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FOLLOW-UP OF PRE-INVESTMENT STUDIES AND INDUSTRIAL
JOINT VENTURE PROJECTS

IN

KENYA, SWAZILAND, UNITED REPUBLIC OF TANZANIA AND ZAMBIA

(PHASE II)

Mission report*

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PREFACE

This report constitutes the follow-up to the consultant's November 1984 desk study - "Follow-up on Industrial Joint Venture Projects in Selected Developing Countries, Phase I" - regarding UNIDO pre-investment and industrial joint venture projects in Kenya, Swaziland, United Republic of Tanzania and Zambia. The November 1984 report is attached at Annex I.

The consultant visited Kenya (19 February to 5 March 1985), United Republic of Tanzania (5 to 20 March), Zambia (20 to 27 March) and Swaziland (28 March to 9 April) in order to:

- (1) Investigate on-the-spot whether the respective governments, development institutions or other project promoters had made use of UNIDO's pre-investment studies and, if they had not, why these studies had not been followed up.
- (2) Look into the industrial joint venture projects either reported as having been concluded by the Investment Promotion Services or promoted at Investment Promotion Meetings or Seminars held by the Investment Co-operative Programme or its Investment Promotion Services, and report on how these projects had materialized, the extent to which they received government support and the degree to which the respective countries benefited from them.
- (3) Analyse operational joint ventures that had been studied by UNIDO or other sources and report on how they had been set up and with what results.
- (4) Reach conclusions as to the lessons that can be learned from these projects regarding investment policy and recommend the most appropriate methods of preparing, promoting and developing industrial investment projects.

Following the consultant's Terms of Reference (attached at Annex II), each of the four countries visited is dealt with as follows:

- I. Background on investment policy
- II. Pre-feasibility or other pre-investment studied executed by UNIDO
- III.
 - A. Industrial investment projects reported concluded by Investment Promotion Services
 - B. Results of Investment Promotion Meetings or Seminars
- IV. Selected industrial joint ventures already operational in each country and representative of the country's industrial structure

SUMMARY

The following may be summarized from the report:

Kenya

- I. Pre-feasibility or other pre-investment studies executed by UNIDO
 - (a) Conducted 17
 - (b) Implemented 11
 - (c) Still under active consideration 4
 - (d) Not implemented 2

- II. Industrial investment projects reported concluded by Investment Promotion Services
 - (a) Reported concluded 10
 - (b) Implemented 4
 - (c) Implementation still active 1
 - (d) Not implemented 2
 - (e) Not visited 3

- III. Industrial Investment Seminar, Tokyo, 1983
 - (a) Projects presented for promotion 30
 - (b) Implementation being discussed 10
 - (c) Projects being studied by Japanese consulting firms 7

- IV. Selected industrial joint venture projects
 - Factories visited and studied 9

Swaziland

- I. Pre-feasibility or other pre-investment studies executed by UNIDO
 - (a) Conducted 7
 - (b) Implemented 1
 - (c) Still under active consideration 5
 - (d) Not implemented 1

- II. Industrial investment projects reported concluded by Investment Promotion Services
 - (a) Reported concluded 2
 - (b) Implemented 2

- III. Regional Investment Promotion Meeting, Lusaka, 1983
 - (a) Projects presented for promotion 4
 - (b) Projects being implemented 1
 - (c) Projects being studied 2
 - (d) Projects still under consideration 1

- IV. Selected industrial joint venture projects
 - Factories visited and studied 4

United Republic of Tanzania

I.	Pre-feasibility or other pre-investment studies executed by UNIDO	
	(a) Conducted	33
	(b) Implemented	32
	(c) Not implemented	1
II.	Industrial investment projects reported concluded by Investment Promotion Services	
	(a) Reported concluded	6
	(b) Implemented	1
	(c) Under implementation	1
	(d) Not implemented	1
	(e) Not visited	3
III.	Regional Investment Promotion Meeting, Lusaka, 1983	
	(a) Projects presented for promotion	15
	(b) Implementation under consideration	5
IV.	Selected industrial joint venture projects	
	Factories visited and studied	3

Zambia

I.	Pre-feasibility or other pre-investment studies executed by UNIDO	
	(a) Conducted	12
	(b) Implemented	10
	(c) Under implementation	2
II.	Industrial investment projects reported concluded by Investment Promotion Services	
	(a) Reported concluded	3
	(b) Implemented	2
	(c) Being implemented	1
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CONCLUSIONS AND RECOMMENDATIONS

A. General

Although Kenya, Swaziland, Tanzania and Zambia have different socio-economic systems, as far as industry is concerned differences in the promotion and operation of manufacturing units are less visible. In each of the four countries, more or less equal treatment is given to public and private sector industries. Industries with foreign participation are welcome and operational in all of the four countries and receive government support as parastatal operations. In Tanzania, the Government has launched a programme to "commercialize" public sector industries in cases where better results may be expected through private operation.

Local private entrepreneurs usually emanate from the four following sources:

1. Craftsmen who seek to expand to an industrial scale. In practical terms, these are normally the most successful.
2. Importers who decide to engage in the local production of the goods they import, either from locally available raw materials or from raw materials imported in bulk. This group is also usually successful, although lack of management experience may constitute an impediment.
3. Middle management of existing industries who decide to establish their own industries. Access to the necessary investment finance is a prerequisite to the success of this group of entrepreneurs.
4. Former high-level civil servants from Ministries of Industry, Trade or Mining who decide to set up their own industrial operations. In general, this group is not quite so successful, because quite often the entrepreneur will base his investment decision on the pre-investment study carried out by the equipment supplier, which is obviously not an independent, unbiased source.

UNIDO's technical assistance programmes have had a palpable impact on the development of the four countries; only Swaziland did not benefit as much as the other countries. Nevertheless, assistance could be further improved in the following areas:

1. Similar to the practice of the former INDCENTRE in Tanzania, pre-investment studies would be more realistic if the potential partner for project implementation were found before the request for UNIDO assistance is issued. The potential partner's comments should be elicited regarding the draft terms of reference to ensure that the study includes aspects that will be of importance to the person who will ultimately be responsible for operating the plant, irrespective of whether the local promoter is a private source or a parastatal. It is frequently the case that, when asked why certain feasibility studies had not been followed up, governments replied that these had merely been based on an idea of a former civil servant who had no experience of the practical aspects of industry.

2. The pre-investment study should always be preceded by a less costly market and/or raw material study, so as to avoid unnecessary major expenditures for the feasibility study should market or raw material conditions prove to be inadequate.
3. The pre-investment study should deal to some extent with the later operation of the industrial establishment. Normally, only larger industrial projects are followed up by a full-fledged feasibility study prior to implementation. It was evident that in Kenya, Tanzania and Zambia the continuous operation of many industries is hampered by the lack of imported raw materials and spare parts due to shortages of foreign exchange.

With this in mind, the feasibility study should also consider supporting measures to make available the necessary raw material supplies, spare parts and expatriate management expertise.

4. UNIDO's Investment Co-operative Programme should consider extending its services to assist operational industries in developing countries in locating:
 - (a) new technical partners if original partners pull out of a project;
 - (b) financial partners where these are necessary for an industry's survival; and
 - (c) sources of spare parts and intermediate products supply.
5. Many industries in developing countries have had to close down or are working to a minimum of their planned capacity. These industries could be rehabilitated by supporting measures from donor countries or international funds, and a UNIDO "SOS Programme" may be useful in this respect. The World Bank and other organizations have such a programme.
6. The Investment Co-operative Programme could assist governments, development institutions and individual industrial enterprises in identifying new export markets and/or in informing on conditions and opportunities for exports to European Economic Community countries or to other common markets. The Investment Promotion Services could play an important role in this regard.
7. Industrial enterprises in developing countries would welcome being informed of suitable contacts with major importers in industrialized countries (such as department stores, wholesalers, etc.) who could serve as outlets for their products. The Netherlands and the United Kingdom provide such a service, and the Cologne Investment Promotion Service has in the past provided such information .

B. What are the lessons to be learned regarding investment policy?

After they attained independence, all four countries adopted open-door policies with regard to foreign investment. However, in practice there was no active investment promotion, with investments stemming from the individual initiatives of investors whose main interest was usually the exploitation of natural resources, local markets and low labour costs. For their part, governments concentrated mainly on import substitution. To some extent, their efforts in this area did indeed succeed.

To achieve this success, however, the countries had to pay a substantial price: Firstly, foreign investors had strong bargaining power, which could not be matched by fledgling local negotiators, and they succeeded in extracting unduly large concessions from governments, for example exclusivity of production, excessive quota and tariff protection, customs duty exemption on imported plant, reduced customs duties on imported intermediate goods, free industrial sites and free connection to municipal services, etc. Secondly, their policy gave rise to the establishment of de facto monopolies, operating inefficiently and/or engaging in profiteering, so that the price structure of good produced locally had little bearing to the international price structure, in spite of economical labour and raw material costs. This has become one of the major problems now facing the strategy to shift from import substitution to exports. Thirdly, transnational corporations engaged in such malpractices as transfer pricing, little or no transfer of technology, unfair competition with local smaller companies, lack of forward and backward linkages, and considerable remittances abroad by way of royalties, licence and management fees, high payments to expatriates, etc.

On the other hand, the contribution of foreign investors to the economies of the four countries has in most cases been positive. Foreign investment gave the countries a wide industrial base, an established modern market economy, substantial employment in industry, well-distributed physical infrastructure services, and an efficient commercial, financial and institutional infrastructure, contributing to their becoming more advanced than other African countries south of the Sahara, with the exception of South Africa.

The following can be learned from the investment policies of the four countries:

1. The need for good industrial planning and identification of suitable projects.
2. The need for the active promotion of identified priority projects, rather than waiting for investors to come forward of their own initiative, motivated by purely profit-oriented aims as opposed to economic and social benefits to the host country.
3. The need for good project appraisal and negotiation to ensure that projects are implemented as originally agreed with promoters, as well as project monitoring to ensure compliance with agreements.

4. The need for effective regulation and control of foreign investment through legislation (if necessary) and administrative measures in order to eliminate malpractices by foreign investors.
5. Protection should only be given to infant industries, as over-protection fosters monopolies, inefficiency, high price structures, etc. Protection measures should allow competition on local and export markets.
6. Emphasis should be given to the import or development of technologies so as to strengthen the country's self-reliance. Manpower resource development schemes should be linked to technology development.

In summary, foreign investment is indeed necessary and desirable in Kenya, Swaziland, Tanzania and Zambia. However, it must not be allowed to operate under laissez-faire policies, but rather should be regulated and controlled so that, while it is allowed to make adequate profits, it should also contribute to the countries' social and economic aspirations and relate to their overall national plans to achieve self-reliance.

C. What is the most appropriate method of preparing investment projects?

1. Medium- to large-scale projects utilizing natural resources

(a) Project identification

Area and sectoral studies should be made to identify projects that would have an economic comparative advantage. In the early stages of industrial development, some projects that do not have an initial comparative advantage may have to be set up to initiate development; however, the overall investment portfolio must have an economic comparative advantage to enable industries to survive, meet local competition and compete on export markets.

(b) Selection of technology

Once a project has been identified, the most suitable available technology should be selected. Assistance may be obtained through international and bilateral agencies to obtain a number of proposals for consideration. The country should develop sufficient technological resources, so as to at least have the capacity to differentiate between technologies that will be beneficial and those of less interest. If this capacity does not exist, independent consultants can be used. UNIDO could play a significant role in this area.

(c) Raw materials

Adequate research should be made regarding the source, volume, quality and price of raw materials. Many projects have failed or have permanent problems because research was not adequate and insufficient quantities of raw material were available.

(d) Market research

Realistic market research should be made to establish the size of the market, the share of the market the project is seeking to acquire, the strength of competitors, selling prices and market growth rates. Many projects have failed because of inappropriate market research, which established too high a market growth rate or too high a level of market penetration, resulting in huge idle capacities due to lack of demand. Regional markets, economic alliances, etc. should be taken into account when market research is carried out.

(e) Pre-feasibility study

Once the two primary questions have been established (raw material sources/costs and size of market growth/penetration), a pre-feasibility study should be made by neutral experts. Caution should be exercised in defining the production outputs of machinery and the efficiency of the operation. Many projects have not been successful because outputs and efficiency were worked out by engineers basing themselves on optimum plant capacities and labour factors, or because teething troubles, initial low efficiency rates, plant or utilities breakdowns, unavailability of spares, etc. were not taken into account.

(f) Sources of finance

If the pre-feasibility study is positive, investigations should be made into possible sources of finance in accordance with the debt:equity ratios permitted by the country. Sources for financing fixed capital include equity holders, development finance banks (equity and/or long-term loans), suppliers' credits and, for larger projects, international and bilateral agencies. Working capital is usually obtained through the commercial banks. Provision of collateral should not be overlooked.

(g) Identification of investors

There are several possibilities for identifying potential project partners:

- The pre-investment study may be presented at UNIDO Investment Promotion Meetings or industrial investment-related seminars, workshops or fora;
- International or bilateral institutions may act as mediators in identifying suitable foreign partners;
- "Pinpoint" project promotion may be undertaken;
- The Investment Co-operative Programme's Investment Promotion Information System (INPRIS) may be of assistance.

(h) Project negotiation

Once a partner has been identified, negotiations should be held to define equity holding, the responsibilities of each partner, capital structure, changes in the study, conditions under which the project will be approved, etc. UNIDO assists in project negotiation activities through its Joint Venture Handbook, proposed checklist, etc.

(i) Feasibility study

At this stage, a detailed feasibility study should be prepared which takes into account the changes that have taken place since the time the pre-feasibility study was made as well as of any new input data provided by the partner.

The preparation of good financial projections and analyses cannot be over-emphasized. A project that is not financially and commercially viable is rarely good from an economic analysis point of view. Financial projections should include discounted cash flows and a sensitivity analysis.

(j) Project appraisal

By definition, an appraisal is always done by an (investment) bank (such as IFC, DEG, etc.). The bank appraises all existing information, including the studies, and then decides whether or not to finance and/or participate in the project.

There should be proper project appraisal, also involving the government organizations concerned with the final approval of the project, with independent checking of all data inputs in the feasibility study. More often than not, developing countries have the attitude that "the foreign investor knows more than we do" and accept feasibility studies at face value, without considering that there may be genuine mistakes or that the investor may have the wrong motives.

Economic appraisal should include such factors as value-added, foreign exchange flows and a cost-benefit analysis.

(k) Implementation

The main bottlenecks in project implementation are delays in project approval and in granting the necessary licences and permits, difficulties in acquiring land and utilities, and problems in securing financing. The need for institutions to service industrial development is recognized by the four countries, which have well-managed industrial estates and other forms of industrial settlements available for local and foreign investors.

2. Small- to medium-scale projects utilizing imported inputs

Although project preparation for small- to medium-scale projects is basically the same as for medium- to large-scale projects, project preparation and appraisal may be less rigorous if they are based on the use of imported inputs for re-export. In such cases, foreign investors or partners may be identified through investment promotion activities

Project preparation starts with the identification of an investor wishing to set up an industrial enterprise in a developing country and who is willing and able to provide the input data for the feasibility study. Special attention should be paid to:

- The promoter's business history, experience, capabilities (management) and creditworthiness, which should be checked through such institutes as chambers of commerce, commercial attachés, banks, etc.;
- Availability of technological and production capability;
- Availability of market outlets.

KENYA

KEN. I. Background

Since independence in 1963, the Government placed emphasis on industrial development - along with the development of agriculture - as the main vehicle for long-term socio-economic growth. In the 1970s, the decade of the country's greatest expansion since independence, the average level of production growth in the manufacturing sector reached 9.5 per cent, dropping to about 2.5 per cent during the first four years of the 1980s. According to official statistics, in 1981 there were 14,000 manufacturing units, of which 465 were large-scale, 60 per cent of which were owned by the Government or were operating as parastatals. Total employment in industry was roughly 194,000, of which 140,000 were employed in public sector industries, mainly in agro-based plants. Some operations have since ceased production, due to raw material supply or market problems or lack of capital, while at the same time new factories have started up. In 1983, the manufacturing export sector earned KL 630 million^{1/} of which 53 per cent was spent on oil imports and 25 per cent on international debt servicing. Imports for the same period amounted to KL 920 million. The country therefore has serious foreign currency problems.

In the current Five Year Development Plan (1984 - 1988), industrial development is governed by Chapter IV, which aims at: diversifying the national economy; attaining a rapid rate of economic growth; improving export performance; producing the inputs required to support development in the primary sectors of the economy; employment generation; producing goods and services to meet basic human needs; developing a diversified technological base; dispersion of industry; and equitable distribution of the benefits of industrialization.

The Plan's main thrust is directed towards the consolidation of existing industries, mobilization of domestic investment resources, establishment of measures to win the continued confidence of foreign investors in the national economy, expansion of indigenous entrepreneurship, and improvement of industrial management. The investment of public funds in equity will be restricted to new industrial projects of national significance. The Government wishes to continue to foster a mixed economy in which the private and the public sectors play complementary roles in development. In line with this policy, the Government encourages foreign investors in areas where the private sector has a crucial role in the establishment of productive activities. Indeed, the Government actively helps in promoting foreign private investment by providing financial incentives through the various parastatal development financing institutions, which may grant medium- and long-term loans under advantageous conditions and which may also, if desired, take up equity participation.

The foreign investor can benefit from a number of Government incentives that are embodied in taxation laws, exchange control regulations and legislation on foreign investment. These rules and regulations refer, among others, to investment allowances of up to 20 per cent of fixed capital investment, capital allowances over and above normal depreciation allowances for industrial buildings, plant and machinery, etc., training of local personnel, repatriation of profits, protection against dumping, custom duty remission or refund

^{1/} KL 1 = KSh 20

on materials used for the production of export goods, and avoidance of double taxation on the basis of agreements with foreign governments.

Government participation in the manufacturing sector is restricted to a small sector where a national interest prevails. Section 75 of the Constitution established that no property shall be compulsorily acquired by the Government except in accordance with the provisions contained therein. In the event of acquisition in the public interest, the Government will make prompt payment of full compensation. The major instrument for the protection of the foreign investor is the Foreign Investment Protection Act, Chapter 518 of the Laws of Kenya.

The most important sources of information for foreign investors are the Ministry of Commerce and Industry (Industrial Promotion Division) and the recently established Advisory and Promotion Centre.

KEN.II. Pre-Feasibility Studies or Other Pre-Investment Studies Executed by UNIDO

1. Charcoal Industry

- (a) Based on the recommendations of the pre-feasibility studies of 1973 by UNIDO experts Messrs. Collins and Faust, the Kenya Planters and Co-operative Union (KPCU) operates one major charcoal plant in Nairobi and some smaller units in rural areas. The Nairobi plant serves the local market and exports charcoal to the United Kingdom (see KEN.IV.3.).
- (b) Mr. Faust had also recommended the manufacture of mobile kilns to be used by local farmers in their coffee fields. His prototype kiln has been lost in the meantime, as have been the drawings for it. His report is still with the Ministry of Industry. The Government now wishes to follow up the recommendations and has requested UNIDO to send a copy of the expert's drawings for the kiln, which should be in the project file in UNIDO's archives.

2. Nitrogenous Fertilizer

- (a) The project was studied by an Italian team under UNIDO's auspices in 1974. The project is still unimplemented, due to lack of funds and a technical partner. This industry has high Government priority in the current Development Plan. A UNIDO expert, Mr. Pillai, recently studied the project again for National Agricultural and Fertilizers Ltd., Nairobi.
- (b) According to the Ministry of Industry, the following equipment for fertilizer plants is being stored at Mombasa harbour:

- Ammonia plant	- 172 tons/day capacity
- Nitric acid plant	- 227 tons/day capacity
- DAP plant	- 390 tons/day capacity
- CAN plant	- 300 tons/day capacity
- NPK plant	- unspecified capacity

The Government would welcome UNIDO's assistance in the design and erection of the above plants and in the identification of suitable technical partners.

3. Bicycle Assembly Plant

- (a) The recommendations of the study of UNIDO expert Mr. Lanzler were followed by the setting up of a bicycle assembly operation from Indian parts on the Nakuru industrial estate, about 140 km north of Nairobi. Last year, the plant was moved to Mombasa. The factory is owned by Glad Home Bicycle Co., a private company.
- (b) 10,000 bicycles are assembled annually, in line with the size of the Kenyan market. Mr. Lanzler had recommended the assembly of 30,000 bicycles per year, which would only have been realistic if exports had been envisaged. Presently, the factory faces problems arising from foreign currency shortages and bottlenecks in spare parts imports from India.

4. Production of Bandsaws and Pangas^{1/}

- (a) The recommendations of Mr. Lanzler were followed only as regards the production of pangas, which are being manufactured by Kenya Engineering Ltd. at Nairobi.
- (b) The production of bandsaws cannot be justified in view of Kenya's small market for the product and lack of export potential.

5. Cassava Chipping and Bagging

The pre-feasibility study for cassava chipping and bagging was not followed up because of insufficient raw material supplies. The Government had planned to set up a farmers' settlement scheme in western Kenya, near Lake Victoria, to grow the raw material, but for various reasons - presumably shortage of funds - no steps were taken to implement the scheme.

6. Ethyl Alcohol from Molasses

- (a) Based on the recommendations in the study by UNIDO expert Mr. C. Grane, Muhoroni Ltd. erected a plant to produce ethyl alcohol from molasses at Kisumu, near Lake Victoria, where the sugar estates are located. The alcohol is used in Nairobi as automobile fuel by mixing 60 per cent gasoline with 25 per cent premium gasoline and 15 per cent alcohol, marketed under the name "Gasohol".
- (b) No problems were reported.

7. Caustic Soda

The Government attaches high priority to the local production of caustic soda. However, in the absence of funds and a technical partner, production has not yet started. The Government would welcome UNIDO's assistance in locating a foreign partner.

8. Asbestos Cement

Of the other recommendations made by Mr. Grane, the Government has followed up the asbestos cement plant, details of which are given under KEN.III.A.1.

^{1/} Pangas are bush knives.

9. Production of Edible Oil

- (a) The recommendations of the study by UNIDO expert Mr. Garzon-Trula were followed up by the establishment of a vegetable oil mill by East African Industries Ltd. (a daughter company of Unilever). The factory processes sunflowers.
- (b) No problems were reported.

10. Of the industrial projects recommended by the Industrial Survey Team in 1975 - for which no studies were carried out - the Government attaches priority to the following:

- Simple water turbines and other electricity generating machines
- Light tractors
- Machine tools (UNIDO assistance is welcomed for the establishment of a tool room)
- Spare parts for the textile industry
- Food processing machines
- Air conditioner and refrigerator assembly
- Pumps (e.g. for irrigation)
- Spraying equipment
- Electric appliances and insulators

In the absence of up-to-date pre-feasibility studies, the Government would welcome UNIDO's assistance.

11. Plywood Production

- (a) As a follow-up to the study and recommendations by the Survey and Promotion Centre, a plywood mill was established by Rai Plywood Ltd. at Eldoret.
- (b) The project is a joint venture and has not encountered any problems.

12. Fruit and Vegetable Processing

- (a) The feasibility study for the processing of local fruit and vegetables did not take sufficient account of the local market: abundant quantities of fresh fruits and vegetables of excellent quality are available in Kenya the whole year round, and there would therefore be no demand for canned products, except for exports.
- (b) The Government would, however, favour an up-dating of the study to analyze export possibilities, especially of canned mangoes, pineapple, citrus fruit, papayas, etc.

13. Tannery and Leather Processing

- (a) The study and recommendations of the Industry Survey Team for new tanneries and leather processing units were followed up by the establishment of a leather project at Thika, Leather Industries of Kenya Ltd., a joint venture with Union des Tanneries de Malmedy (Belgium) as technical partner. Financial partners were the International Finance Corporation, the German Development Company (Federal Republic of Germany), IPS (Aga Khan Group) and others.

The factory employs some 378 people. It has the capacity to process 800,000 hides and the export of 750 m² of finished leather was envisaged. Total investment amounted to US\$ 9.8 million, of which US\$ 4.7 million was in local currency.

- (b) The factory has serious raw material supply problems and is not working to capacity. No more than 250,000 m² of finished leather has ever been produced, due to a lack of raw hides. The feasibility study, in which UNIDO was involved at an early stage, had indeed provided correct estimates. In view of supply contracts that are still valid, Kenya must export large quantities of raw hides to the Far East.

14. Mini-Steel Mill

- (a) The plant is still far from being realized. A further detailed study by Austroplan (Austria) again revealed serious market problems, apart from the continuing impediments such as unavailability of iron ore, coke and fuel and lack of financing. In view of the resumption of East African co-operation, the Government hopes to enter the regional market.
- (b) The recommendation of an expert to use charcoal for ore processing is not realistic in the absence of major forest resources (250,000 ha of forests would have to be planted). Tanzanian gas, which was discovered recently, could eventually be used for direct reduction.

15. Wooden Bridges

The low-cost modular pre-fabricated wooden bridge project was operational for a time, but neither the Ministry of Commerce and Industry, the Ministry of Forestry nor the Ministry of Transport had any information available on the existence of these manufacturing units. The Ministry of Environment and Natural Resources (Forestry) informed that the wooden bridges had been attacked by termites.

16. Solar Salt

- (a) The study led to the creation, in 1979, of Salt Manufactures Ltd., also known as Kensalt, in Mombasa.
- (b) The factory is operational and supplies the local market.

17. Wool Processing

- (a) The Schmidli study on wool processing was implemented as an annex to the large textile mill at Eldoret. The company, Raymond Woolen Mill Ltd., spins and weaves mainly cotton and artificial fibres.
- (b) The factory faces local raw material and market problems.

18. Nanyuki Textile Mill

The expert Mr. de Voest assisted the Government in concluding the investment agreement with the German Development Company (Federal Republic of Germany) and other foreign partners, to the satisfaction of all parties. Mr. de Voest was not involved in the study, which was not apparent from UNIDO's records when the desk study (Phase I) was carried out.

19. Fibreboard, Particle Board, Veneer and Plywood

- (a) In line with the recommendations of UNIDO expert Mr. Putna, fibreboard, particle board, plywood and veneer are now being produced in several manufacturing units in the country, according to information from the Chief of the Agro-Industries Section of the Ministry of Commerce and Industry. The factories could not be visited by the consultant, because they are located in small towns spread over the country. One of the factories is Sokoro Fibreboard Ltd. (Japan) at Elbourgon.
- (b) No problems were reported.

KEN. III.A. Industrial Investment Projects Reported Concluded by Investment Promotion Services

Brussels

1. Asbestos Cement Pipes and Roofing Sheets

- (a) The plant is a private enterprise, operating under the name Simbarite Ltd. at Nairobi's industrial area. It is a joint venture with Belgian participation, producing all types of asbestos cement pipes, roofing sheets and plates for the construction industry.
- (b) The project was studied by the foreign partner, financed from his own funds. The project was financed from private sources.

2. Fertilizer Formulation and Mixing

- (a) The Ministry of Industry confirmed that the factory to mix and bag fertilizers for farmers has been set up. Total investment amounted to US\$ 2.8 million. The plant has a Belgian partner.
- (b) The project was studied by the foreign partner, financed from his own funds. No specific Government support was required.

3. Tyre Retreading

Firestone operates a tyre plant at Nairobi's industrial area. In line with the Government's wish to foster competition and diversify production, efforts were made to attract foreign investors to participate in a tyre production operation. The Brussels Investment Promotion Service had originally interested a Belgian partner in a tyre retreading operation; however, Dunlop (United Kingdom) was subsequently recommended for tyre production, in line with the wish of the Government. Dunlop was awarded a licence to establish a plant together with a parastatal operation, but it stipulated conditions that were unacceptable to the Government. A foreign investor is still being sought.

4. Leather Industry

Leather Industries of Kenya Ltd. was established at Thika in co-operation with Union des Tanneries de Malmedy (Belgium). (See KEN.II.13. for further details).

Cologne

5. Glass Manufacture

- (a) A preliminary agreement for the establishment of a hollow glass factory was reached between Kenya Glass Industries Ltd. and Heye/Winkler Glastechnik, Hamburg/Hannover (Federal Republic of Germany), with the German Development Company as financial partner. Subsequently, Kenya Breweries Ltd. made known its interest in setting up its own factory to produce beer bottles to its specifications. Since, in financial terms, the brewery was the stronger partner and because it offered a better pricing policy for its own bottle manufacture, the Government shifted its support to Kenya Breweries. However, Heye found the negotiations were too time-consuming and resumed negotiations with the original partner, causing Kenya Breweries to break off its negotiations with the German company. Kenya Breweries decided to establish its glass factory without a financial partner and concluded a contract with Coutinho-Caro, Hamburg (Federal Republic of Germany) for the transfer of technology and equipment supply. The factory is being set up at Nairobi's industrial area. KfW (Federal Republic of Germany) contributed a loan of DM 27 million.

- (b) The project was studied by Kenya Breweries Ltd.

New York

6. Mosquito Coils

- (a) A private sponsor has operated a small factory producing mosquito coils since 1979 at the industrial estate at Nakuru, the major pyrethrum cultivation area. However, this project is not the same as the one reported as having been concluded by the New York Service for North America. The latter estimated a yearly production of 800 tons, while a market survey conducted in April/May 1983 made it evident that only a fraction of the estimated production had a chance of being sold in the country. As a result, the interested foreign partner - Ladha International, Atlanta (United States of America) - withdrew its offer.

- (b) The project was studied by Kenya Industrial Estates.

Zurich

7. Cassava Chips and Pellets

The investment agreement was not implemented. The project had been studied by UNIDO. In the absence of sufficient quantities of raw material (Kenya has no major cultivation of cassava), the Government did not approve the project, deciding that the cassava supplies should be reserved for human consumption (see KEN.II.5.).

In view of time constraints, the consultant was not able to follow-up the following projects, which had also been reported as having been completed:

- Flower Seed Plantation (New York Service)
- Sunflower Hybrid Seed Plantation (New York Service)
- Charcoal Production, Oil Pyrolysis and Latex Refining (Zurich Service)

KEN. III. B. Industrial Investment Seminar Sponsored by the Tokyo Investment Promotion Service, Tokyo, 1983

The following projects were promoted at the Tokyo Seminar and are under discussion with potential Japanese partners:

- Castor oil (private sponsor)
- Integrated iron and steel mill (Kawasho Ltd. and Kobe Steel Ltd.)
- Forge shop (Kawasho Ltd. and Kobe Steel Ltd.)
- Mathematical instruments (private sponsor)
- Dry cell batteries (Iwabani Corporation Ltd.)
- Brick and tile manufacture (private sponsor)
- Paper production (private sponsor)
- Silver recovery from photographic X-ray waste (private sponsor)
- Diatomite processing (private sponsor)

The following projects were submitted by the Government of Kenya after the close of the seminar, and are also being discussed with potential Japanese partners:

- Peanut oil and flour (Japan Protein Ltd.)
- Floor mats from papyrus for the Japanese market (private sponsor)
- Avocado oil extraction (private sponsor)
- Fish meal production (private sponsor)

The following projects are being studied by Japan Consulting Ltd.:

- Integrated iron and steel mill
- Forge shop
- Brick and tile manufacture
- Peanut oil and flour
- Diatomite processing
- Avocado oil extraction
- Fishmeal production

The Government of Kenya has been notified that studies have been completed, but it is still awaiting receipt of the reports.

KEN. IV. Selected Industrial Joint Ventures already Operational in Kenya and Representative of the Country's Industrial Structure

1. Kenya Engineering Ltd., Nairobi Industrial Estate

- (a) The project was based on the 1969 UNIDO study by Mr. Lanzler (see KEN.II.4.). The original Swedish partner withdrew from the project when it became evident that the factory would only produce pangas and not bandsaws too, as had originally been recommended.

The factory was started without a foreign partner. It became a success and now produces a variety of metal products. Thus, while the study provided the initial impetus for the establishment of the factory, it played only a minor role in its operation.

- (b) The major shortcoming of the study was its insufficient analysis of the local market and export opportunities for bandsaws.

2. Firestone East Africa Ltd., Nairobi Industrial Estate

- (a) The project is a joint venture, 80 per cent Firestone (United States of America) and 20 per cent Industrial and Commercial Development Corporation of Kenya, a parastatal company. A feasibility study was conducted by Firestone in 1968. The factory produces 47 different types of automobile tyres for the local market.

- (b) The project is a success and has a monopoly of the Kenyan market.

3. Charcoal Production, Kenya Planters' Co-operative Union, Nairobi

- (a) The project was originally planned as a joint venture with a United Kingdom importer of charcoal, who later withdrew from the project but who still imports from the plant. It was based on studies by Mr. Collins (economic aspects) and Mr. Faust (technical aspects), UNIDO experts assigned to the project in 1972 (see KEN.II.1.).

The raw material is coffee waste from the plant belonging to Kenya Planters' Co-operative Union. The project produces 7 tons of briquetted charcoal daily for the local market, but mainly for export to the United Kingdom as barbeque charcoal in nicely printed paper bags. The factory may be expanded shortly.

- (b) The project is considered a success. The study solved the problem of producing briquettes by recommending adding 3 per cent maize flour to the ground charcoal.

4. Aluminium Works Ltd., Nakuru

- (a) The project was originally planned as a joint venture with a Swiss partner contributing equipment and raw material inputs; however, the Swiss company did not join the project as financial partner, but still supplies it with raw material.

The plant is privately owned, located on the Nakuru industrial estate. The project was studied in 1979 by KIT, Nairobi; the author of the study was Mr. M. Burisch, an expert from GTZ (Federal Republic of Germany).

- (b) The project is a success and has no local competition. It mainly produces milk cans and aluminium buckets for the local market as well as for export to neighbouring countries. Other products are being studied at present.

5. Nakuru Shoes Ltd., Nakuru Industrial Estate

- (a) The project was originally planned as a joint venture with Bata (Canada); however, the Kenyan partner withdrew in view of conditions stipulated by Bata which he found to be unacceptable.

The factory, which is privately owned, was built based on a feasibility study conducted by Mr. Burisch of GTZ. It has to compete with Bata and other manufacturers, but it will nevertheless no doubt be a success, in view of its well-managed production methods and well-balanced production programme.

- (b) The owner began an ancillary production of handbags, but he stopped this activity in time, before major losses were experienced because of poor leather quality and quickly changing styles.

6. Agricultural Machinery Ltd., Nakuru Industrial Estate

- (a) The factory is a joint venture among three Kenyan partners, each with 30 per cent, and a partner from the Federal Republic of Germany, Mr. Trimbom. The project was studied in depth by Mr. Burisch (GTZ), who recommended the maintenance and repair of heavy diesel engines and, at a later stage, the manufacture of certain heavy agricultural equipment.

- (b) The factory has only been operational since mid-1984, but it is already considered to be successful, due in part to the foreign partner's long experience in the repair of diesel engines.

7. Crescent Investments Ltd., Nairobi Industrial Estate

- (a) The project is owned by 20 local sponsors and a foreign partner from Sweden holding 10 per cent. The plant produces carbon paper and ribbons for typewriters. The project was studied by Mr. Burisch (GTZ).

- (b) The plant operates continuously, makes good profits and shows no shortcomings. Its success is due mainly to the study's well-balanced recommendations.

8. Continental Industries Ltd., Nairobi Industrial Estate

- (a) The enterprise is a joint venture between a local partner and Mr. V. Pratt (Liberia). The project was studied by Mr. Burisch (GTZ).

The factory fills and packs cosmetic products imported in bulk from Revlon (United Kingdom) and Proline (United States of America) and also distributes these under their trademarks in Kenya.

- (b) The project has had only limited success because of difficulties in obtaining import licences for its products from the United Kingdom and the United States of America. The shortcomings in the plant's operations cannot be attributed to the study, since at the time of the study's being conducted such import licencing problems could not be foreseen. The company is investigating the production of cosmetics from locally available raw materials.

9. Prime Industries Ltd., Nairobi Industrial Estate

- (a) The factory is a joint venture between two local partners, with 40 per cent and 35 per cent respectively, and an Italian firm - Italplanning - with 25 per cent. It assembles all types of spark plugs in use in Kenya. The parts are imported from Spica, Livorno (Italy). The project was studied by Italplanning.

- (b) The project has only had a limited success, since it faces the same problems as those encountered by Continental Industries (8. above), and is not in operation for about half a year each year. As in the case of Continental Industries, its problems could not have been foreseen at the time the study was prepared.

It was not possible to identify projects that had been established without a study having been made, since any industry in Kenya which requires financing from banks or other finance sources must at least present a pre-feasibility study. The same applies if a sponsor wishes to make use of Government incentives, the facilities of the Industrial and Commercial Development Corporation or the Kenya Industrial Estates scheme. In view of the shortage of private funds and the scarcity of industrial land, most sponsors must make use of Kenya's official sources for industrial development when setting up industries.

KEN.V. Persons Met

Ministry of Commerce and Industry

Mr. J.M. Hungo, Director, Department of Industry
Mrs. S. Alambo, Head, Industrial Promotion Division
Mr. M. Owaga, Deputy Head, Industrial Promotion Division
Mr. F.K. Kiiru, Chief, Metal and Engineering Industries
Ms. E. Kariithi

Industrial and Commercial Development Corporation

Mr. P.M. Waweru, Executive Director

Industrial Development Bank

Mr. K.S. Kumata, Director

Kenya Industrial Estates

Mr. O.S. Mbindyo, Managing Director
Mr. A.M. Shikhule, Operations Manager
Mr. J.W. Ichangi, Administrator
Mr. M. Burisch, Adviser (GTZ, Federal Republic of Germany)

United Nations Development Programme

Mr. G.-L. Pennacchio, Resident Representative
Ms. Wilkens, Deputy Resident Representative
Mr. K.H. Niessen, Senior Industrial Promotion Advisor (DEG,
Federal Republic of Germany)

Owners and managers of various industries at Nairobi,
Thika and Nakuru.

SWAZILAND

SWA.I. Background

The Kingdom of Swaziland was a British protectorate until it attained independence in 1968. It covers an area of about 20,000 km² and has a population of approximately 550,000. The country is a partner in a currency and customs union with the Republic of South Africa and therefore does not have foreign currency problems, although it does suffer from the shortages of investment finance affecting other African countries.

Agriculture and forestry industries dominate the manufacturing sector in the current Development Plan, as has been the case in the past. According to an industrial census carried out in 1980, agro-industries accounted for 74 per cent of total manufacturing value-added and 69 per cent of manufacturing employment. The major industries are the country's three sugar mills (with a total annual capacity of 400,000 tons), a pulp mill, three sawmills and the Libby's fruit canning factory. These few factories alone provided 68 per cent of sectoral value-added and 45 per cent of sectoral employment.

In 1980, the number of industrial enterprises with more than ten employees was estimated at 77. The majority of industrial activity is located on the 350 ha industrial estate at Matsapa. Mbabane, the capital, and Matsapa are connected with the harbour at Maputo, Mozambique 120 km distant by railroad (freight services only). Railroad transport is not completely reliable, however, because of the military activities of rebels opposed to the Mozambique Government.

There is a rather high fluctuation of industries being established and industries closing down. Normally, industrial enterprises face serious market problems as well as strong competition for exports to South Africa, the main outlet for Swazi industry. Management deficiencies continue to impede industrialization, and the top management of virtually all medium- and large-scale industries continues to be mainly non-Swazi; this is also the case at the professional and technical level. The lack of local entrepreneurship also constitutes a constraint to industrialization efforts.

The manufacturing sector is an important vehicle for the country's economic growth. The growth rate for the period 1977 to 1982 was estimated at 7.4 per cent per year, which exceeded the target of 7 per cent established by the Third Development Plan, and is significantly higher than the growth rate for the total GDP over the same period (4.9 per cent). The 1977 to 1982 Development Plan included the expansion of a fertilizer factory and television and radio plant as well as the establishment of a brick factory and a manufacturing unit for brake and clutch linings; in the meantime, the first two factories have shut down and the latter two are in serious financial trouble.

Swaziland's economy is market oriented. With no comprehensive programme of action having been drawn up for further industrialization, ad hoc agreements have formed the basis for the larger projects; this has given rise to the primacy of individual initiative, sometimes to the detriment of the country's economy in general. Estimates indicate that the cost of job creation in the private sector increased from E 44,000 in 1978 to E 95,000 in 1982^{1/}, which places a large burden on the economy should an industry fail.

The main channels for public investment in the industrial sector are the parastatal National Industrial Development Corporation of Swaziland (NIDCS) and the Small Enterprises Development Company (SEDCO). The Government's own assessment of the services of both development institutions was that they were less than satisfactory. Both are well staffed with personnel with economic backgrounds, but they are seriously lacking in engineering expertise. During the 1970s, UNIDO maintained a large technical assistance cadre in the country, but at present there is not a single UNIDO expert in Swaziland. The Minister of Commerce, Industry, Mines and Tourism, the Hon. Derek von Wissell, expressed his interest in having a major UNIDO assistance programme operate in Swaziland. The same view was expressed by the UNDP Resident Representative, who is now in the process of preparing the Country Programme for the next cycle.

SWA. II. Pre-Feasibility Studies or Other Pre-Investment Studies Executed by UNIDO

1. Tinkabi Tractor Manufacturing

- (a) The project was studied several times in the early 1970s by UNIDO. The factory was established as a Swazi Government project to assemble small tractors for both local farmers and for export to neighbouring countries. At the onset, all the parts were imported from India.

This type of tractor is a most unconventional transport and traction vehicle. There is a loading area for about 1 1/2 tons in front of the driver; ploughing and other equipment can be attached behind the driver. Over the entire production period, 1,197 tractors were produced, of which 400 were sold in Swaziland, with the remainder exported to other countries. For an agricultural vehicle, which can only be produced economically in large quantities, production was rather small. It soon became evident that this type of tractor was not suitable to compete (in price or in design) with those of John Deere or Massey Ferguson, which are represented in Swaziland.

In March 1984, the UNIDO Regional Adviser at the UNIDO/ECA Joint Industry Division, Mr. A.K. Mitra, made an evaluation of the factory's performance. His recommendations included releasing the factory's management, commercializing the project and selecting a more appropriate type of tractor for future production.

^{1/} Emalangeny = South African Rand

- (b) The factory is not in operation at present. Without a doubt, UNIDO's pre-feasibility studies were inadequate. From 1971 to the present, Government grants and NIDCS loans amounted to the equivalent of US\$ 2.5 million, of which the accumulated loss amounted to the equivalent of US\$ 1.3 million.

The plant's technical manager, Mr. A. Catterick, strongly criticized Mr. Mitra's report. It must, however, be borne in mind that some of Mr. Mitra's recommendations were put into practice when drawing up the new tractor prototype, namely:

- More powerful diesel engine (from 16 HP to 26 HP)
- Heat shield to protect the driver
- Well-sprung driver's seat
- Sun-roof
- Large rear tyres
- Other smaller equipment parts.

Mr. Catterick appears to be a very competent engineer, who is innovative yet realistic and who is familiar with farming conditions in Africa. He wishes to continue with the project under all circumstances, and is even prepared to invest his own money in the plant. He needs external assistance for the following:

- On-the-job training of local personnel by four expatriate experts (for 2 1/2 years);
- The establishment of a foundry for local production of cast parts;
- Training facilities for forging and heat treatment.

The Minister of Commerce, Industry, Mines and Tourism fully supports Mr. Catterick's efforts.

2. Manufacture of Valves, Fittings and Similar Products

- (a) The Government has refrained from implementing this project and no private sponsor has been willing to accept it. The production of such items, which are usually produced in large quantities, would not have a sufficiently large market, either in Swaziland or in the South African region. Moreover, the entire raw material input would have to be imported. The project was studied by Batelle, Frankfurt (FRG).
- (b) The study was inadequate.

3. Processing of Wattle Bark

The project has not yet been implemented, in the absence of a tannery. Since the establishment of a tannery is included in the current Development Plan, the Government may request an updating of the UNIDO study.

4. Cement Reinforced Particle Board from Bagasse

The project was studied in 1974 and 1980 by Mr. G.K. Elliot. The study was in favour of establishing the project, having found it to be technically feasible, but no partner was identified. A chipboard factory is now under consideration, studied by a South African consultant on behalf of an investor from that country.

5. Industrial Alcohol from Molasses

The UNIDO expert Mr. M.H. Tantawi recommended the establishment of the project, which is still open. The Government now wishes to follow up the project, which was studied again by Project Engineering Africa Ltd. under contract to the Government.

6. Fruit and Vegetable Industries

The recommendations by the UNIDO experts Messrs. Candio, Cassidi and Loo for packing, grading and cooling fruits and vegetables will now be implemented and facilities set up.

7. Feedstuff from Bagasse

The 1972 pre-feasibility study by UNIDO expert Mr. Halliday was followed up recently by a study by Interboard-Interfeed Consulting Ltd., under Government contract. The sponsor of the chipboard factory (see 4. above) is shown interest in the project.

SWA. III.A. Industrial Investment Projects Reported Concluded by Investment Promotion Services

Cologne

1. Manufacture of Brake and Clutch Linings

(a) The factory is a Swazi-Federal Republic of Germany joint venture, located at Nwgenya close to the South African border, where asbestos is exploited. The partners are:

- Swazi Nation (the country's common fund) 30 per cent
- NIDCS 30 per cent
- German Development Company (DEG) 20 per cent
- Beral Brake and Clutch Linings,
Marienheide (FRG) - technical partner 20 per cent

The factory, which started up in June 1983, employs 210 people. The local market is very small and the plant exports to South Africa. In its design, construction, appearance and equipment, the factory is a showpiece; however, as an industrial operation, it experienced many technical and financial problems right from the beginning.

Without new financial inputs, the factory has no real chance to survive. Its general manager is taking several steps to get the project back on a firm footing.

(b) The project was studied in depth by Beral and DEG. The problems encountered by the plant cannot be attributed to the study.

2. Household Candles

(a) The African Candles Ltd. factory was established at the Matsapa Industrial Estate and has been in operation since May 1984. The partners are:

- SEDCO	20 per cent
- Mr. S. Kunne (Swazi)	20 per cent
- Mr. G. Albrecht (Austrian)	55 per cent
- Mr. D. Aab (South African)	5 per cent

Daily production is 15,000 candles, which are sold on the local market. It is planned to double production next month, and further expansion is foreseen, provided the product will be included in the commodity list of the Preferential Treatment Agreement of East and South African countries (PTA) for exports to Zimbabwe, for which the company has issued a request, supported by the Ministry of Industry.

(b) Prior to its implementation, the feasibility of the project was studied by a team from IBCD, Steinbach/Ts (Federal Republic of Germany). The factory is now a flourishing business, without any problems. The study and the plant were financed by the partners.

SWA.III.B. Regional Investment Promotion Meeting, Lusaka, 1983

The Swazi Government submitted four projects at this meeting. Their status is as follows:

1. Vegetable Dehydration Plant
The project is currently being studied by a team from Ireland.
2. Ceramic Tableware
A project idea, having Government priority. However, a study is needed, for which a source of finance has not yet been found.
3. Tobacco Processing
The Government is in contact with a partner from Belgium.
4. Foundry
The project was studied by UNIDO in a first phase. The Government is urgently waiting for UNIDO's follow-up action. A letter from the Resident Representative in this respect has not had a reply. The consultant discussed the matter on his return with Feasibility Studies Section and Metallurgical Industries Branch, and they responded immediately.

SWA.IV. Selected Industrial Joint Ventures already Operational in Swaziland and Representative of the Country's Industrial Structure

1. Royal Swaziland Sugar Corporation (Simunya Project)
 - (a) As a member of ACP, Swaziland is a major supplier of sugar to the European Economic Community. In 1975, at the request of the Government, the Commonwealth Development Corporation studied the viability of a third sugar cane growing and processing project (in addition to Swaziland's two operational sugar plants), with the aim of expanding the country's annual sugar production to 400,000 tons. Following the pre-investment study, Tate and Lyle, Reading (United Kingdom) completed a final planning and development study, which led to Government approval of the project in 1977. Immediately thereafter, the Royal Swaziland Sugar Corporation was established, with the following partners:
 - Government of Swaziland
 - Swazi Nation
 - Government of Nigeria
 - Tate and Lyle Ltd.
 - Coca Cola Export Corp.
 - Mitsui
 - Commonwealth Development Corp. (CDC)
 - German Development Company (DEG)
 - International Finance Corporation (IFC)

The European Development Fund and KfW (Federal Republic of Germany) financed the dam for a man-made lake for irrigation, at a total investment cost of US\$ 85 million. The project became operational in August 1980. Average annual production is about 120,000 tons of raw sugar, exported through the harbour at Maputo. The factory employs 3,150 Swazis, plus additional personnel during the harvesting season. Two towns with the necessary infrastructure were built to house the workers and their families, altogether about 15,000 people.

- (b) The sugar estate generally runs as planned by the two studies. Nevertheless, the project is affected by falling world sugar prices. It is fully self-sufficient and does not receive any Government subsidies or foreign aid, as do similar projects in other developing countries (not to mention sugar industries in industrialized Western countries).

2. Swazi Pine Ltd. at Matsapa Industrial Estate

- (a) The project was started in 1972 as a joint venture with foreign participation for the production of furniture. The study recommended production for the local market. However, the initial company collapsed due to market problems and was taken over in 1976 by NIDCS, with minimal success. The present owner - National Savings and Finance Corporation, South Africa - bought the factory in 1978. There is no local partner.
- (b) The project was taken over without a new study being made. From the beginning, the owner employed experienced managers from the furniture industry. Valuable, modern-style furniture is being exported to the United States of America and Canada as well as to Australia and Europe. The factory does not have any problems.

3. NAMPAC Packaging Industry at Matsapa Industrial Estate

- (a) Partners in the NAMPAC Ltd. packaging operation are:
- | | |
|--|-------------|
| - NIDCS | 10 per cent |
| - NAMPAC (South Africa) | 80 per cent |
| - Commonwealth Development Corp. (CDC) | 10 per cent |

The project produces cartons from imported scrap paper. It was studied by NAMPAC itself, a well established and experienced business in South Africa. The factory mainly supplies Swaziland's citrus fruit industries. Cardboard waste is recycled by Mondi Board Mill (South Africa). The plant employs 75 people.

- (b) The project is working well.

4. Swazi Packaging Ltd. at Matsapa Industrial Estate

- (a) The project was studied in 1974 by Skiron Hundles (Switzerland). The factory became operational in 1975. Partners are:
- | | |
|--------------------------|-------------|
| - NIDCS | 15 per cent |
| - Veltor (Liechtenstein) | 85 per cent |

The factory produces various types of bags from natural fibres imported from Pakistan and Bangladesh. Different sizes are produced for packaging Swazi crops for the local market and for export. Plastic bags are produced for the sugar and salt industries, among others. In the past, the factory employed about 120 workers, but at present it has only 68 staff under contract, as a result of losses due to local competition. The company is in the course of trying to regain the market by adopting a new pricing policy.

- (b) The operation's present problems cannot be attributed to the study.

SWA.V. Persons Met

Ministry of Commerce, Industry, Mines and Tourism

The Hon. Derek von Wissel, Minister of Commerce, Industry, Mines and Tourism

Mr. C.M. Mkhonza, Principal Secretary

Mrs. L. Wimalaratne, Planning Officer

Mr. R. Haas, Advisor to the Minister

Mr. C. Wolters, Advisor to the Minister

National Industrial Development Corporation of Swaziland (NIDCS)

Mr. M.S. Dlamini, Deputy Manager

Small Enterprises Development Company (SEDCO)

Mr. P.M. Thabede, Project Officer

Simunye Sugar Estate

Mr. J.B. Ranger, General Manager

Tinkabi Tractors

Mr. A. Catterick, Manager

Swazi Pine Ltd.

Mr. M. Ramkolowan, General Manager

Beral Swaziland

Mr. K. Altgeyer, General Manager

African Candles

Mr. D. Aab, Director

Swazi Packaging Ltd.

Mr. U.J. Bezuidenhout, General Manager

United Nations Development Programme

Mr. C. Metcalf, Resident Representative

Mr. Hausner, Deputy Resident Representative

Mrs. T. Nkosi, Programme Officer for UNIDO

UNITED REPUBLIC OF TANZANIA

URT.I. Background

Industry continues to constitute only a minor segment of Tanzania's economy, accounting for approximately 10 per cent of GNP. To a large extent, this is a result of the colonial administration's neglect of this sector. Since independence in 1961, the Government emphasized the development of industry by taking various policy measures to strengthen its role in the country's economy.

At the time of Tanzania's independence, there were only 200 industrial enterprises in the country employing 10 or more workers and with a capital investment exceeding Sh. 20,000. Most of these were small factories with an investment of not more than Sh. 200,000 that manufactured cigarettes, beer and soft drinks for a small urban élite.

The years immediately following independence did not bring significant change. However, with the Arusha Declaration of 1967, which charted a socialist path of development, the Government called into being a new phase of industrial development and established control of the major means of production. From the Arusha Declaration onwards, the Government assumed a significant role in promoting and developing industrialization, by determining policies and strategies for the development of the industrial sector. Emphasis was placed on the processing of agricultural products for the local market and for export; as a result, comprehensive plans for drawn up for the processing of cotton, hides and skins, cashew nuts, etc. The National Development Corporation (NDC) and the Small-Scale Industries Development Organization (SIDO) were established as industrialization instruments, with both institutions receiving UNIDO's assistance in the form of long-term expert services. The number of manufacturing industries rose from 431 in 1967 to 499 in 1974.

In 1974, the Government instituted a long-term industrial strategy for the next 20 years, up to 1995, targetted at employing 400,000 nationals in industry by that year. The strategy's main objective was the restructuring of the industrial sector by strengthening and increasing linkages in order to achieve a greater degree of economic self-sufficiency. Priority was given to the establishment of industries fulfilling the basic needs of the majority of the population, by directing industrial policy towards the increased establishment of import substitution industries to process local raw materials.

High priority was awarded to laying the foundations for the iron and steel industry, iron smelting and steel re-rolling to meet local demand. This sector will supply the metal fabrication and engineering sectors, including machine and machine tool production. Production of cement and glass products and wood manufacturing will be initiated to serve the construction sector. The chemical sector will provide inputs to agriculture, especially fertilizers.

The success of this strategy will depend on the extent to which the country succeeds in optimizing agricultural development and mineral exploitation. The Government will continue to support the decentralization of industries and to provide the necessary infrastructure (industrial sites, transport, water, electricity, etc.) to offset the preponderance of the capital city and other major towns.

URT.II. Pre-Feasibility Studies or Other Pre-Investment Studies Executed by UNIDO

The main source for pre-investment work in the country from 1968 through 1976 was the Industrial Study and Development Centre (INDCENTRE), assisted as a large-scale project by UNIDO. INDCENTRE served the Government, NDC and SIDO as well as the private sector. It was succeeded by Tanzania Industrial Studies and Consulting Organization (TISCO).

1. Industrial Processing of Cashew Nuts

- (a) The project was studied by INDCENTRE, which recommended its implementation. NDC accepted the study and established a joint venture with an Italian partner under the name Tanita Ltd. Later, NDC took over the total equity and managed the factory as a parastatal. The project was further developed to later become Tanzania Cashew Nut Authority, an independent enterprise operating six factories and processing 120 tons of nuts annually, mainly for export to Japan and the United States of America.
- (b) The project was a full success, although at present the factories face raw material and spare parts shortages because of the country's foreign exchange difficulties.

2. Detergents

- (a) The project was studied by INDCENTRE. It was operational from 1979 through 1981, when it was taken over by National Chemical Industries. It now operates under the name Sabuni Ltd.
- (b) The plant followed the recommendations made by INDCENTRE. No problems were reported.

3. Ceramic Products

- (a) INDCENTRE made several studies of the project, leading to the establishment of a ceramics unit attached to the cement factory at Morogoro. It is a parastatal enterprise, producing tiles, tableware and related products based on Danish designs.
- (b) No problems were reported.

4. Processing of Soya Beans

- (a) On the basis of a 1972 INDCENTRE study, a plant was established at Arusha called Nachingwea Soya Bean Ltd. The project suffered from raw material shortages as well as technical difficulties and did not have adequate management. It collapsed after some years.
- (b) The demise of the project cannot be attributed to the study. Currently, there are no plans for the revitalization of the plant.

5. Locks and Builders' Hardware

- (a) The project was studied by INDCENTRE; as a consequence, two factories were set up, one at Dar-es-Salaam and the other at Moshi. Both are small-scale and now also manufacture other products, such as umbrellas, as had also been studied and recommended by INDCENTRE.
- (b) No problems were reported.

6. Leather and Leather Products

- (a) INDCENTRE studied the tanning and manufacture of various leather products. As a result, NDC started a tannery at Morogoro, now called Tanzania Leather and Associated Industries (TLAI), also producing leather shoes and other leather goods. A new shoe production facility is being started up. Present annual capacity is 7 million pairs of shoes.
- (b) The factory is an NDC project, partly financed by the World Bank. In view of recurrent management difficulties, the project continues to receive assistance from Italian experts and a UNIDO expert who has been in the country for many years. NDC is interested in locating a European partner (preferably from Yugoslavia) for a joint venture to upgrade management capabilities and attract additional capital.

7. Electric Wires and Cables

- (a) INDCENTRE studied the project in 1969. In co-operation with a Finnish partner, SIDO set up a joint venture factory at Arusha. Top management is still Finnish.
- (b) No problems have been encountered.

8. Wire Drawing

- (a) INDCENTRE studied the project in 1970. As a result, Tanzania Cable Ltd. was established at Dar-es-Salaam as an NDC project.
- (b) No problems have been encountered.

9. Cassava Starch

- (a) An INDCENTRE study led to the establishment of Tanzania Starch Manufacturing Company Ltd., a National Chemical Industries (NCI) project at Mwanza. A second factory will be set up in April 1986.
- (b) No problems have been encountered.

10. Battery Production

- (a) INDCENTRE's study of battery production had two ramifications: Firstly, a private-owned car battery plant was established as Yausa Battery Ltd. at Dar-es-Salaam. Later, Matsushita of Tanzania Ltd. set up a joint venture with a Japanese partner to produce minicells and electrical equipment such as fans, etc., also located at Dar-es-Salaam.
- (b) Both factories are successful. They are NDC projects with private participation.

11. Galvanizing Plants

- (a) As a result of an INDCENTRE study, several small galvanizing plants were established as SIDO projects at Dar-es-Salaam and Arusha (on the latter's industrial estate).
- (b) No problems have been encountered.

12. Slotted Angles

- (a) The manufacture of slotted angles was studied by INDCENTRE in 1972. A factory was erected at Moshi a year later as a SIDO project. It was operational until its collapse in 1978 due to shortages of foreign exchange for importing raw material. Other small privately-owned factories took over its production and diversified the range to include locks and other small metal articles.
- (b) The closing down of the original factory cannot be attributed to the study. No revitalization of the original plant is being considered, as the existing plants already meet local demand.

13. Sandpaper

- (a) A small sandpaper factory studied by INDCENTRE was operational at Moshi in the 1970s, but had to be closed down due to management problems and shortages of capital. Production may be resumed because the Tanzania Provident Fund has shown an interest in financing the project. In addition, the private owner has taken steps to locate a foreign partner. There is no other production of sandpaper in the country.
- (b) No further study will be required.

14. Bicycle Manufacturing

- (a) INDCENTRE studied the establishment of a bicycle manufacturing operation based mainly on assembling parts imported from India. A complementary study was conducted by TISCO. A bicycle assembly plant was set up at Dar-es-Salaam as an NDC project and was operational for some years.
- (b) Operation has been suspended for the present, due to the lack of imported parts caused by foreign exchange shortages, but it is expected to resume in the near future.

15. Edible Oil from Coconuts

- (a) INDCENTRE's feasibility study recommended the extraction of edible oil from coconuts. NDC established a plant, which has since been taken over by the Ministry of Agriculture as the Multipurpose Oilseed Processing Company Ltd., located at Morogoro.
- (b) No problems were reported.

16. Sugar Complex

- (a) A sugar complex was studied by INDCENTRE in 1969/71. A total of three plants are operational, at Dar-es-Salaam, Hagera and Morogoro.
- (b) The establishment of the plants cannot be attributed solely to INDCENTRE. UNIDO had studied general manufacturing possibilities, while studies from other sources led to the establishment of the individual factories.

17. Oil and Soap Manufacture

- (a) INDCENTRE studied the project in 1971. NCI built one plant, in 1974, called TIP Soap and Glycerine Ltd., at Tanga as a parastatal; a second plant was erected by Sabuni Industries Ltd. at the same location.
- (b) Both operations are successful.

18. Manufacture of Pencils

- (a) The project was studied by INDCENTRE. A factory was established with SIDO assistance at Tanga as a private enterprise and has been in operation for some years now.
- (b) The plant's operations followed the recommendations of the UNIDO study.

19. Enamelware

- (a) The project was studied by INDCENTRE. Production was started in 1974 by a private businessman at Dar-es-Salaam, under the name Metal Products Ltd.
- (b) No problems were reported.

20. Manufacture of Nuts, Bolts and Screws

The production of nuts, bolts and screws recommended by INDCENTRE is operational as a private enterprise at Moshi.

21. Automobile Tyres and Tubes

- (a) The project was studied by INDCENTRE in 1967 as one of the first projects. General Tyres joined NDC with a 20 per cent share in a venture to produce automobile tyres and tubes, known as General Tyre East Africa Ltd. at Arusha. 50 different types of tyres are produced, and 680 workers are employed (see URT.IV.2.).
- (b) INDCENTRE had generated the idea of local tyre production, while the main study was conducted by General Tyres (United States of America).

22. Galvanized Buckets and Dustbins

- (a) A private sponsor made use of INDCENTRE's study and is in the process of erecting a plant at Arusha, and possibly a further one at Dar-es-Salaam. The Arusha plant will start up next year.
- (b) No problems exist.

23. Leather Gloves

The production of leather work gloves was studied by INDCENTRE and has become part of the leather complex at Morogoro (see URT.II.6.).

24. Malt Production

- (a) UNIDO sub-contracted a study to Vogelbusch (Austria) in 1972. Tanzania Breweries followed the recommendations made by Vogelbusch and since 1974 has used the raw material grown in the western part of the country for its malt production at Arusha.
- (b) No problems were reported.

25. Salt Refining and Production

- (a) In 1976, UNIDO expert Mr. P. Subrancian studied the feasibility of salt production and refining. The State Mining Corporation established such a plant at Dar-es-Salaam.
- (b) The factory is not facing any difficulties.

26. Pharmaceutical Production

- (a) In 1974, UNIDO studied the establishment of a pharmaceutical production at Arusha as well as on the island of Zanzibar. The Arusha plant is operational, assisted by Finida (Finland); information on the Zanzibar plant was not available.
- (b) No problems were reported.

27. Manufacture of Sheet Glass and Hollow Glass

(a) In 1978, UNIDO expert Mr. P. Manthelot studied the feasibility of manufacturing sheet glass and hollow glass. Tanzania Saruji Corporation recently set up a sheet glass production as a subsidiary of its cement plant at Dar-es-Salaam. The recommendations for the manufacture of hollow glass were taken up by Aluminium Africa Ltd., a private company; the plant is under construction at Mwanza.

(b) No problems were reported.

28. Foundry

The recommendations for a foundry made in 1973 by expert Mr. R. Ali (INDCENTRE) have only recently been followed up. The foundry is being erected by a private sponsor and is almost (90 per cent) completed, but has not yet been started up. It is a SIDO project.

29. Wire and Strip Products

(a) INDCENTRE studied the feasibility of the manufacture of wire and strip products in 1970. A local promoter was interested in the project, but only in co-operation with a foreign investor. The project was never implemented.

(b) The non-implementation of the project cannot be attributed to the study, but rather to lack of capital and management deficiencies.

30. Brewery

(a) In 1979, UNIDO expert Mr. G.W. Haase studied the feasibility of a second brewery in Tanzania, which was eventually established; it is also owned by Tanzania Breweries Ltd.

(b) No problems were reported.

31. Sawmill

(a) INDCENTRE studied the extension of an existing sawmill and the creation of operations to produce fibreboard, chipboard, plywood and wood panels. Three of these units were established in various parts of the country; the consultant visited one of these units in Arusha.

(b) No problems were reported.

32. Ceramics

(a) In 1975, the UNIDO expert Mr. S.B. Johansen studied the feasibility of a second ceramics industry (for pottery) in a rural area. The project materialized in the Morogoro area.

(b) The project does not face any problems, apart from a shortage of foreign exchange for the purchase of spare parts.

33. Furniture Production

- (a) INDCENTRE studied the project in 1971. A private sponsor, Mr. Ramatula, established Kilimanjaro Timber Utilization Company Ltd. at Dar-es-Salaam. When he ran into financial difficulties, he sold the factory to Tanzania Wood Industries Corporation (TWICO).
- (b) The problems the factory ran into cannot be attributed to the study. All the furniture of the Kilimanjaro Hotel at Dar-es-Salaam, as well as a great deal of the furniture for Government offices, had been supplied by the plant under its original owner. The factory is still operational; it faces problems with management and spare parts procurement.

The success of UNIDO's programme in the country is mainly attributable to the efforts of the team leader and the INDCENTRE staff, who only accepted project requests if NDC, SIDO or a private sponsor had shown interest and if they felt the potential sponsor was suitable for the project's implementation.

URT.III.A. Industrial Investment Projects Reported Concluded by Investment Promotion Services

Cologne

1. Toothpaste Production (Theml Toothpaste)

- (a) In 1980, a joint venture was concluded between the local partner, Mr. I. Dahal and Blendax GmbH, Mainz (Federal Republic of Germany), on the basis of a study conducted by Blendax. Equity participation was divided 60 per cent Blendax and 40 per cent local partner. Blendax supplied the equipment (valued at US\$ 260,000), raw material, top management and packing materials, while the local sponsor supplied working capital, buildings, water and electricity supplies, etc. The factory is located at Arusha's industrial area.

Production started off well, but problems arose when the Government had to delay issuing licences for the raw material due to foreign exchange shortages. Further, Blendax was not permitted to repatriate profits in foreign currency. It withdrew from the project in 1982, and in the settlement, Mr. Dahal took over its total investment and continued on his own to produce toothpaste.

- (b) The project is now a definite success. Since Blendax's withdrawal, the factory has received the import licences for the raw material, which is being delivered under a long-term contract with a Japanese toothpaste factory. The project supplies the local market and exports to the Arab Gulf.

2. Parquet Flooring from Tropical Wood

In 1980, Interfloorings GmbH, Hamburg (Federal Republic of Germany) issued a Letter of Intent with Tanzania Wood Industries Corporation (TWICO) for a joint venture for parquet flooring manufacture from tropical wood. Interflooring was prepared to supply the equipment as well as key management for a certain period, and offered a buy-back arrangement for the production of exportable parquet flooring for distribution in Germany.

TWICO required a feasibility study of the project as a precondition to its financial participation. UNIDO made two experts available, who studied the project from Dar-es-Salaam, without travelling within the country. The experts concluded that the necessary quantities of wood were not available. Because of this conclusion, and the means by which it had been reached, Interflooring withdrew its offer.

URT.III.B. Regional Investment Promotion Meeting, Lusaka, 1983

No information was available either with the Industrial Promotion Division of the Ministry of Industry and Trade or with the National Development Corporation on the extent to which the country's participation in the meeting had resulted in joint venture agreements, or at least in prospects for such agreements.

The files of the former SIDFA, Mr. Henein, showed that he had made strong efforts to locate joint venture partners in several industrialized and developing countries. The JPO, Mr. E. Skoensberg, was advised by the consultant to continue these efforts and to involve the Investment Co-operative Programme - either at headquarters or through the Investment Promotion Services - whenever necessary.

UR'.IV. Selected Industrial Joint Ventures already Operational in Tanzania and Representative of the Country's Industrial Structure

1. Tanelec Ltd., Arusha

- (a) The project is a joint venture between NDC and National Industry, Oslo (Norway). Equity is shared 80 per cent by NDC and 20 per cent by National Industry. The factory started its production of transformers and high voltage switchboards in 1979.

The project was based on a study by Indian Consulting Ltd. UNIDO was not involved.

The project became a great success, although initially it faced problems as a result of the study's having recommended an annual production of 650 transformers, which was far in excess of local demand. During the first years of operation, Tanelec did not sell more than 250 transformers annually, and its sales of switchboards were minimal. After heavy losses, production was restructured according to market demand, and the situation subsequently improved, also thanks to an auxiliary production of small electrical goods such as stoves, lamps, etc.

The company expanded in 1981, after entering the markets of neighbouring countries as a result of attractive offers for international tenders. Present annual production is 450 transformers and about 70 switchboards.

- (b) The plant has always received foreign aid for its operations and, because its raw material imports are funded by NORAD, it is not affected by the foreign exchange shortages prevailing in the country. NORAD also funds the project's expatriate personnel (a Norwegian management team originally ran the plant for two years, and top management is still Norwegian). National Industry's earnings are guaranteed in convertible currency by Norway's State Bank.

2. General Tyre East Africa Ltd., Arusha

- (a) As mentioned under URT.II.21., the project idea was based on an INDCEMRE study. (See URT.II.21.).

All the equipment originated from a General Tyres factory in Holland that closed down in 1966. The capital structure for the operation was 74 per cent NDC and 26 per cent General Tyres (United States of America). The equipment was valued at US\$ 7.9 million; the present value of the plant is estimated at US\$ 100 million.

Production started in 1971. 50 different sizes of tyres are produced and 680 workers are employed.

- (b) The factory is profitable. The operation is viable because raw materials and spare parts are funded by foreign aid from the Netherlands. The factory's top management is paid by United States Government funds.

3. National Engineering Ltd., Dar-es-Salaam

- (a) The plant was taken over from its colonial owners and was at first run as a joint venture with a United Kingdom partner. It is now a 100 per cent NDC operation, producing heavy steel structures, containers, metal parts for industry, etc.

The project received management support for a number of years from the Federal Republic of Germany in the form of experts employed by GTZ (Company for Technical Co-operation); currently, there are three experts assisting the project.

- (b) In the past, the Federal Republic of Germany periodically withdrew its experts, resulting in the factory's having to cope with serious management problems. For the present, the company is again profitable, as its raw material and spare parts imports are paid for by the Ministry for Foreign Co-operation of the Federal Republic of Germany through NDC.

The above three cases clearly prove that, in view of Tanzania's perpetual foreign currency problems, the operation of an industry that relies on imports of raw materials and spare parts cannot be ensured without supporting measures for ensuring the availability of foreign currency; feasibility studies ought therefore to take this factor into consideration.

URT.V. Persons Met

Ministry of Industry and Trade

Mr. W.L. Nyachia, Director for Project Investment and Implementation

Mr. S.M.K. Sella, Head of Investment Resources

National Development Corporation (NDC)

Mr. G.E. Mariki, Director of Research and Planning

Mr. M. Laizer, Planning Manager

Small-Scale Industry Organization (SIDO)

Mr. M. Mlagala, Director of Planning

Tanzania Wood Industries Corporation (TWICO)

Mr. J. Holmes, Manager

General Tyres East Africa

Mr. T.A. Wolfe, General Manager

Tanelec

Mr. G. Gundersen, General Manager

National Engineering Ltd.

Mr. W. Beer, Manager

Them Toothpaste

Mr. I. Dahal

United Nations Development Programme

Mr. W. Church, Deputy Resident Representative

Mr. F.J. Harbison, Chief Technical Adviser, TIRDO

Mr. E. Skjoensberg, Junior Professional Officer

ZAMBIA

ZAM. I. Background

With the Government's objective of diversifying the country's economic structure so as to reduce the country's dependence on the copper mining sector, the manufacturing sector will have to play a more decisive role than it has in the past. The core of the Government's strategy is:

- To promote import substitution and export orientation by establishing industries based on the maximum use of indigenous agricultural and mineral raw materials;
- To pursue an integrated approach towards industrialization by establishing industries that are closely linked and by using all agricultural and industrial by-products and wastes;
- To give special attention to the choice of technology, taking into account factor endowment aspects and domestic market size;
- To attach highest priority to the development of small-scale and rural industries;
- To convert existing assembly plants into manufacturing plants by increasing the number of stages of production to be undertaken locally. In this context, small-scale industries can be ancillaries for supplying parts and components to major units;
- To give priority to the fullest possible utilization of existing industrial capacities, by arranging adequate supplies of raw materials and other inputs and by paying special attention to cost control and equipment maintenance;
- To make provision for the establishment of essential capital goods industries.

In this context, the Government has selected a number of priority industries to receive special emphasis through individual industrialization measures. These priority industries include agro-industries, copper-based industries, ceramics, and pre-fabricated building elements and other construction components. Emphasis is also given to the production of fertilizers, sulphuric acid, mining equipment, agricultural tools and implements, and cement. The parastatal and private sectors will receive the Government's equal treatment in participating in the incentives programme under the Industrial Development Act. Joint ventures between a foreign investor and a Zambian partner will be encouraged by ensuring the security of the foreign investment, repatriation of profits and fair treatment.

The main Government institutions involved in the promotion and operation of public sector industries are the Industrial Development Corporation (RUCOM) and the Rural Corporation for Industrialization (RUCOM).

ZAM. II. Pre-Feasibility Studies or Other Pre-Investment Studies Executed
By UNIDO

1. Wood-based Distillation

- (a) The project was studied by Mr. E.F. Uhart in 1974. It has not yet been implemented, although the Development Bank of Zambia is interested in financing it. The Bank would like the study to be up-dated, to which end the National Commission for Development has received a request. The project is included in a Government list of feasibility studies required, an advance copy of which has been sent to the Feasibility Studies Section.
- (b) No comments.

2. Pharmaceuticals

- (a) The feasibility of a pharmaceutical industry was studied by Mr. A. Khane in 1974. The portion for producing intravenous injections was implemented in 1978 with General Pharmaceuticals Ltd., Lusaka, a company under the umbrella of Zambia Investment Mining Corporation (ZIMCO).
- (b) No problems were reported.

3. Copper Smelting and Processing

- (a) None of the various pre-feasibility studies on copper smelting and processing have been implemented. The last (voluminous) study, by Metra Consulting Group Ltd. (London) on co-operation between Zambia and Nigeria was not used due to lack of interest on the part of Nigeria, and the joint project idea has since been dropped. The Zambian Government now wishes to pursue a plan for a small project for the local market; the Permanent Secretary of the Ministry of Industry and Trade, Mr. E.S.S. Nebwe, would welcome UNIDO's assistance in this regard.
- (b) When the question of further assistance was raised with the UNDP Resident Representative, Mr. Dragic, he showed reluctance to allocate additional funds to a project that has been very expensive and that so far has not led to any positive results. He expressed the view that the country's copper resources may be exhausted in about ten years' time, and that no industry would be justified based on this limited availability of raw material. However, in a 1984 study by the World Bank, which is now involved in the project, Zambia's copper resources were estimated to last for another 19 years. Should further assistance be requested from UNIDO, it may be useful to conduct a preliminary desk study at headquarters.

4. Production of Alcohol from Molasses

- (a) The project was studied by Mr. J. Meyrath in 1979. A joint venture was established with INDECO and Duncan Gilbey and Matheson Ltd., Lusaka, the Zambian subsidiary of a United Kingdom company.
- (b) ZAM.IV.2 refers.

5. Salt Production

- (a) The project was studied by Mr. C.L. Malhotra in 1971. Imported rock salt is processed for human consumption by National Milling Ltd., Lusaka as an INDECO operation. Based on the recommendations of Mr. Malhotra, drilling and testing are currently under way by a geological survey team.
- (b) No problems have been encountered so far.

6. Solvent Extraction from Maize

- (a) The project was studied in 1978 by Mr. M. Schneider. Based on the study, a factory was established by Refined Oil Products Ltd., an INDECO company. The plant is operational.
- (b) Mr. Schneider has made a follow-up study, which should be available in the near future. The existing plant does not seem to have any problems.

7. Tanning and Manufacture of Leather Goods

- (a) The project was studied by Mr. V.M. Gonzalez in 1974. The plant was established by RUCOM and it was successful at the onset; however, it went out of business subsequently due to management deficiencies and lack of foreign exchange for the purchase of chemicals and spare parts, as well as due to strong competition from Bata. It was sold to a private company, Clutch and Brakes Ltd., and again went into operation.
- (b) The collapse of the project cannot be attributed to the study, since it is now working well.

8. Game Skin Tannery

- (a) The project was studied by Mr. G. Felsner in 1984. A gam skin tannery is being set up next to a game park open to hunting. While the project was studied at the request of RUCOM, it is being carried out by Clutch and Brakes Ltd.
- (b) The tannery is not yet operational, although the equipment has arrived.

9. Agricultural Tools and Implements

- (a) The project was studied by Mr. B.E. Hajdu in 1973. In line with the study's recommendations, Zambia Steel and Building Supply Ltd., an INDECO company, produces agricultural hand tools and assembles ploughs and ridges at Lusaka.
- (b) No problems were reported.

10. Cassava Processing

- (a) The project was studied by Messrs. D.R. Atkinson, T.R.W. Jarman, J. Turnbull and D.J. Wholey in 1983. As a result, Niska Ltd., Ndola will set up an operation to produce starch from cassava, financed by the Zambia Development Bank.
- (b) The equipment has been ordered.

11. Pineapple Canning

- (a) The project was studied by Mr. Wooster in 1983. INDECO/RUCOM will set up a pineapple canning operation at Mwinilunga.
- (b) The cannery and plantations will be partly financed by KfW (Federal Republic of Germany).

12. Rehabilitation and Expansion of RUCOM's Chati Woodworking Plant (Furniture)

- (a) The project was studied by Mr. H.P. Brion in 1981. The expert's recommendations for the rehabilitation of the plant were implemented and the plant is operational.
- (b) An expansion of the manufacturing programme has not yet taken place, in view of a shortage of funds for additional equipment.

UNIDO assisted the Government of Zambia from 1979 through 1981 with an Industrial Project Identification Team (Mr. Weresinghe as Team Leader, Mr. Nielsen as Industrial Engineer and Mr. Rao as Financial Analyst); ten pre-feasibility studies were made:

- Agricultural Lime (North-Western Province)
- Agricultural Lime (Northern Province)
- Sawmill (North-Western Province)
- Sawmill (Northern Province)
- School Furniture and Joinery (North-Western Province)
- School Furniture and Joinery (Northern Province)
- Cassava/Maize Mill (North-Western Province)
- Cassava/Maize Mill (Northern Province)
- Beeswax for Export (North-Western Province)
- Surgical Cotton Wool (Lusaka Province)

In a meeting with the consultant, the Resident Representative criticized the quality of the Industrial Project Identification Team's work and reported that the provincial governments in question had not taken steps to implement any of the projects. The consultant studied the team's work and discussed the subject with the long-term UNIDO expert attached to the National Commission for Development Planning, Mr. Wooster. Both agreed that the studies are adequate as pre-feasibility studies for reaching a preliminary investment decision prior to the commissioning of further detailed studies. With respect to the provinces' not having taken any action, it must be borne in mind that they are far from having the infrastructure conducive to industrialization; nor do they have the necessary funds or management and labour skills.

ZAM.III.A. Industrial Investment Projects Reported Concluded by Investment Promotion Services

Cologne

1. Ceramics Manufacture

- (a) A preliminary investment agreement was reached in late 1981 between the Industrial Development Corporation of Zambia (INDECO) and AGROB Keramische Werke, Munich (Federal Republic of Germany) for the establishment of a plant to manufacture ceramic sanitary ware, tiles and tableware at Lusaka. AGROB withdrew during the final negotiations, and Netsch, Selb (Federal Republic of Germany) took its place. Netsch had originally wanted a share in the equity, but the project ultimately became a 100 per cent INDECO plant. Netsch supplied the entire equipment input and is still active in the project's key management positions.
- (b) The project was studied by AGROB, financed from its own funds.

2. Processing of Wild Mushrooms

- (a) In 1981, a preliminary investment agreement was reached between the Rural Corporation for Industrialization (RUCOM) and Seuss Pilzeimport (Federal Republic of Germany) for the collection and processing of wild mushrooms, large quantities of which are available in Zambia. During a second visit to the country, Mr. Seuss (who was accompanied by Mr. Simon of the Cologne Investment Promotion Service) had a frightening experience - unrelated to the project - while travelling in a rural area, which led to his withdrawing from the agreement.
- (b) In the meantime, Borgens Konserver AB (Sweden) showed interest, and the study carried out by INDECO's Projects Division was favourable to the company. SWEDFUND will finance the Borgens-RUCOM joint venture.

Brussels

3. Manufacture of Pharmaceuticals

- (a) The project is a joint venture between INDECO's General Pharmaceuticals Ltd. and Medical Pharma, Zaandam (The Netherlands). It is an extension of an existing plant for the manufacture of new products. The project is being implemented.
- (b) No formal feasibility study was made.

ZAM.III.B. Investment Promotion Meeting, Lusaka, 1983

The following information was obtained from the Ministry of Industry and Trade and INDECO regarding the results of Zambia's participation in the Investment Promotion Meeting:

1. Industrial and Potable Alcohol Distillery from Molasses.
An investment agreement was concluded between INDECO and Duncan Gilbey and Matheson Zambia Ltd. (United Kingdom). Further, a contract was concluded by the two partners with Zambia Sugar Company Ltd. for a continuous supply of molasses.
2. Kenaf/Jute Sack Making.
A foreign partner was identified and a preliminary agreement has been reached. Funding has not yet been secured.
3. Nitrogen Chemicals.
No partner will be considered before the project has been studied, for which UNIDO's assistance is welcomed.
4. Oral Salts.
UNICEF is providing the equipment for this project, which is being assisted by the UNIDO expert Mr. Alludin.
5. Pharmaceuticals.
The project was concluded in 1984 with the assistance of the Brussels Investment Promotion Service and is dealt with under ZAM.III.A.3.
6. Rubber Reclamation Plant.
The project has been dropped.
7. Glass Sheet Plant.
The project is under discussion with the Government of Romania.
8. Manufacture of Copper Wire.
An investment agreement was concluded with INDECO, Phelps Dodge Svenska Metallverken (Sweden) and International Corporation (United States of America) (20 per cent share).
9. Irrigation Equipment.
Negotiations are pending with INDECO, three partners from the United Kingdom and the Government of Bulgaria.
10. Transformers.
The manufacture of transformers and electric motors is being negotiated with Elsunco, Stockholm (Sweden); an agreement is almost concluded.
11. Steel Re-Rolling Mill.
The project has high priority, but no partner has yet been located. UNIDO's assistance in locating suitable partners is urgently requested. Tata (India) has shown interest.
12. Knock-Down Furniture.
A partner is being considered.

In view of pending negotiations, the Government was willing to divulge the names of investors for only a limited number of projects.

ZAM. IV. Selected Industrial Joint Ventures already Operational in Zambia and Representative of the Country's Industrial Structure

1. Zambia Sugar Company Ltd., based in Lusaka, operates two sugar estates and factories. The project was originally set up in 1968 as a joint venture with Tate and Lyle Ltd. (United Kingdom) (80 per cent), INDECO (10 per cent) and a private shareholder (10 per cent). The private shares were sold to INDECO in 1971, with Tate and Lyle keeping 11 per cent of the equity.
 - (a) Tate and Lyle studied the project in 1965/66 and recommended an annual production of 100,000 tons. In the first year, production reached 88,000 tons; it later rose to 160,000 tons/year. The entire production is sold on the local market.
 - (b) Tate and Lyle continues to provide top management staff, financed from United Kingdom technical assistance funds.
 - (c) The expansion of the plant, including sugar cane plantations, was financed from foreign aid from the United Kingdom, the Netherlands, the United States of America and the Federal Republic of Germany, with the latter alone providing DM 27 million (through KfW).
The total value of the project is presently estimated at US\$ 100 million.
The study did not have any shortcomings. Total employment is 7,500 and the sugar plant is Zambia's largest employer.

2. Bottling of Imported Liquors (Duncan Gilbey and Matheson Ltd., Lusaka).
 - (a) The project was studied by Duncan and Partners in 1966 and operations started in the same year. Current annual production is 90,000 cases (12 bottles per case). The company employs 59 people. Partners are:

INDECO	49.7 per cent
Duncan	34 per cent
Samageto Ind.	16.3 per cent
 - (b) The study has shown no shortcomings. The project is a very simple one and Duncan has long experience operating similar projects in other parts of the world.
 - (c) The factory will start producing alcohol from molasses in the near future (see ZAM. II.4.).

3. Zambia Breweries Ltd., Lusaka. (The company operates a second brewery at Ndola).
 - (a) The project was studied by John Labatt, Canada in 1965 and was established in 1967. In 1968, INDECO took over the majority capital; Labatt still holds 20 per cent of the equity.

- (b) The brewery's annual capacity is 650,000 hl, as recommended in the study. However, this production has never been reached, mainly because of lack of spare parts, and annual production varies between 500,000 and 550,000 hl.
- (c) The brewery had fewer problems than other projects regarding import licences, since it is classified as a priority industry, supported by the Government.
- (d) No shortcomings can be attributed to the study.

ZAM.V. Persons Met

Ministry of Industry and Trade

Mr. E.S.S. Nebwe, Permanent Secretary
Mr. R.K. Manyika, Senior Economist
Mr. S. Banda, Economist

Industrial Development Corporation (INDECO)

Mr. S. Rao, Director of Projects
Mr. Mubita, Senior Projects Manager
Mr. Kaluba, Projects Manager

National Commission for Development Planning (NCDP)

Mrs. Muchilemba, Acting Director, Investment Policy
Mr. Mirovic
Mr. Wooster

Rural Corporation for Industrialization (RUCOM)

Mr. Bwulane, General Manager

Zambia Sugar Company Ltd.

Mr. D. Tate

Duncan Gilbey and Matheson Ltd.

Mr. J. Matinki

Zambia Breweries Ltd.

Mr. Kapiri, General Manager

United Nations Development Programme

Mr. D. Dragic, Resident Representative
Mr. G. Bekele, Senior Industrial Development Field Adviser

ANNEX I

FOLLOW-UP ON INDUSTRIAL JOINT VENTURE PROJECTS IN SELECTED DEVELOPING COUNTRIES - PHASE I 1/

The principal aim of the desk study undertaken by the consultant was to follow up on selected joint venture projects and other long-term agreements originating from the UNIDO Investment Promotion Services, Investment Promotion Meetings or direct contacts and which were reported as having been concluded.

Investment Co-operative Programme

Industrial Investment Projects
(in Selected Countries)

Country	Reported Concluded by Investment Promotion Services	Presented at Investment Promotion Meetings	Total
Kenya	7	26	33
Swaziland	2	5	7
United Republic of Tanzania	2	15	17
Zambia	1	33	34
Sri Lanka	27	46	73
Malaysia	4	5	9
Total			<u>173</u>

The consultant was requested to investigate, inter alia, what support services had been made available to such projects by the governments concerned, by UNIDO or by other parties. Because the quarterly or individual reports emanating from the Investment Promotion Services on their concluded projects provide such information to a limited extent only, the consultant encountered major difficulties in fulfilling this task. With respect to point 1. (e) through (g), due to the lack of information available from the records, further study has to be left to field work during Phase II of the follow-up on industrial joint venture projects. Further, because UNIDO's records contain only a minimum of follow-up information on studies, the consultant was faced with constraints in his assessment of 2. (a) through (d) of the Terms of Reference. Field work will be required so as to be able to provide the necessary data in this respect. The names of former officials in charge of the various projects (see footnotes to part III. of this report) may be of assistance, although the consultant is aware that in the meantime such personnel may have been re-assigned.

Number of Pre-Investment Studies Suitable for
Joint Venture Industries (by Country)

Kenya	45
Swaziland	8
United Republic of Tanzania	40
Zambia	10
Sri Lanka	12
Malaysia	19
	—
	134
	—

It would also have been of interest to analyze a number of operational joint venture industries in developing countries in which UNIDO had not been involved. Unfortunately, relevant information about such projects could not be located at UNIDO headquarters. Provided interest in such a survey exists, the consultant has added this task in his draft Terms of Reference for Phase II.

Because of pressure of time, the consultant selected certain countries in which UNIDO had undertaken major investment or pre-investment study programmes. These countries include Kenya, Swaziland, United Republic of Tanzania and Zambia in Africa, and Sri Lanka and Malaysia in Asia. These latter two Asian countries may be covered by a subsequent Phase III, based on experience of the African countries.

I. INDUSTRIAL INVESTMENT PROJECTS REPORTED CONCLUDED
(BY COUNTRY AND BY INVESTMENT PROMOTION SERVICE CONCERNED)

1. KENYA

- Brussels 1.1. Asbestos Cement Pipe and Roof Sheets Production.
Sponsored by Kenya Asbestos Cement Ltd. in co-operation with Eternit-Eterontremmer (Belgium) and its United Kingdom subsidiary.
Total investment: US\$ 1.2 million.
- 1.2. Fertilizer Formulation and Mixing Plant.
Sponsored by National Agricultural Chemicals and Fertilizer Ltd. Stamicarbon (Netherlands) was the foreign partner. The project was part of the pre-feasibility study for nitrogenous fertilizer (see III.1.2.).
Estimated total investment: US\$ 2.5 million.
- 1.3. Dunlop Tyre Plant.
No further information available.
- 1.4. Leather Industry of Kenya.
Partners were Industrial Promotion Service (Kenya) and Union des Tanneries de Malmedy (Belgium) and certain banks. The project was part of the study listed under III.1.8.
- Cologne 1.5. Kenya Glass Industries Ltd.
Foreign partners envisaged were Heye Glass, Winkler Glass and Deutsche Entwicklungsgesellschaft (Federal Republic of Germany).
- New York 1.6. Mosquito Coils.
No further information available.
- Zurich 1.7. Cassava Chips and Pellets.
The project originated from the Industrial Survey and Promotion Centre (UNIDO-assisted). It is a Government enterprise operated in co-operation with Buehler (Switzerland).
Total investment: US\$ 1 million.

2. SWAZILAND

Cologne

- 2.1. Manufacture of Brake and Clutch Linings.
Sponsored by Swaziland National Development Corporation. Foreign partners were Beral Brake and Clutch Linings and Deutsche Entwicklungsgesellschaft (Federal Republic of Germany). The products are sold locally and to neighbouring countries.
Total investment: US\$ 4.6 million.
Two (non-UNIDO) studies - one on raw materials and the other a market study - were made available to the two partners in the Federal Republic of Germany. In order to ensure the proper operation of the plant, the Cologne Investment Promotion Service drafted a technical assistance request for management expertise and training of local staff, which was approved by the Government and submitted by the Resident Representative. The Programming Committee approved the project for financing from the Special Purpose Contribution of the Federal Republic of Germany. However, the project encountered administrative obstacles and no funds were released.

- 2.2. Household Candles Manufacture.
Sponsored by BEDCO in co-operation with a partner from the Federal Republic of Germany.
Total investment: US\$ 200,000.

3. UNITED REPUBLIC OF TANZANIA

- Cologne 3.1. Production of Toothpaste.
Joint venture with local sponsor and Blendax Werke, Mainz (Federal Republic of Germany). Production of toothpaste and tooth-brushes in Arusha for the local market and for export, especially to Arab countries.
- 3.2. Production of Parquet Floorings from Tropical Woods (Muhuhu Wood, Mninga, Mruho and Panca Panca); Partners were Tanzania Wood Industries Corporation (TWICO) and Interfloorings, Hamburg (Federal Republic of Germany).

4. ZAMBIA

- Cologne 4.1. Processing and Conservation of Mushrooms for Export. Sponsored by Rural Development Company (RUCOM) with Seuss (Federal Republic of Germany). The Cologne Investment Promotion Service assisted the German partner both in Cologne and in a visit to Zambia.

5. SRI LANKA

- Brussels
- 5.1. Solid Tyre and Rubber Master Batches.
Sponsored by Berguguan Lanka Ltd. in co-operation with Kleber-Colombes (Belgium). Production of various rubber articles.
Total investment: US\$ 4.0 million.
- 5.2. Ceylon Synthetic Textile Mill.
Private company operated in co-operation with Picanol (Netherlands) and a Belgian partner.
Total investment: US\$ 8.0 million.
- 5.3. Renewable Energy Equipment.
No further information available.
- 5.4. Leather Work Gloves
Sponsored by local partner in co-operation with P.J. van Heerwijk (Netherlands).
- 5.5. Trimmings.
No further information available.
- 5.6. Rubber Industry.
Based on recommendations of studies listed under III.5.8. and III.5.10.
- Cologne
- 5.7. Manufacture of Rubber Components.
Sponsored by local partner in co-operation with Gummiwerke Bredenscheid (Federal Republic of Germany). Production of rubber parts for the automobile industry for export. Based on recommendations of studies listed under III.5.8. and III.5.10.
Total investment: US\$ 2.5 million.
- New York
- 5.8. Terry Fabric Weaving.
No further information available.
- 5.9. Building of Trawlers.
Sponsored by local partner in co-operation with Francic Ottaway Inc. (United States).
Total investment: US\$ 1.3 million.
- 5.10. Sea-food Processing.
Sponsored by private partner in co-operation with Fremont Fisheries (United States).
Total investment: US\$ 1.5 million.

- 5.11. Food Processing Plant.
No further information available.
- 5.12. Gem Cutting.
Local partner in co-operation with Dakota Lapidem
Gem Cutting (United States).
Total investment: US\$ 300,000.
- 5.13. Sportswear Production.
Sponsored by local partner and South Sportswear
(United States).
Estimated total investment: US\$ 300,000.
- 5.14. Garment Production.
Local investor in co-operation with Jagualanka
Garments (United States).
Total investment: US\$ 200,000.
- 5.15. Garment Production.
Local investor in co-operation with Star Garments
(United States).
Estimated total investment: US\$ 400,000.
- 5.16. Electronic Components Manufacture.
Local partner in co-operation with Harris Electronics
(United States).
Total investment: US\$ 25 million.
- Tokyo 5.17. Ship Breaking)
5.18. Coconut Fibre Processing) No further
5.19. Buddhist Altars) information received,
5.20. Raw Materials Processing) despite cabled request.
5.21. Computer Software)
- Zurich 5.22. Mini Sugar Plant.
No further information available.
- 5.23. Tea Packaging Plant.
Local partner in co-operation with Model S.A.
(Switzerland).
Estimated total investment: US\$ 3.7 million.
- 5.24. Music Boxes Manufacture.
Sponsored by Musico with Swiss partner.
Total investment: US\$ 1.2 million.

5.25. Cashew Nut Processing.
No further information available.

5.26. Essential Oil Extraction.
No further information available.

Vienna 5.27. Rubber Gloves Production.
No further information available.

6. MALAYSIA

Cologne 6.1. Tyre Retreading and Rubber Mounting.
Sponsored by Perak State Development Corporation in
co-operation with Gummi Metall Technik, Buehl (Federal
Republic of Germany).
Total investment: US\$ 2.3 million.

New York 6.2. Manufacture of Batteries.
No further information available.

Zurich 6.3. Forging Plant.
Sponsored by Malaysian Investment Centre in co-operation
with FDC (Switzerland).
Total investment: US\$ 2.3 million.

Vienna 6.4. Electric Typewriter Cassettes.
No further information available.

II. INDUSTRIAL INVESTMENT PROJECTS PRESENTED AT INVESTMENT PROMOTION MEETINGS

1. UNIDO/FAO Joint Meeting to Promote Investment in Selected Food Processing Industries (Amsterdam, 1974)

Malaysia

Project Title	Annual Capacity (tons)	Total Investment (US\$ million)	Proponent
Palm oil processing	30,000	2.7	Perak State Corp.
Sugar Refinery	12,320	13.6	Perak State Corp.
Edible Oil Products	59,000	2.5	Hume Industries
Palm Kernel Processing	17,700	2.6	Miniyak Berjaja Sendirian
Fractionation of Palm Oil	28,950	2.4	Kepong Berhad

2. UNIDO Investment Promotion Meeting for Sri Lanka (Colombo, October 1981)

Project Title

Fruit canning factory	Manufacture of instant tea
Manufacture of tea bags	Baby food
Production of coir mats	Coir rugs matting and carpets
Coir yarn	Tannery
Leather products	Footwear
Rubber-soled shoes	Dye plant
Timber processing	Straw board
Suitcase cardboard	Printing of paper-board cartons
Activated carbon production	Minerals development
Manufacture of oleoresins	Fuel logs from agro-waste
Manufacture of rubber tyres	Production of rubber gloves
Manufacture of moulded rubber	Rubber sheeting
Rubber floor tiles	Rubber-based products
Manufacture of PVC pipes	Water filters
Activated carbon	Furfural production
Essential oils	Concrete pipes
Sanitary ware	Porcelain tableware
Porcelain insulators	Aluminium doors
Handtools	Hinges and window fittings

Capacitors and resistors	Electrical components
Integrated circuits	Electrodes and carbon brushes
Fibreglass boats	Jewellery
Diamond cutting	Gem cutting lapidary

3. Industrial Investment Seminar sponsored by the Tokyo Investment Promotion Service (Tokyo, April 1983)

<u>Kenya</u>	<u>Project Title</u>
Castor oil production	Pineapple and citrus fruit processing
Production of alcohol from cassava	Paper production
Integrated iron and steel mill	Machine tools production
Mathematical instruments	Precision grey iron foundry
Forge shop	Tin plate
Dry cell batteries	Activated carbon production
Felt pens	Silver recovery from photographic X-ray waste
Electric carbon brushes	Caustic soda
Carbon black	Basic pesticides
Production of barytes	Processing of diatomite
Brick and tile manufacture	Printed circuit board manufacture
Telecommunication equipment	Loudspeakers production
Blanket weft yarn manufacture	Coils and transformers for radios and TV-sets

4. UNIDO Regional Investment Promotion Meeting for Southern African Countries (Lusaka, 1984)

<u>Swaziland</u>	<u>Project Title</u>
Vegetable dehydration plant	Tobacco processing plant
Ceramic tableware	Foundry industry
<u>United Republic of Tanzania</u>	
Sugar cubes	Starch glucose
Baker's/fodder yeast	Lager-type beer brewery
Mineral water	Diversification of textile plant
Integration of spinning mill	Extension of CIO textile mill
Furniture industry establishment	Tissue paper
Gum resin	Calcium carbonate
Metal caps	Expansion of tool room
Modernization of textile Tanga	

Zambia

Mongu timber project	Crushed stones
Mumpilo quail	Mwinilunga cannery
Maize oil production	Milling plants
Alpha rolling mills	Cassava starch and pellets
Industrial and potable alcohol	Wine production
Spinning mill	Kenaf/jute sack making
Expansion of Zambezi paper mill	Garment manufacture
Pulp and paper plant	Photo-type-setting
Nitrogen chemicals	Pharmaceutical plant
Salt production	Extension of Moore pottery
Drugs manufacture	Rubber reclamation plant
Plastics factory extension	Glass sheet plant
Brass products manufacture	Agricultural lime
Copper wire manufacture	Kabwe die-casting works
Steel wire plant	Irrigation equipment
Transformer factory	Manufacture of motor-car filters
Manufacture of lead pencils	

III. PRE-FEASIBILITY OR OTHER PRE-INVESTMENT STUDIES EXECUTED BY UNIDO

In the following listing of studies, by country, unless otherwise indicated, the numbers following each listing refer to the UNIDO Registry file number or, if six-digit, to the computer record number in the VIC Joint Library. The footnotes indicate the officer in charge of the project at the Ministry of Industry (Kenya, Swaziland, Zambia) or the former counterpart director of INDCENTRE (United Republic of Tanzania). In the case of Sri Lanka, the official was attached to the Department of External Resources.

1. KENYA

From 1970 through 1980, the Industrial Survey and Promotion Centre, financed from UNDP funds and executed by UNIDO, was the main source for pre-feasibility and other pre-investment studies. At times, it employed up to 14 experts and consultants concurrently.

1.1. Pre-feasibility Study for Development of a Charcoal Industry, 1973. Prepared by Messrs. E.C. Collins and R. Faust, who submitted a final report with drawings for a prototype kiln. Prototype equipment was subsequently built by Mr. Faust.*
(OA 220 KEN 11)

1.2. Pre-feasibility Study for Nitrogenous Fertilizer. (1974)
In view of delays in implementation, the project was handled by an Italian team. The Tennessee Valley Authority was foreseen as a joint venture partner.*
(OA 220 KEN 12)

1.3. (a) Mr. G. Lanzler, expert attached to the Industrial Survey Project, in 1969 prepared a pre-feasibility study for a bicycle factory with a capacity of 30,000 units per year.
(b) He also studied the production of bandsaws and pangas in a joint venture operation with Sandvik Corp. (Sweden). Anticipated total investment was KSh 250,000.*
(c) The Survey Centre prepared in 1969 a pre-feasibility study for cassava chipping and bagging. The study was accepted and the Government requested the Centre to nominate possible partners.*

* Mr. F.M. Mwachia

- (d) Mr. O. Grane, expert attached to the Survey Centre, prepared a pre-feasibility study on the production of ethyl alcohol from molasses for use as a gasoline additive. Total investment was KE 176,000.
- (e) Mr. Grane also studied possibilities for a local production of acetic acid, caustic soda and chlorine formaldehyde for a plant with an annual capacity of 11,000 tons. Further, investigations were made into: building materials production; sand and gravel excavation; stone crushing; extension of cement production; and production of lime, gypsum, plaster, concrete blocks, concrete pipes, structural clay products, asbestos cement, woodwool cement board, straw board and chipboard.*
(CA 220 KEN 8)

1.4. Pre-feasibility Study for the Development of Oilseed and Vegetable Oil Production. Prepared by Mr. A.J. Garzon-Trula, 1972. The consultant recommended the establishment of a new edible oil factory as a joint venture, to substitute imports. Estimated total investment was KE 700,000, of which KE 300,000 was equity and KE 400,000 was loans.*
(CA 420 KEN 1-6)

1.5. In May 1975, the Survey Centre submitted to the Ministry of Industry an analysis with recommendations for import substitution industries. The most prominent items were: steam-generating boilers; simple water turbines and other electricity-generating machines; agriculture cultivating machines; milling machines; light tractors; office equipment; machine tools; simple textile machines; printing equipment; food processing machines; air conditioners and refrigerators (assembly only); pumps for liquids; spraying machines; foundries; insulated cables and wires; and electrical appliances. Some of the proposals were followed up by studies:
(CA 321 KEN 15)

1.6. The Survey Centre prepared a pre-feasibility study on the erection of a plywood plant at Kericho. Foreign participation to a value of KSh 30 million was anticipated. (1974)
(CA 321 KEN 15 PT)

* Mr. F.M. Mithaa

** Mr. Ondieke

- 1.7. The Survey Centre prepared a feasibility study on the processing of local fruits and vegetables for domestic consumption and for export. Foreign participation was envisaged. Interest was shown by a Norwegian company and by OPIC (United States).* (1973)
(OA 321 KEN 15 PT C)
- 1.8. In 1977, the Survey Centre analyzed the growing availability of hides and skins in Kenya and recommended the establishment of new tanneries in suitable parts of the country. Interested foreign partners were located. Similar action was taken concerning furfural production, for which an investment agreement was considered with the Guinness Peat Group, Foster Wheeler and Escher Wyss.**
(OA 321 KEN 15 PT C)
- 1.9. In 1977, a pre-feasibility study on metallurgical industries was prepared by an expert (Mr. S.S. Gill), with particular reference to the establishment of an integrated mini steel plant; the construction of diesel engines and pumping sets; and the setting up of a mini sugar plant. Foreign partnership was sought.**
(OA 321 KEN 15 PT C)
- 1.10. The Survey Centre prepared a pre-feasibility study for the manufacture of ceramic sanitary ware. Estimated total investment was KSh 16 million.** (1972)
(OA 321 KEN 15 PT D)
- 1.11. A terminal report on the production of low-cost modular pre-fabricated wooden bridges was prepared by a UNIDO expert in timber structure engineering, Mr. J.E. Collins. The project resulted in the erection of a factory that has had great significance for other developing countries.** (1974)
(OA 321 KEN 16 PT B)
- 1.12. An expert at the Survey Centre, Mr. D.C. Munasingha, prepared a pre-feasibility study related to the development of a solar salt industry. Estimated total investment was KSh 64 million.*** (1975)
(OA 321 KEN 38)

* Mr. P.M. Muthia
** Mr. Ndiko
*** Mr. Leonard

- 1.13. In 1972/73, a pre-feasibility study - including a market study on overseas sales - was prepared by Mrs. V. Schmidli, expert in the field of wool processing. She recommended hand-weaving projects in rural areas as a contribution to Kenya's rural development programme.*
(OA 420 KEN 21)
- 1.14. In December 1974, the Survey Centre (Mr. de Voest) assisted the Government in the preparation of an investment agreement for the establishment of the Nanyuki Textile Mill. The agreement was signed by Deutsche Entwicklungsgesellschaft, the Industrial Development Corporation of Kenya, the International Finance Corporation, and David Whitehead and Sons (investor and technical manager).**
(OA 420 KEN 1-6)
- 1.15. In August 1972, a pre-feasibility study for the establishment of a fibreboard, veneer and plywood industry was prepared by Mr. L. Putna, UNIDO Special Adviser at ECA. Mr. Putna recommended a joint venture with Timsales Ltd. (United Kingdom). African Resources, New York was also interested. A preliminary agreement was reached with Timsales for the establishment of a company - Sokomo Fibreboard Ltd., in Elbourgon, Kenya.
(OA 321 KEN 5)

* Mr. Ondieke
** Mr. Wawiye

2. SWAZILAND

- 2.1. Several pre-investment studies were prepared for the establishment of the Tinkhabi tractor factory. The Tinkhabi is a light, all-purpose tractor, manufactured under Indian licence. It was envisaged for the local market and for export to neighbouring countries, mainly in East Africa. The project received strong Government support and was subsidized. The records indicate that the project is still operational. The studies were completed 1973-1980.*
(OA 321 SWA 8)
- 2.2. In 1972, Battelle, Frankfurt (Federal Republic of Germany) prepared a market and pre-feasibility study for the manufacture of valves, fittings and similar products, at a total investment of R 240,000. As a precondition for the manufacture of these items, Battelle recommended the establishment of an Export Promotion Office and the institution of a scheme for Export Credit Guarantee Insurance.*
(OA 321 SWA 11)
- 2.3. In order to discontinue exports of wattle bark as raw material to South Africa, local processing into vegetable tanning was studied and recommended by a UNIDO expert, Mr. K. Rao. In 1975, he prepared a pre-feasibility study which was accepted by the Government.*
(OA SWA 12)
- 2.4. In 1980, an expert (Mr. G.K. Elliot) studied the feasibility of manufacturing cement-reinforced particle board. The establishment of a small plant was recommended, at an investment of R 3.8 million, with a production capacity of 6,750 m³ per year, and creating about 150 jobs.
(OA 321 SWA 17)

* Mr. P.A. Batchelor

- 2.5. In 1972, Mr. M.H. Tantawi prepared a pre-feasibility study on the prospects of industrial utilization of molasses from the two CDC sugar estates. He recommended the establishment of an alcohol distillery to process the available molasses into fine-grade ethyl alcohol for export to the world market; he expected a production of roughly 15 million litres per year.*
(CA 220 SWA 5)
- 2.6. In 1972, UNIDO experts Messrs. J. Candio and Cassidi and Mr. T.G. Loo of FAO concluded a pre-feasibility study on the establishment of fruit and vegetable industries with an eye to the export market. They proposed packing, grading and pre-cooling installations. The project was open for foreign investment.*
(CA 220 SWA 9)
- 2.7. In 1974, the aforementioned Mr. Elliot (2.4.) investigated the production of bagasse panels. A foreign investor expressed interest, but no outcome can be gleaned from the records.*
(CA 220 SWA 6)
- 2.8. In 1972, an expert - Mr. D. Halliday - prepared a pre-feasibility study on the production of feedstuff from bagasse. The surplus of bagasse not used as fuel for the sugar mills was recommended for the manufacture of compounded animal feeds for the local market and for export to neighbouring countries.*
(CA 220 SWA 7)

* Mr. P.A. Batchelor

3. UNITED REPUBLIC OF TANZANIA

- 3.1. Industrial Study and Development Centre (INDCENTRE). Since its establishment, about 170 studies - mainly pre-feasibility ones - were prepared by the Centre. According to the former Project Manager, Mr. Ake Rusk, between 40 and 60 studies resulted in the setting up of local manufacturing units. Feasibility in the following major industrial fields was studied: cashew nut processing; detergents production; ceramic products manufacture; soya beans processing; locks and builders' hardware manufacture; leather shoe manufacture; electric wires and cables manufacture; wire drawing; umbrella assembly; starch production; battery production; ink manufacture; tanning; galvanizing; slotted angles manufacture; sandpaper production; bicycles manufacture; coconut processing; sugar production; soap and oil manufacturing; eucalyptus oil distillation; enamelware production; nuts, bolts and screws production; automobile tyres and tubes (production for foreign investors); galvanized water buckets and dust bins production; and leather glove making.* (1968-1976)
(CA 420 URT 1)
- 3.2. A pre-feasibility study on local malt production was prepared by Vogelbusch (Austria) in 1972. Production of 10,000 tons per year was recommended. A second factory, with a larger capacity, was also envisaged, as were enlarged supplies of raw material.*
(CA 220 URT 7)
- 3.3. In 1976, a UNIDO expert - Mr. P. Subrancian - prepared a pre-feasibility study on salt refining. The plant would be set up at Urinza, and have a capacity of 20,000 tons per year. Foreign participation by equity and management was envisaged.*
(CA 321 URT 10-3)
- 3.4. In 1980, a pre-feasibility study was prepared by a UNIDO expert, Mr. W.F. Chislett, concerning local production of leather board. The expert recommended the establishment of a small factory for the domestic market. The following companies were recommended to participate in the project with equity and management: Rudolph Schieber and Wentzel und Schmidt (Federal Republic of Germany) and Central Adamas (Italy).*
(CA 321 URT 42)

* Former counterpart directors of INDCENTRE were Messrs. Mbowe and Baronga.

- 3.5. Based on UNIDO studies, two pharmaceutical industries were recommended to the Government, one in Arusha, the other on the Island of Zanzibar. (1981)
(Project number DP/URT/80/007)
- 3.6. From 1978 through 1982, a UNIDO expert, Mr. P. Mathelot, studied the feasibility of and assisted in the establishment of a sheet glass and hollow glass factory. Recent correspondence indicates that both projects are at a very advanced stage.*
(Project number SI/77/802)
- 3.7. In 1970, INDCENTRE studied the feasibility of manufacturing wire and strip products. This project was envisaged for the private sector, with foreign participation, if possible.
(OA 420 URT 1)
- 3.8. In 1971, an INDCENTRE expert, Mr. R. Ali, made a pre-feasibility study for an iron foundry, covering markets, raw materials and production costs, including total investment.*
(OA 420 URT 1)
- 3.9. In 1979, an expert, Mr. G.W. Haase, prepared a feasibility report on the establishment of an additional brewery. The report covers raw material, equipment, investment, markets, etc.
(009596)
- 3.10. In 1970, Mohamed A. Haiderbhai and Co. studied possibilities for the extension of sawmills, covering raw materials, equipment, markets and total investment.
(002511)
- 3.11. An expert, Mr. S.B. Johansen, prepared a pre-feasibility study on the establishment of a ceramics (pottery) industry. The project was designed for rural areas. Foreign partnership was welcome. (1975)
(009820)
- 3.12. In 1971, INDCENTRE studied the feasibility of setting up a furniture factory for export markets. The study analyzed raw material and equipment needs, working capital, investment, etc.*
(002613)

* Former counterpart directors of INDCENTRE were Messrs. Mbowe and Baronga.

4. ZAMBIA

- 4.1. In 1974, a feasibility study on a wood-based distillation industry was prepared by Mr. E.F. Uhart. Products envisaged were ethyl alcohol, as an additive to gasoline, and charcoal as local fuel. The required investment was estimated at US\$ 9 million. Foreign partners under consideration were Distibois (France), Shirley (United Kingdom) and Carbon International (Federal Republic of Germany).*
- (OA 321 ZAM 24)
- 4.2. In 1974, an expert, Mr. Ahmed Khane, prepared a study on the production of various pharmaceuticals (in addition to existing production). The purpose of the study was to make recommendations on product improvement and the expansion of capacity and production programme.*
- (OA 220 ZAM 8)
- 4.3. Kienbaum Unternehmensberatung (Federal Republic of Germany) prepared a feasibility study for copper processing for semi-finished goods. The study was followed up by a second study and several evaluation reports.** (1973-1982)
- (OA 321 ZAM 4)
- 4.4. In 1979, a pre-feasibility study on the manufacture of ethyl alcohol and fodder yeast by fermentation was prepared by an expert, Mr. J. Meyrath. The project was open for foreign investment.**
- (OA 321 ZAM 26)
- 4.5. In 1971, an expert, Mr. C.L. Malhotra, prepared a pre-feasibility study on salt production, purification and iodization. The project was open for local and foreign investment.**
- (OA 321 ZAM 17)
- 4.6. In 1978, an Austrian expert, Mr. M. Schneider, recommended the establishment of a maize solvent extraction plant in his pre-feasibility study. The project was open for foreign investment.**
- (OA 321 ZAM 16)

* Mr. L. Nsama

** Mr. Kasolo

- 4.7. In 1974, a pre-feasibility study on leather goods manufacture was prepared by an expert, Mr. V.M. Gonzales. The expert submitted a full techno-economic study covering cost calculations, equipment proposals and a layout for local tanneries. The project was supplemented by the expert Mr. G. Felsner in 1984.***
(QA 420 ZAM 2-10)
- 4.8. In 1975, an expert, Mr. B. Lunden, studied the feasibility of tanning locally available hides and skins. The project was deemed viable and is open for foreign investment.
(QA 420 ZAM 2-10)
- 4.9. In 1973, an expert, Mr. B.E. Hajdu, studied the feasibility of establishing a new agricultural machinery factory. The expert's analysis of market, investment capital and equipment requirements was positive.
(004601)
- 4.10. In 1983, experts Messrs. D.R. Atkinson, T.R.W. Jarman, J. Turnball and D.J. Wholey studied the viability of a cassava processing factory. In particular, they analyzed such aspects as availability of raw material, finance, pest control and marketing.
(012323)

*** Mr. B.S. Malumo

5. SRI LANKA

5.1. Several studies and raw material tests were done to assess the viability of processing the ilmenite sands which exist in abundant quantities on Sri Lankan beaches. In 1971, the Asian Development Bank approved a loan for preparatory work of US\$ 3.5 million, as well as additional funds for technical assistance.

(QA 420 SRL 4)

5.2. In 1974, a report was prepared by the expert Mr. A.O. Schmidt on development aspects of machine tool production - starting from the steel industry. The creation of a machine tool design and development centre was recommended. Manufacturing facilities would subsequently be set up in co-operation with experienced foreign partners.

(QA 220 SRL 38)

5.3. In 1974, an expert, Mr. H.J. Rothkirch, studied possibilities for the expansion and development of the desiccated coconut industry. He recommended new financial inputs from abroad to give the needed impulse to the then stagnating industry. Funds estimated for new equipment were in the magnitude of US\$ 150,000 to US\$ 200,000.

(QA 220 SRL 33)

5.4. In 1977, an expert, Mr. D.P. Cody, studied the possibilities for furniture design and production by the Ceylon Plywood Corporation. Inter alia, he recommended co-operation with well established industries in developed countries.*

(QA 321 SRL 37)

5.5. In 1981, experts Messrs. Jalong Chen and Weizhou Du prepared a pre-feasibility report on cane and rattan processing. They made recommendations on the planting and harvesting of cane, on processing methods and on the investment necessary for the production of rattan furniture.*

(QA 321 SRL 77)

* Mr. P. Thamber

- 5.6. In 1974, an expert, Mr. R. Varghelyi, submitted a pre-feasibility study for the establishment of an aluminium rolling and extrusion plant. He recommended the establishment of two separate plants, one producing 6,000 tons per year, the other producing 8,000 tons per year, and each with an extrusion capacity of 2,000 tons per year.*
(OA 321 SRL 13)
- 5.7. In 1974, Mr. H. Kläy prepared a pre-feasibility report on electro-porcelain manufacture in the Ceramic Corporation. He proposed the types of products as well as necessary investment.
(OA 321 SRL 38)
- 5.8. In 1976, an expert, Mr. N.C. Thakurte, prepared a pre-feasibility study on the installation of a rubber plant for use in the footwear industry. He found that such a plant would be viable and essential. The study concentrated on raw material, equipment and investment requirements, as well as on employment, etc.*
(OA 321 SRL 55)
- 5.9. In 1976, an expert, Mr. K.G. Olssen, submitted a pre-feasibility study on the manufacture of cigars from local tobacco. He advised on improvements of the tobacco plantations, on manufacturing methods and on investment requirements.
(OA 321 SRL 48)
- 5.10. In 1981, Mr. Mohammed Bashir submitted a feasibility study on the manufacture of direct moulded sole footwear. He recommended that manufacture be started in the shoe factory at the Ceylon Leather Products Corporation. He analyzed such factors as raw material availability and wage and investment requirements.
(Project number SI/SRL/79/801)
- 5.11. In 1984, an expert, Mr. C.R. Francis, prepared a report on the pressure treatment of timber. The report dealt with all aspects of installation of the necessary facilities.
(Project number DP/SRL/79/053)

* Mr. P. Thamber

6. MALAYSIA

- 6.1. Under the auspices of the National Institute for Scientific and Industrial Research, a number of pre-feasibility studies - many of them for the private sector - were prepared between 1971 and 1976. The studies dealt with: production of cattle feed from pineapple waste; manufacture of tanning powder from mangrove bark; extraction of thorium; fractionation of palm oil; extraction of essential oils; establishment of a tapioca industry; production of lemongrass oil; extraction of rubber seed oil; rice husk panel board; fruit canning; establishment of a brick factory; and extraction of caffeine from tea waste.
(OA 420 MAL 1)
- 6.2. In 1971/73, detailed studies were prepared by a consultant, Mr. von Wendorff, on the establishment of wood product manufacturing facilities, with a view to local and export markets. His proposals covered: board products; veneered particle board, plywood products, moulding plants, furniture products, knock-down furniture, boat building, floating ship plant, wood wool plant, and fibreboard production.
(OA 221 MAL 14)
- 6.3. In 1972, an expert, Mr. J.A. Rant, submitted a pre-feasibility study on the manufacture of leather goods. He recommended adding a new leather goods department to the existing tannery and shoe factory at Kneitkaf in Kuala Lumpur. The expert proposed the manufacture of a number of other leather articles, bearing in mind the raw material and financial availabilities as well as the markets.
(OA 321 MAL 3-2)
- 6.4. In 1973 Mr. Rant prepared another study, dealing with the enlargement, product diversification and upgrading of the shoe factory (part of his previous assignment).
(OA 321 MAL 3-1)
- 6.5. In 1975, an Interregional Adviser, Mr. F. Sager, prepared a pre-feasibility study on the recycling of used lubrication oil. He investigated methods of collecting used oil, quantities available, and financial and market aspects.
(OA 321 MAL 38)

- 6.6. In 1975, an expert, Mr. J.W. Prins, prepared a pre-feasibility study on the enlargement of the local shipbuilding industry, including ancillary industries, through the private sector.
(QA 321 MAL 34)
- 6.7. In 1976, an expert, Mr. V.J. Golubev, made a pre-feasibility study on the production of medical electronic equipment. He suggested a private sector industry with foreign participation. The equipment produced would be sold domestically and exported.
(Project number DP/MAL/72/001)
- 6.8. In 1973, an expert, Mr. E.I. Niskanen, studied the feasibility of shipbuilding and repair (ocean-going). He made recommendations concerning construction, development of a new dock yard, infrastructure, facilities and equipment, employment, finance, economic aspects, etc.
(004639)

TERMS OF REFERENCE

FOLLOW-UP ON INDUSTRIAL JOINT VENTURE PROJECTS IN
SELECTED DEVELOPING COUNTRIES

PHASE I

1. The consultant will follow up on selected industrial joint venture projects and other long-term agreements originating from the Investment Promotion Services, Investment Promotion Meetings or direct contacts, and which were reported by the Investment Co-operative Programme as having been concluded. These agreements include, inter alia, buy-back agreements, market access, licencing, management and training, transfer of technology, sub-contracting and leasing arrangements. The following questions should be analyzed:

- (a) What is the actual status of the project?
- (b) Was the project based on a study? If so, what type of study?
- (c) Was one of UNIDO's Technical Assistance Programmes involved?
- (d) Who else financed and carried out the study?
- (e) Who financed the implementation of the project? How was it financed?
- (f) Was there any government financial or managerial support provided? If so, to what extent?
- (g) Was any bilateral support provided?

2. As far as joint venture industries are concerned, the consultant should screen all feasibility or pre-investment studies backstopped by UNIDO during the last ten years. He should identify the following:

- (a) How did the government, development institution or the industry (sponsor) make use of the study?
- (b) Was the study adequate?
- (c) Did the study lead to implementation of the project? If not, why not?
- (d) Is it planned to update the study and use it for investment projects?

ANNEX II

TERMS OF REFERENCE

FOLLOW-UP OF PRE-INVESTMENT STUDIES AND INDUSTRIAL JOINT VENTURE
PROJECTS IN KENYA, SWAZILAND, UNITED REPUBLIC OF TANZANIA AND ZAMBIA

PHASE II

1. Before going to the field, the consultant will select about 40 feasibility studies prepared by UNIDO from among the ones studied under contract CLT 84/196 and pertaining to the above countries, to determine the actual status in the field (dropped, delayed, need for up-dating, low priority, etc.).
2. Regarding the studies selected, the following questions are to be dealt with in the field:
 - (a) Did the government, development institution or other project sponsor utilize the study? If so, was it adequate?
 - (b) If the study was not utilized, what were the reasons?
 - (c) Are there plans to up-date the studies not utilized so far and, if so, what are the reasons?
3. In the countries to be covered, the consultant will follow up on industrial joint ventures and other long-term contracts concluded under the Investment Co-operative Programme, including the Investment Promotion Services, and determine the following issues:
 - (a) Present status of the project (still in preparatory stage, under construction, operational);
 - (b) Type of study used; financing of study by sources; determination of the impact of UNIDO's technical assistance programmes;
 - (c) Sources of investment financing for projects in question; determination of government support in terms of financial or managerial assistance; bilateral support, if any.
4. Regarding several selected joint ventures already in operation and representative of the country's industrial structure, the consultant will analyze the following issues:
 - (a) Was the project based on a study? If so, was UNIDO involved in the preparation of the study?
 - (b) If the joint venture is considered to be a success, what role did the study play?
 - (c) If the project was not completed, is the failure attributable to the study? If so, what were the study's shortcomings?
 - (d) Which industrial joint ventures were implemented without a study?

5. Conclusions and recommendations

- (a) What are the lessons to be learned regarding investment policy?
- (b) What is the most appropriate method of preparing investment projects?

ANNEX III

30 January 1985/rd

Industrial Investment Projects
Reported as Concluded
by the UNIDO Investment Promotion Services
1980 - 1984

Country	Title	Inv.cost US\$million	Service
Kenya	Asbestos cement pipes and roof sheets (expansion)	1.2	Brussels 1980
	Glass factory	14.1	Cologne 1980
	Flower seed plantation	0.5	New York 1980
	Sunflower hybrid seed plantation	n.a.	New York 1980
	Cassava	1.0	Zurich 1980
	Fertilizer mixing complex	2.5	Brussels 1980
	Charcoal production, oil pyrolysis and latex refining	4.0	Zurich 1982
	Tyre retreading	1.0	Zurich 1982
	Tannery	10.0	Brussels 1983
	Mosquito coils	1.3	New York 1983
	Pala Oil Refineries (rehabilitation)	3.0	Brussels 1984
Swaziland	Brake and clutch linings	4.8	Cologne 1980
	Household candles	0.19	Cologne 1983
Tanzania	Bottle-works	29.0	Brussels 1980
	Cassava processing plant	20.0	Brussels 1980
	Flat glass	30.0	Brussels 1980
	Textile complex	72.0	Brussels 1980
	Toothpaste manufacturing	2.8	Cologne 1981
	Assembly of fire vessels and construction of floating dock	4.0	Brussels 1984
Zambia	Ceramics manufacture	3.0	Cologne 1982
	Mushroom cultivation and processing	0.5	Cologne 1982
	Drugs manufacture	5.0	Brussels 1984