building of all kinds.

2. Aims of the project

- To provide a Haitian enterprise that is already well known on the market for the quality and reliability of its goods with the equipment needed to enable it to start industrial-scale production with better technology;
- To increase the output of this firm as the market develops;
- To eliminate imports of "superior" grade tiles, which could be manufactured in Haiti more cheaply;
- To follow the development of technology in the field in order eventually to obtain better output levels and also better quality.

3. Project activities

Study of the means to be applied with a view to improving existing installations progressively in accordance with the imported products in greatest demand.

	Number of months	$US
1 expert technician	3	7 500
Technical support for five years provided by an expert who would move around in Haiti, as follows:		
First year	5	12 500
Second year	3	7 500
Third year	1	2 500

The primary task would be to supervise the commissioning of the new installations and make any desirable improvements in them each year.

As output increases, the new technologies needed for better over-all results would be introduced. With regard to financing, close co-operation is envisaged with an enterprise specializing in the field, including the possibility of financial participation by that enterprise, or a joint venture.

2.8. CREATION OF A PRODUCTION UNIT FOR FIBRO-CEMENT BUILDING ELEMENTS

1. Introduction

Up to now, cement has been used for building in Haiti in the form either of concrete or of blocks. Some houses, particularly on the high ground of Port-au-Prince, have walls of "rocks", but these are for the most part villas belonging to the wealthy class: the ordinary people do not have the means to use a building material of this kind.

Fibro-cement could be used particularly for interior dividing walls and fencing: the first concern of a house-owner in Haiti is to put a wall or fencing round the house. At present the wall or fencing is made of "rocks" (expensive) of concrete topped with ironwork (also expensive) or simply of concrete posts with barbed wire strung between them (rapid deterioration). Some building sites are fenced with connected sheets of metal.

It is felt that the use of fibro-cement slabs, mainly for fencing, would be cheap, more rational, more aesthetic and faster, and that the slabs would last much longer than the materials used at present.

2. Aim of the project

To introduce into building the use of fibro-cement in slabs, by setting up a production unit in Haiti specially suited to current needs.

3. Project activities

The promoter of the project, Vorbe et Fils (Carrefour Shade, Port-au-Prince), is known as a contractor with experience in concrete, civil engineering, pile-driving, wharfs, prefabricated buildings, bridge construction and erection, etc.

The Haitian partner seeks co-operation with and assistance from a foreign enterprise which already has good experience in the manufacture of fibro-cement and which could work with the Haitian enterprise and provide the technical support, including training in the early years.

4. Budget

Phase 1

Expert services for the preparation of a feasibility study and installation plan	3 months	$7,500

Phase 2

Installation of units, technical and financial input required, including training of local staff.

2.9. PRODUCTION OF ABSOLUTE ALCOHOL FOR FUEL

1. Introduction

Haiti imported petrol for fuel as follows:

	kg	$US
1974/75	9 655 346	3 737 511
1975/76	11 632 326	4 770 501

Because of the increasing numbers of motor vehicles in the country and rising international prices, the quantities and value of petrol imports have continued to rise since 1976.

The country has launched a programme of on-land and off-shore hydrocarbon resource prospecting. There is no positive information so far.

At the same time, alcohol is produced from sugar-cane throughout the country, and particularly in rural areas. The following distilleries existed in 1977:

Boiler points[3/]	
- 0.5	36
0.5 - 1.0	80
1.0 - 3.0	81
3.0 - 5.0	9
Over 5.0	7
Not specified	86
Total	299

2. Aims of the project

To study the possibilities and conditions for installing an industrial unit that would mix absolute alcohol with petrol for local consumption;

To install a pilot and production unit.

3. Project activities

Phase 1

The Agricultural and Industrial Development Institute (IDAI) at Port-au-Prince seeks co-operation with a foreign institution in order to:

- Prepare a programme for absolute alcohol production and define the conditions for its execution;
- Draw up a plan for the preparation of agricultural and industrial infrastructures and define the responsibilities of the agricultural and industrial departments;
- Determine the terms of reference for a complete technical and economic study, with an indication of the most appropriate time for the study.

Phase 2

- Detailed technical and economic research;
- Improvement and expansion of existing distilleries;
- Programmes of trials for the mixture of absolute alcohol with the petrol used in Haiti;
- Instrumentation.

3/ A boiler point means one still capacity.

The promoter and partner

The agency interested in this project is the Agricultural and Industrial Development Institute (IDAI), an autonomous State agency governed by the law of 30 May 1973. IDAI is a corporate body and possesses its own assets. The law defines the objectives of IDAI as follows: "The main aim of the Institute is the development and expansion of the economy in the agricultural and industrial sectors."

To do this, it must:

(a) Promote the formation of agricultural and industrial enterprises which can help to increase national production;

(b) Encourage the production of articles that are usually imported;

(c) Make credit accessible to small operators.

4. Budget

Phase 1	estimated at	$15,000
Phase 2	estimated at	$150,000

2.10 TECHNICAL ASSISTANCE TO THE RECENTLY ESTABLISHED MARBLE WORKS

1. Introduction

Haiti is rich in building stone and marble deposits. These deposits have been worked for five years by the Department of Mines and Energy Resources with UNIDO assistance. It is the first time that an enterprise has been set up in Haiti to work marble deposits and marble. A capacity of 10,000 m^2 a year is planned. Investment in equipment for quarrying and marble working is $100,000. It is thought that the local market alone will be able to absorb the planned output easily. After a period of development and strengthening of the works, there will be favourable possibilities of exports to the United States.

2. Aim of the project

Technical assistance in the quarrying and working of the marble from a foreign enterprise with extensive experience in these fields.

3. Project activities

The Haitian enterprise "Industries marbrerie" in Port-au-Prince seeks technical assistance from a foreign partner:

1 expert for the quarries	Minimum 12 months	$30,000
1 expert for stone-working	Minimum 12 months	$30,000

It is expected that the services of operational experts to work closely with and train Haitian technicians will be provided.

The works lacks a shovel-dozer and a travelling crane (6 tons). The provision of such equipment would be greatly appreciated.

The investment cost is estimated at:

Shovel-dozer	$50,000
Travelling crane	$40,000

2.11. DEVELOPMENT OF THE USE OF FIBREGLASS IN INDUSTRY

1. Introduction

Two Haitian firms are currently using fibreglass to produce:

(a) Pleasure-boats up to 22 ft;
Roofing for houses, barns, warehouses, factories, etc.;
Tanks of up to 1,500 gallons capacity;

(b) Assorted furniture and beach equipment;
Kitchen equipment;
Sanitary equipment (sinks, basins, etc.).

These industries can certainly enter larger markets, provided their equipment is expanded and their production diversified, particularly in the following areas:

- Packaging;
- Housing (manufacture of fibreglass fencing elements, or supports for other prefabricated elements, septic tanks, etc.);
- Large elements for inclusion in the fittings of marinas or seaside tourist complexes (such as floating pontoons).

2. Aim of the project

The enlargement of an existing factory in Haiti so as to enable it to enter new markets on an industrial scale.

3. Project activities

The Haitian enterprise Tekniglass Industrie (Chancerelles, B.P. 2063, Port-au-Prince) seeks a partner who could help it with:

(a) Making a general study of the market for fibreglass in Haiti and the possibilities of expanding it in various areas.

1 marketing expert	3 months	$7,500

(b) Making a study of the present equipment of the existing Haitian enterprise and assessing the additional equipment to be envisaged.

1 expert	2 months	$5,000

The enterprise would like:

(a) Technical support for a minimum of one year to help it adapt itself to the new openings for fibreglass that may occur on the local and international markets; 12 months $5,000

(b) A financial contribution and the possibility of obtaining raw materials on favourable conditions.

The investment cost is estimated at $100,000.

2.12. MANUFACTURE OF BOARD FROM RICE BRAN AND STRAW

1. Introduction

The Artibonite plain (about 28,000 ha irrigated) produces 100,000 tons of paddy a year. The rice is husked by two modern mills belonging to the Artibonite Valley Development Agency (ODVA) and a large number of small milling units distributed throughout the plain. The ODVA installations separate the by-products into coarse bran, polishings, meals and broken rice; in the small craft-type units, all these by-products exit from a single opening.

In the recent past, the bran from the small mills sold fairly well as pig feed. Lately, however, swine fever has killed off almost all the pigs in the plain, and the rice bran that accumulates is burnt.

The project concerns the establishment in the Artibonite lowland area of an installation to manufacture board - light blocks produced by vibration and compression of a mixture of cement, sand and rice waste.

Annual rice production in Artibonite is about 100,000 short tons of paddy rice, which leaves about 30,000 tons of bran in milling, corresponding to a volume of waste of about 100,000 m^3. At the same time, the problem of rural housing in Artibonite is becoming increasingly acute as population and family incomes increase, and building materials become more expensive.

2. Aim of the project

Utilization of a local resource that is being wasted at present, by mixing it with other local materials (cement, sand and iron); production of a light building material particularly suited to the soils and subsoils of Artibonite; development of a small regional industry which can be run financially and technically by the local population and regional development agencies; local manufacture of a building material which may prove essential for the modernization of the villages of the valley and for low-cost building in the neighbouring villages (St. Marc, Petite Rivière, Gonaïves, Dessalines); establishment of a factory for the manufacture of board from rice bran and straw.

3. Project activities

An expert mission to study the possibility of setting up one or more installations of this type, make a market study (rural and urban) in co-operation with the territorial development service and ODVA, estimate the investment required and determine the technical and economic infrastructure needed.

Once the technical studies have been finished and the equipment specifications laid down, the Haitian agency concerned (ODVA) would come to an agreement with the foreign agency on appropriate assistance, the source and methods of financing for the organization of fixed assets (equipment, buildings, vehicles) and the constitution of the operating capital.

4. Budget

	Number of months	$US
Expert for the study	3	7 500
Estimated investment cost		650 000
Supply of equipment		500 000
Assistance for the technical service and for training	6	15 000

3. SECTORAL INVESTMENT PROJECTS

3.1. EXPANSION AND DIVERSIFICATION OF PRODUCTION OF THE ACIERIE D'HAITI

1. Introduction

For nearly seven years, the Aciérie d'Haïti, a Haitian limited company, has been supplying the local market with square concrete-reinforcement bars and high-resistance mild steel. Its production ranges from 1/4 in. to 1 in. and from 1 ft to 50 ft. Angles and square iron bars account for a small proportion of its production. Its capacity is 30,000 tons/year.

The electric arc furnace at the Aciérie d'Haïti, with a capacity of 8 tons, is not yet operational, but will become so in 1980-1981.

Rolling mill	1 complete rolling-mill train manufactured in Spain under licence from Danieli (Italy) for the production of reinforcement bars and profiles
Drawing mill	1 unit for steel-wire drawing 1 unit for straightening wire and profiles
Foundry	1 unit for smelting (cupola) and casting iron for the manufacture of spare parts 1 centrifugal casting machine for cast iron pipes
Mechanical engineering workshop	1 full set of equipment for a machine shop for maintenance and the manufacture of spare parts for the rolling mill

The Aciérie d'Haïti S.A. is located on an industrial site of adequate size to make possible considerable expansion. The production buildings are well arranged in a logical manner, making possible national shipping of products.

The services, namely:

- Production;
- Sales; and
- Administration

are very well organized. The management of the enterprise is dynamic, enterprising, efficient and competent. Manufacture is still being partly directed by foreign specialists.

2. Aim of the project

The promotion of co-operation between the Aciérie d'Haïti and developing countries in the expansion of the plant, the diversification and specialization of production and the training of Haitian workers and technicians.

3. Project activities

(a) A team of experts from an independent technological institution will study the possibilities for the expansion of the plant, and the orientation to be given to it, in the light of Haitian conditions (local market), the cost of labour, raw materials, electric power, etc., in the medium term (approximately five years), taking into account the plans and proposals already made, and will suggest optimum technological solutions.

(b) Co-operation in production with enterprises in developing countries, possibly with sharing of product ranges in order to make possible larger runs.

(c) Co-operation in the preparation and realization of investment:

		Estimated investment cost in dollars
(i)	Installation of the section The steel mill itself (electric arc furnace), cost of installation and supplementary investment (compensation batteries, high-voltage lines), etc.	1 400 000
(ii)	A new rolling mill, 50,000-60,000 tons	7 000 000
(iii)	Expansion of the wire-drawing mill (from 1,000 tons to 3,000 tons a year)	300 000
(iv)	It is planned to build a galvanization plant, calling for the construction of other plants, e.g. for the production of wire netting, barbed wire, clothes hangers and binding wire The Aciérie d'Haïti might build these plants if other Haitian industrialists were not interested in doing so.	1 000 000

4. Budget

It is requested that the following technicians should be made available:

		Number of months	$US
Re (a)	1 team of experts	6	15 000
Re (c)	(i) 1 technician	18	45 000
	(ii) 1 technician	18	45 000
	(iii) 1 technician	18	45 000
	(iv) 1 technician	18	45 000

The proposed duration of technical assistance would make it possible to train Haitian cadres. Fellowships would also be requested as follows:

24	28 000

The investment cost is an approximate estimate. It is expected that the technology and equipment selected and the financial terms (including the possibility of direct investment) will be in keeping with Haiti's very limited possibilities.

3.2. ESTABLISHMENT OF A NEW FOUNDRY

1. Introduction

The foundry currently operating in Haiti has an extremely limited production capacity (maximum casting output 18 tons per month), and its equipment is antiquated and rudimentary. It has 35 manual and office workers.

This enterprise, the Fonderie Nationale S.A., occupies a site of 2,000 m^2, but has no possibility to expand. The buildings are very modest and do not permit rational manufacturing. The plant produces a variety of grey castings, namely:

- Charcoal-heated laundry irons;
- Spare parts for grain mills;
- Spare parts for sugar-cane crushers;
- Bodies and closing plates for irrigation gates;
- Inspection hole covers;
- Ground grates;
- Housings for water meters.

There is no lack of work in Haiti for a well equipped foundry. It is estimated that a demand of 98 tons a month should be satisfactory for a new foundry.

2. Aim of the project

The establishment of a polyvalent foundry at Port-au-Prince with an annual capacity of 1,200 tons.

3. Project activities

		$US
(a)	Engineering layout and design for a foundry, taking into account local conditions, including equipment specifications	25 000
(b)	Construction of the foundry, installation of equipment. Covered area: 2,500 m^2	
	Equipment	700 000
	Building and other facilities	200 000
(c)	Expertise for supervision, training and starting up	
	Four experts for 12 months and fellowships	150 000

The Haitian partner will be the Fonderie Nationale S.A., Port-au-Prince. Close technical and economic co-operation with the foreign partner, financial participation and supplier credit on favourable terms are requested.

3.3. ESTABLISHMENT OF A SHIP-REPAIR CENTRE AT PORT-AU-PRINCE

1. Introduction

The port at Port-au-Prince is being steadily modernized. The National Port Authority (APN) has the following installations, the access channels having been dredged to a depth of 32 ft.:

- One main wharf, 1,400 ft;
- One annex wharf, 1,250 ft south and 450 ft north;
- One finger pier, 1,700 ft;
- Two berths for roll-on-roll-off ships and 15 hectares of terreplein;
- Two transit sheds covering a total area of 120,960 sq ft;
- Seven warehouses covering a total area of 170,705 sq ft.

As regards the main equipment, the following may be mentioned:

- One gantry crane, 30 tons;
- Two travelling cranes, one of 150 tons and the other 90 tons.

In 1977/78, the turnover of ships was 695, representing the handling of about 1 million tons of cargo, approximately 60 per cent of which was containerized - meaning around 15,000 containers.

As regards prospects for the development of maritime traffic in general, the following are planned:

- Establishment of a commercial and industrial free zone at Port-au-Prince, which will be established on a site with an area of around 425,000 sq ft, but can be enlarged to meet requirements since the APN has other large areas which could be developed;
- Establishment of the first three coasting-trade ports at Port-au-Prince, Jérémie and Port-de-Paix, a programme which will be followed by the establishment of eight other ports;
- Lastly, it should be pointed out that the Haitian Government has recently set up a semi-public company with a specialized Spanish group with a view to rapidly launching an industrial fishery operation.

All this implies that maritime traffic in all its forms (trade, tourism, yachting and fishing) will increase considerably in the next few years, and the port at Port-au-Prince will be increasingly used by foreign merchant shipping.

At present, Port-au-Prince has no installations able to provide ships which already use or will use the island's port installations with a ship maintenance and repair service.

This appears paradoxical when it is considered that:

- The roadstead at Port-au-Prince is perfectly sheltered;
- Labour is plentiful and inexpensive;
- The Aciérie d'Haïti could produce locally certain materials (sheet metal, angles, bolts, etc.) widely used in this field;
- Certain other products, such as marine paints, could be produced locally;
- It is now possible to train Haitian technicians specializing in general mechanics, welding, boiler-making, etc., at the pilot vocational training centre at Port-au-Prince.

2. Aim of the project

The establishment of a ship maintenance and repair centre at Port-au-Prince.

3. Project activities

The National Port Authority at Port-au-Prince intends to participate in the establishment of a ship maintenance and repair centre, in co-operation with a foreign institution and Haitian private entrepreneurs.

A study on the commercial and technical aspects of the matter will be carried out through a series of surveys aimed at determining the priority requirements generally indicated by the operators and owners of vessels which ply the Caribbean (freighters, transatlantic liners and cruise ships, fishing boats and yachts).

A study will then be made of the possibility of interesting a foreign finance institution in the establishment of a dry dock at Port-au-Prince, which would make possible operation at a more advanced level, particularly with regard to careening. A dry dock able to accommodate ships of up to 5,000 tons might be considered.

The centre's profitability could be even better guaranteed with regard to general mechanical work if the Government entrusted servicing operations for certain public works equipment and heavy vehicles to it.

Phase 1

Feasibility study for the centre	$25,000

Phase 2

Establishment of the centre in the context of a semi-public enterprise, with participation of the Port Authority, a foreign shipyard and entrepreneurs	
Investment cost estimated at	$3-5 million

3.4. EXPANSION AND DIVERSIFICATION OF A SMALL-SCALE INDUSTRY ENTERPRISE PRODUCING FURNITURE AND LIGHTING FIXTURES

1. Introduction

In the past 15 years, the building sector has expanded very substantially in Haiti. Public buildings, office buildings, industrial establishments, hotels, banks, schools and housing have been built. Furniture production has, however, remained at the artisanal stage.

There are five or six workshops, including the Ateliers Raymond Menos, which are moving beyond the artisanal stage and seeking co-operation with developing countries. Each one specializes in different lines, all of them together are unable to meet demand. Therefore, in order to obtain standard furniture within reasonable lengths of time, most builders must import from abroad.

Current demand makes it essential that there should be industrial manufacturing. In addition to the local market, the Ateliers Raymond Menos also have an eye on the Caribbean and the United States markets. Haiti is well located to supply these markets. The Ateliers Raymond Menos have been operating

in the Haitian market for 16 years and specialize in the manufacture of furniture made either entirely of metal or of metal combined with other local or imported materials. They also manufacture kitchen furnishings and desks made of laminated wood faced with laminated plastic. The enterprise now employs 43 persons.

2. Aim of the project

The expansion of the plants, production on an industrial scale, the diversification of production and the development of new models. In order to achieve this objective, close long-term co-operation with a foreign enterprise would be required.

3. Project activities

The Ateliers Raymond Menos intend to co-operate with a foreign partner in:

(a) Construction in the industrial zone of a new establishment appropriate for production on an industrial scale;

(b) Selection and purchase of new machinery and equipment suitable for the scale of production and the technology to be elaborated;

(c) Identification of the most economical sources of materials;

(d) Strengthening of research, of the application and development of models and of new techniques for producing them;

(e) Surveys of local and international markets; joint marketing.

	Number of months	$US
2 experts in the development of models (with interruptions)	20	50 000
1 marketing expert	12	30 000
1 expert in organization and technology relating to production and the selection of machinery	12	30 000
Training:		
Training of technicians in Haiti is also requested. Investment for building and equipment is estimated at: not including $100,000 for working capital.		190 000

4. Lighting fixtures

The Ateliers Raymond Menos, which are the only workshops producing lighting fixtures, are unable to meet the requirements of the local market. Nearly all these articles are therefore imported.

Consequently, the Ateliers Raymond Menos have become interested in establishing a factory, on an industrial basis, to specialize in the manufacture of lighting fixtures, and would like to have as a partner a major manufacturer in an overseas country to provide technical and economic co-operation.

5. Aim of the project

To establish a factory specializing in the manufacture of lighting fixtures, to diversify production and to develop new models.

6. Activities under the project

1 production expert	2 months	$5,000
1 marketing expert	3 months	$7,500

3.5. STOCK-BREEDING/SLAUGHTER-HOUSE/PROCESSED PORK PRODUCTS MANUFACTURE AT LES CAYES

1. Introduction

The establishment of a modern slaughter-house, as proposed in this project, has in view the utilization of the stock-breeding and agricultural resources of the Les Cayes region. From the immediate point of view, the slaughter-house is intended to exploit stock-breeding resources in the region under more rational economic conditions than at present. Livestock is now herded from Les Cayes to Port-au-Prince, a distance of 200 km, arriving completely exhausted after travelling 10-12 days. As a result, the animals lose approximately 20 per cent of their body weight, making it necessary for them to undergo a period of recovery and fattening before being slaughtered.

This increases production costs. The corollary of this system is that the slaughter-house at Port-au-Prince pays stock-breeders extremely low prices, and this in turn acts as a deterrent to the production of livestock and discourages stock-breeders from making greater efforts to develop the raising of livestock.

Present demand is not met by local production, and the cost of imports is prohibitive for low-income consumers.

For the Les Cayes region, it is estimated that demand will increase from 58,280 pounds this year to 86,270 pounds in five years' time.

For the other local markets, it will increase from 73,000 pounds this year to 478,880 pounds in five years' time.

In addition, the Republic of Haiti is unable to fill the quota granted it for exporting meat to the American market.

2. Aim of the project

Although this project is industrial in nature, it depends on the implementation of a stock-raising programme making it possible to establish a modern slaughter-house with auxiliary facilities in the city of Les Cayes.

It is expected that the following would be produced:

(a) Fresh meat;
(b) Frozen meat;
(c) Salted and/or smoked and/or tinned meat;
(d) Processed pork products (ham, sausages, hot dogs, etc.);
(e) Leather.

Since supply of the complex depends above all on the cattle-raising programme, the study made envisages an increase in the production of meat which has been boned and cut into pieces from 744,975 pounds in the first year to 1,065,173 pounds in the fifth year.

Description of the planned slaughter-house

The following stages are planned:

- Slaughtering using a humane killer;
- Bleeding;
- Skinning;
- Washing and inspection;
- Chilling in cold storage;
- Cutting up;
- Storage;
- Freezing;
- Shipping.

The slaughter-house will be supplied by the cattle-raising and pig-raising programme, and from other sources. In addition, raw materials for processed pork products such as colouring spices and additives will be imported as appropriate.

The slaughter-house would be located at Les Cayes, on the southern peninsula of Haiti, approximately 200 km from Port-au-Prince.

Personnel for the planned slaughter-house

The personnel would include a director-general, a technical director, an accountant, a secretary and 25 workers.

Promoters

The agency interested in this project is the Agricultural and Industrial Development Institute (IDAI), an autonomous State agency governed by the law of 30 May 1973. IDAI is a corporate body and possesses its own assets. The law defines the objectives of IDAI as follows: "The main aim of the Institute is the development and expansion of the economy in the agricultural and industrial sectors."

To do this, it must:

(a) Promote the formation of agricultural and industrial enterprises which can help to increase national production;

(b) Encourage the production of articles that are usually imported;

(c) Make credit accessible to small operators.

The direct promoters of the project are the National Equipment Corporation (SEN), a subsidiary of IDAI, and the Société anonyme de boucherie (SAB). SAB is a company set up in 1968, in which SEN is associated with stock-breeders from the Les Cayes plain. This company already owns a small slaughter-house to meet the needs of the town and its surroundings.

4. Budget

Breakdown of investment

	$US
Pre-investment costs	50 000
Site, 27,000 m^2	20 000
Buildings, 1,007 m^2	500 000
Pen, 210 m^2	7 000
Machinery and plant	330 000
Other equipment and furniture	35 000
Rolling-stock	40 000
Working capital	100 000

The promoter is seeking a partner supplying technical assistance in the selection of installations and supervision of project implementation. Experts who can work together with the local personnel in management and technical servicing, and train the local personnel, are requested.

Experts		
For the pre-investment phase, examination of existing technical plans, selection of equipment, supervision and installation	24 months	$60,000

Experts		
Operational experts, management, technical services and the training of local personnel	36 months	$85,000

3.6. ESTABLISHMENT OF A TEXTILE COMPLEX

1. Introduction

There is little industrial activity in the textile sector in Haiti. Local consumption requirements are met mainly through imports. The sector has, in addition, been somewhat disturbed in the past few years by massive imports of second-quality products, remnants, second-hand clothes or items imported under these headings.

The main raw material is cotton, in respect of which the Société d'équipement national has the purchasing monopoly. Cotton production is largely financed by this agency. The product is a medium-staple cotton (1 1/8 inches) classified between "middling" and "strict middling".

At present (1979 harvest) the production baled by the Agricultural and Industrial Development Institute (IDAI) can be estimated at around 4 million pounds of raw cotton. IDAI has a cotton office whose main purpose is to ensure that producers increase their production and its profitability. If necessary, the cotton staple required by the plant may be imported in the first few years. An active policy of promotion of cotton growing will enable local production to meet the requirements of the plant. Synthetic fibres will be imported.

2. Aim of the project

The establishment in Haiti of an industrial textile complex which is either partially or fully integrated. Various types of cotton cloths and synthetic blends would be produced. The average count would be around Nm 26, and the range would be from Ne 10 to Ne 28 (blue denim, chambray, drill, etc.). In the first stage, the plant's production should cover one quarter of domestic consumption (approximately 1,900 tons of various types of cloth a year).

3. Project activities

A group of private and public entrepreneurs, including the National Equipment Corporation (SEN), is seeking a foreign partner for the setting up of the plant. SEN is an affiliate of IDAI, created by the Decree of 15 January 1963 and operated under the Decree of 20 January 1967. It is a corporate body under civil law and possesses its own assets.

4. Budget

The breakdown of the capital investment[a/] is estimated as follows:

Revision of preliminary studies

	$US
Sites (to be determined)	
Buildings	
(a) Main building - 9,000 m^2, 75-80 dollars/m^2	700 000
(b) Auxiliary buildings	300 000
(c) Machinery and equipment	5 200 000
(d) Working capital	400 000
(e) Miscellaneous	400 000

a/ These data are based on a study carried out in 1972 by a French institute. A group of UNIDO experts is preparing a new feasibility study (market survey, technical study, profitability study). It will complete the study before the Solidarity Meeting of Ministers of Industry. The Haitian authorities will make the results of this study available to the potential partner.

Financing plan:

Share capital	33.3%
Loan for fixed capital	66.7%

Expertise is requested for supervision of implementation and assistance in the operation of the plant. Direct investment by the foreign partner, the provision of machinery and equipment and the form of joint marketing will be the subject of negotiations.

Experts, technical services, training of Haitian staff:

60 months - $150,000

3.7. MANUFACTURE OF CASSAVA FLOUR FOR USE IN BREAD

1. Introduction

The project involves the establishment of a new enterprise to produce cassava flour for blending in a proportion varying from 10 to 20 per cent with wheat flour produced from imported wheat by the Minoterie d'Haïti.

Since the main objective is to reduce imports of wheat flour, local production of an amount equivalent to 10-20 per cent of imports, in the long term, is envisaged.

Over the past few years, Haiti has imported the following amounts of wheat: 80,778 tons in 1975, 91,774 tons in 1976 and 98,944 tons in 1977. The value of imports amounted to between $16 million and $18.6 million in the same period. Haiti produced the following amounts of flour: 72,040 tons in 1975, 72,706 tons in 1976 and 98,423 tons in 1977.

On the basis of a substitution amounting to around 10 per cent, therefore, cassava flour requirements would amount to around 100,000 tons.

2. Aim of the project

The establishment of a cassava flour plant with a capacity of 600 tons (for the first unit). The cassava flour must have physical characteristics as similar as possible to those of wheat flour and must also have a maximum starch and protein content.

3. Project activities

The Haitian promoter of the project is the Agricultural and Industrial Development Institute (IDAI) (B.P. 1313, Port-au-Prince, Haiti), whose Deputy Director-General is Mr. Georges Louis, agronomist. The objectives of IDAI, as defined in the last relevant law, dated 10 May 1973, call for it to assist in agricultural and industrial promotion through investment credits or technical assistance. The enterprise to produce cassava flour has not yet been set up, but participation by the private sector in Haiti is being sought.

As regards the cassava, on the basis of an industrial yield of around 30 per cent in terms of flour, around 2,000 tons of cassava root-stock would be required. IDAI is now investigating the introduction of agricultural credits to planters in order to ensure the supply of the planned works with the raw material. Another raw material will be the wheat flour already available at the Minoterie d'Haïti. Other materials used to improve the physical qualities of the flour or to accelerate fermentation are also required and are available through the Minoterie d'Haïti, which will itself carry out the blending.

The qualities required are not yet available, and the Institute has therefore undertaken an agricultural programme, for which it already has technical assistance from CIAT (International Centre for Tropical Agriculture), in Cali, Colombia.

This programme provides for the introduction of new varieties of cassava and new practices of cultivation, with a view to increasing output per hectare.

In the first stage, approximately 1,000 hectares will be financed on the basis of around 400 dollars/hectare.

In addition, in the region envisaged (the central plateau), it will also be necessary to undertake certain infrastructure work, in particular relating to access roads, to make possible speedy shipping of the cassava root-stocks, which are a highly perishable raw material. Allowing for $10,000 per km, and given a requirement of 15 km of road, the finance needed is estimated at $150,000.

The following are the stages in the production process: Preparation of root-stocks, extraction of starch granules (grinding and separation), purification, moisture removal (centrifuging and drying), finishing (milling and sifting) and packing (bagging in 50-kg sacks and weighing).

Site of the plant

Central plateau

Personnel

Management and technical supervision:

1 production supervisor

1 shop foreman

Labour:

13 workers

4. Budget

Breakdown of capital investment

	$US
Pre-investment costs	10 000
Sites (2 hectares)	1 000
Buildings (220 m^2 x $80)	17 000
Machinery and equipment	134 780
Auxiliary services	31 000
Working capital	40 000

Financing plan

Share capital	70%
Loan	30%

Direct investment, supply of machinery and equipment, management ability and technical know-how, including training of local personnel, are requested.

Experts for technical services and the training of Haitian staff

8 months - $20,000

3.8. MANUFACTURE OF PHARMACEUTICAL PRODUCTS

1. Introduction

In 1977, the value of imports of aqueous solutions for intravenous drips (dextrose, sodium chloride, etc.) was estimated at $930,000. Current demand is met exclusively by imports. There is sometimes a shortage of these products in Haiti.

2. Aim of the project

The establishment of a plant, the first one of its kind in Haiti, to manufacture certain essential products which are now imported, such as solutions to be administered intravenously, packed in non-toxic PVC bags with capacities of 1,000 ml and 500 ml. Planned annual production capacity is 250,000 units, based on an eight-hour operation.

3. Project activities

The Agricultural and Industrial Development Institute (IDAI) (B.P. 1313, Port-au-Prince, Haiti) is the government agency involved in this project. The Haitian partner is a new private company registered with the Secretariat of State for Commerce and Industry on 19 April 1977 (Mr. Karl Eric Boucicaut, B.P. 372, Port-au-Prince).

It is planned to import the raw materials, e.g. sodium chloride (injectable), 5,000 kg/year, and dextrose (pyrogen-free), 5,000 kg/year.

The other materials required will be PVC bags: 300,000 bags with capacities of 500 ml and 1,000 ml, and 14,000 sacks for packing the small bags (at present only the 14,000 big sacks are available on the spot). As regards the production process, the steps are expected to be water treatment (filtration, demineralization, distillation), blending, dosing, filling of bags, sterilization in an autoclave and laboratory control.

The site will be Port-au-Prince.

Personnel:

1 director-general
1 technical director

Technical staff

1 pharmacist
1 chemist
3 technicians

Labour

1 specialized worker
10 unskilled workers

4. Budget

Breakdown of capital investment

	$US
Pre-investment costs	40 000
Sites	20 000
Buildings	186 000
Machinery and equipment	302 000
Working capital	100 000

Technical assistance for the preparation of pre-investment studies, supervision of implementation and the technical service during the first years of operation of the plant, including training of personnel, are sought.

	Number of months	$US
1 expert in pre-investment studies	2	5 000
1 pharmacist (technical service, training)	12	30 000
1 chemist (technical service, training)	12	30 000

Financial participation by the foreign partner is a matter for negotiation with IDAI and the private entrepreneur.

3.9. ESTABLISHMENT OF SALT REFINERIES

1. Introduction

Haiti produces between 400,000 and 500,000 barrels of crude sea salt (around 40,000 tons) a year. This salt is consumed by most of the population.

The table salt consumed mainly in affluent urban circles is an imported salt sold in grocery stores, supermarkets and other shops. The crude salt consumed contains organic matter, sulphates, calcium, magnesium, dust and a certain amount of fine sand. After removal of the foreign bodies, this crude salt is around 97 per cent NaCl. The crude salt is collected in salt pans using craft-type techniques. The most productive regions are located, for Artibonite and the north-west, at Grande Saline, Gonaïves, Coridon, Anse-Rouge and Baie de Henne, and in the south in the region of Côte de Fer and Aquin.

2. Aim of the project

To establish one or two salt refineries located near the main production centres in order to use as much labour as possible in these regions and put an end to imports of table salt, to improve the quality of the salt consumed by rural and urban populations, whose health is affected by the poor quality of the salt, gradually to develop an industry for salt by-products, to produce a preserving salt well suited to the development needs of industrial fisheries, and to improve the means of production of salt pans.

3. Project activities

A Haitian entrepreneur is at present setting up an organization with a view to bringing together the main salt producers in the north-west, which is the area from which he himself comes and where he owns a number of salt pans. This Haitian entrepreneur is seeking a foreign partner for co-operation and assistance in the technical, administrative, commercial and financial spheres.

4. Budget

Phase 1

Thorough study of the current situation, elaboration of steps to be taken to improve production techniques and establish one or two refineries in the most appropriate areas (refined salt and improved salt)	6 months	$15,000

Phase 2

Establishment of the refinery units; technical and financial support, including the training of local staff, is requested.

3.10. PLANT FOR THE BLENDING AND BAGGING OF CHEMICAL FERTILIZERS

1. Introduction

The growth of the population and the need to meet its food requirements, poor yields on a small arable area (900,000 hectares), dependence on imports from abroad for a whole range of agricultural and livestock products and the gradual decline in the volume of export commodities all make it essential to find a solution to problems connected with soil fertility, in particular that of flexible availability of fertilizers at a low price.

Haiti uses approximately 12,000 metric tons/year of chemical fertilizers, distributed as follows:

Department of Agriculture	32%
Independent agricultural bodies	34%
Private importers	34%

It should be pointed out that 30 per cent of the imports consist of simple fertilizers (urea, ammonium sulphate). The Haitian market for fertilizers is beginning to develop and can be expected to expand rapidly; it may reach 20,000 tons in 1981. The reaction of demand to the relatively advantageous conditions of the Dominican supply offers a reliable indication of the potential positive impact on fertilizer consumption of a local supply consciously aimed at motivating the market, commercially promoting the product, building up a basis of infrastructure and technology and encouraging the dissemination of fertilizers.

2. Aim of the project

The project envisages the establishment of facilities for the reception and bulk storage of fertilizer raw materials (simple fertilizers and basic compound fertilizers), together with dry-blending and bagging installations, with an annual manufacturing capacity of 30,000 metric tons of simple and blended fertilizers.

3. Project activities

The following would be provided for:

- Conveyor-belt reception facilities able to accommodate 60 metric tons unloaded from the dock;
- Bulk storage capacity of 7,500 metric tons of raw materials, to be distributed into six compartments (urea, ammonium phosphate, potassium chloride, potassium sulphate);
- Storage capacity in respect of bagged products: 1,500 tons in 100-pound and 50-pound bags;
- Blending and bagging capacity: 7 tons/hour.

The plant would start operating on the basis of one eight-hour shift a day (15,000 tons/year), and this would gradually be increased to two eight-hour shifts (30,000 tons/year) over a period of around 5 years.

The ideal location would be at the north of the Bay of Gonaïves (Lapierre) or near the cement mill at Fond Mombin. These two sites offer the advantages of a rocky coast, a dry climate and deep and generally quiet moorings and the proximity of the areas of intensive utilization (Artibonite Valley).

4. Budget

Estimated breakdown of capital investment

	$US
Pre-investment costs	80 000
Sites	10 000
Buildings	340 000
Machinery and equipment, including equipment for bulk unloading	350 000
Working capital	950 000
	1 730 000

The financing plan would cover:

- A share capital of $200,000 partly subscribed by the Haitian State and partly by local firms and businessmen;
- Loans from local banks;
- Loans from international financing agencies;
- Grants or supplier credits (for machinery, equipment and/or raw materials for starting up);
- A contribution by an international technical agency taking the form of technical know-how in respect of studies, processes, marketing and management.

The Haitian partner, which is a mixed-economy enterprise (public and private), is seeking co-operation and aid from an agency able to assist in the preparation and implementation of this project. Assistance in management and training of senior personnel during the first few years of operation of the plant is also requested.

Phase 1

Experts for the preparation of a feasibility study and a plan for setting up the plants	4 months	$20,000

Phase 2

Setting up of the plants; technical and financial support, including the training of local staff is requested

3.11. ESTABLISHMENT OF A PESTICIDE-FORMULATION PLANT

1. Introduction

The establishment of a pesticide-formulation plant (insecticides, fungicides, rat-killers and, in the medium term, herbicides) would meet the requirements of agriculture and public health and would bring about a considerable reduction in foreign exchange expenditures while providing the opportunity to make use of the main local resource, which is labour.

The price paid by the user of imported pesticides represents a value of 40-100 per cent added to the cost of the active ingredients. Local recovery of these added values and also the final efficiency of utilization constitute highly attractive factors in an economic development policy.

Taking the starting up of the project for a fertilizer factory (see project 3.10) together with the first stage of the pesticide-packaging project, conditions will be created for a rapid expansion of the use of the latter.

The local market at present accounts for an approximate consumption of 250 tons of a variety of pesticides in the form of liquids or wettable powders in various concentrations, i.e. an average utilization of half a pound per hectare of arable land.

2. Aim of the project

The construction and starting up of a unit for the storage and packaging of pesticides.

The enterprise would also negotiate programmes of co-operation with a view to meeting market demand with a flexible and varied supply.

3. Project activities

The plant will be established under the auspices of the same semi-public body (Haitian State and local private entrepreneur) set up to assume responsibility for the execution of the project for a fertilizer-blending plant. It will be able to operate as part of this plant and be located on the same site.

Since State agencies are the largest purchasers (IDAI, Department of Agriculture, Artibonite Valley Development Agency (ODVA), etc.), it is desirable that, on the basis of consumption forecasts, these agencies should facilitate the constitution of working capital for the plant through a system of opening of credit lines in its favour for their annual supply. It would also be desirable to provide for an introduction of policies of credit to independent farmers for the purchase of pesticides and application equipment.

Execution of the project in two stages makes it possible to structure and expand demand during the first stage and also to render the capital investment for the second stage economically justifiable.

4. Budget

Phase 1

	Number of months	$US
Expert mission to study the feasibility of the two stages of the project	3	7 500
Construction and starting up of the storage and packaging unit:		
Technical studies and specifications in respect of buildings, site development, equipment and packaging materials	2	5 000
Construction of buildings, civil engineering work and delivery of materials: 1,000 m^2 at 80 dollars/m^2		80 000
Installation of equipment		50 000
Constitution of stocks		350 000
Training of staff	6	15 000
Start-up	12	30 000

Phase 2

	$US
Implementation of this phase would take place three or four years after the first phase.	
Installation of a production plant	300 000

The assistance requested consists of the provision of expertise and equipment for the unit under favourable financing terms.

3.12. EXPLOITATION AND MARKETING OF THE BOYNES MINERAL WATERS

1. Introduction

Studies on the thermal springs in Haiti were begun in the middle of the eighteenth century by two French physicians and a chemist. The study completed in 1956 by Dr. F. Blanchard could thus be based on a series of documents prepared by his predecessors, and their experience, already significant at the time.

According to the studies and research carried out, it is above all the Boynes mineral waters that could be usefully exploited, since they were already utilized about 20 years ago for distribution in Haiti. This was stopped owing to the absence of roads and difficulties of access, but these factors are now no longer valid.

The Boynes springs are located in the Department of Artibonite, not far from Port-à-Piment, Gros Mornes and Gonaïves - in other words, easily accessible from Port-au-Prince. Their temperature ranges from 43° to 49° C.

There are four springs which are remarkably similar, with a constant total output of 100 litres/second.

The chemical composition of the water is as follows:

	Parts per million
Total dissolved solids	403
Silica (SiO_2)	35
Iron (Fe)	0.30
Calcium (Ca)	51
Magnesium (Mg)	21
Sodium and potassium (Na, K)	56
Bicarbonate radical	277
Sulphate radical (SO_4)	68
Chloride radical (Cl)	36
Nitrate radical (NO_3)	Traces
Hydrogen sulphide (H_2S)	Traces

Recognized curative properties:

- Rheumatic conditions;
- Gastro-intestinal conditions;
- Liver and bile duct conditions;
- Neurological conditions.

2. Aim of the project

The exploitation and marketing of the Boynes mineral waters in an operation affording all guarantees with regard to health, technical and commercial aspects, the whole operation being supervised by the Ministry of Public Health.

3. Project activities

The Haitian partner is seeking the collaboration of a foreign enterprise which might be interested in the operation. The data provided in the study by Dr. Blanchard should be up-dated and a study carried out on current facilities at the site and steps to be taken for resuming industrial bottling of these mineral waters and their marketing.

4. Budget

Phase 1

Experts for the preparation of a study evaluating the springs, conditions for their exploitation, bottling and marketing	4 months	$10,000
Chemical and bacteriological analysis		$ 2,000

Phase 2

Preparation of a co-operation agreement for the exploitation and marketing of the mineral waters.

The starting up of the activity described might also result in the establishment in this region of a small spa which could operate under medical supervision.

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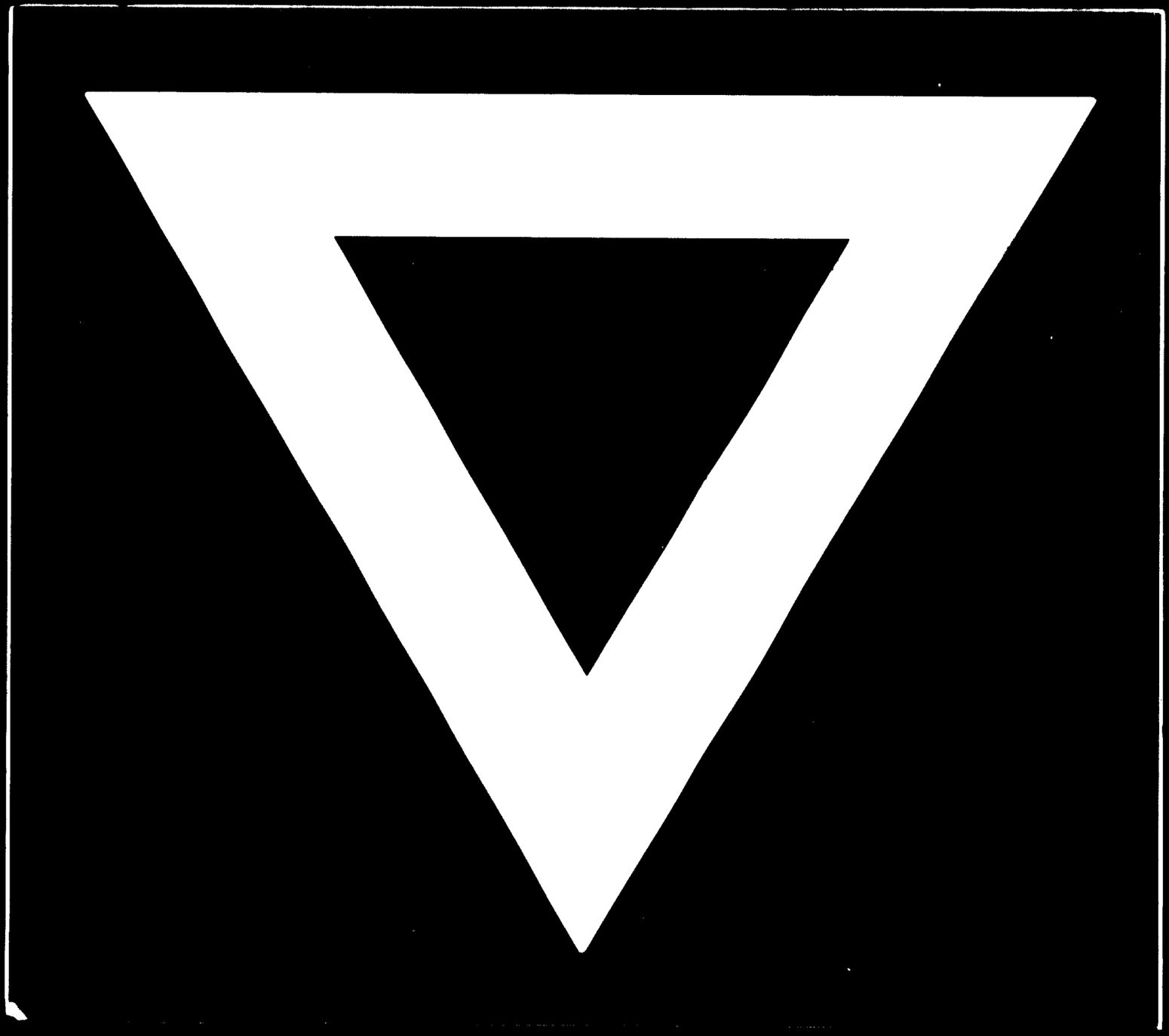

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