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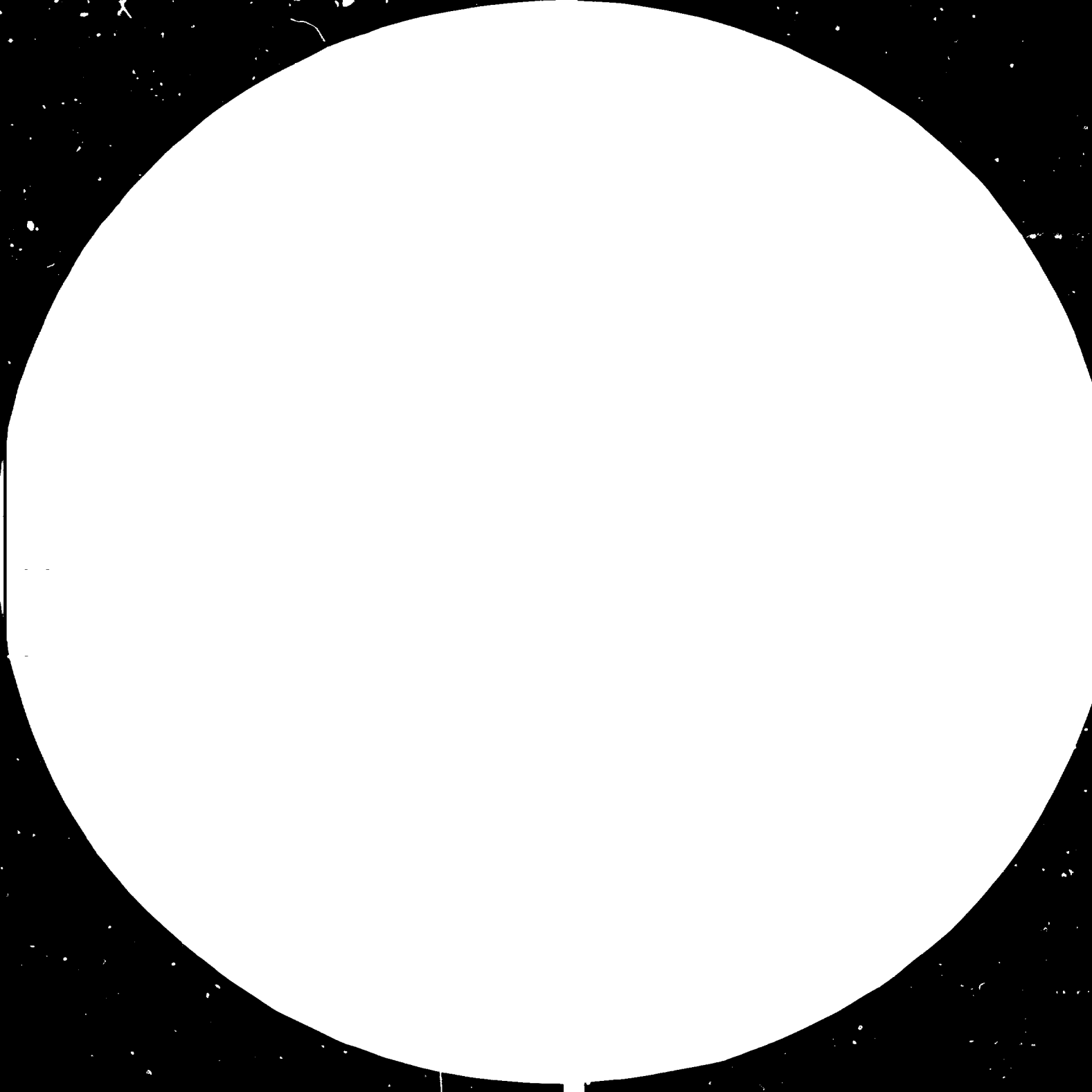
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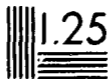
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SOLIDARITY MEETING OF MINISTERS OF INDUSTRY FOR CO-OPERATION
IN THE INDUSTRIAL DEVELOPMENT OF THE UPPER VOLTA ^{*/}

PROJECT PROPOSALS

Ouagadougou (Upper Volta), 22-25 September 1981

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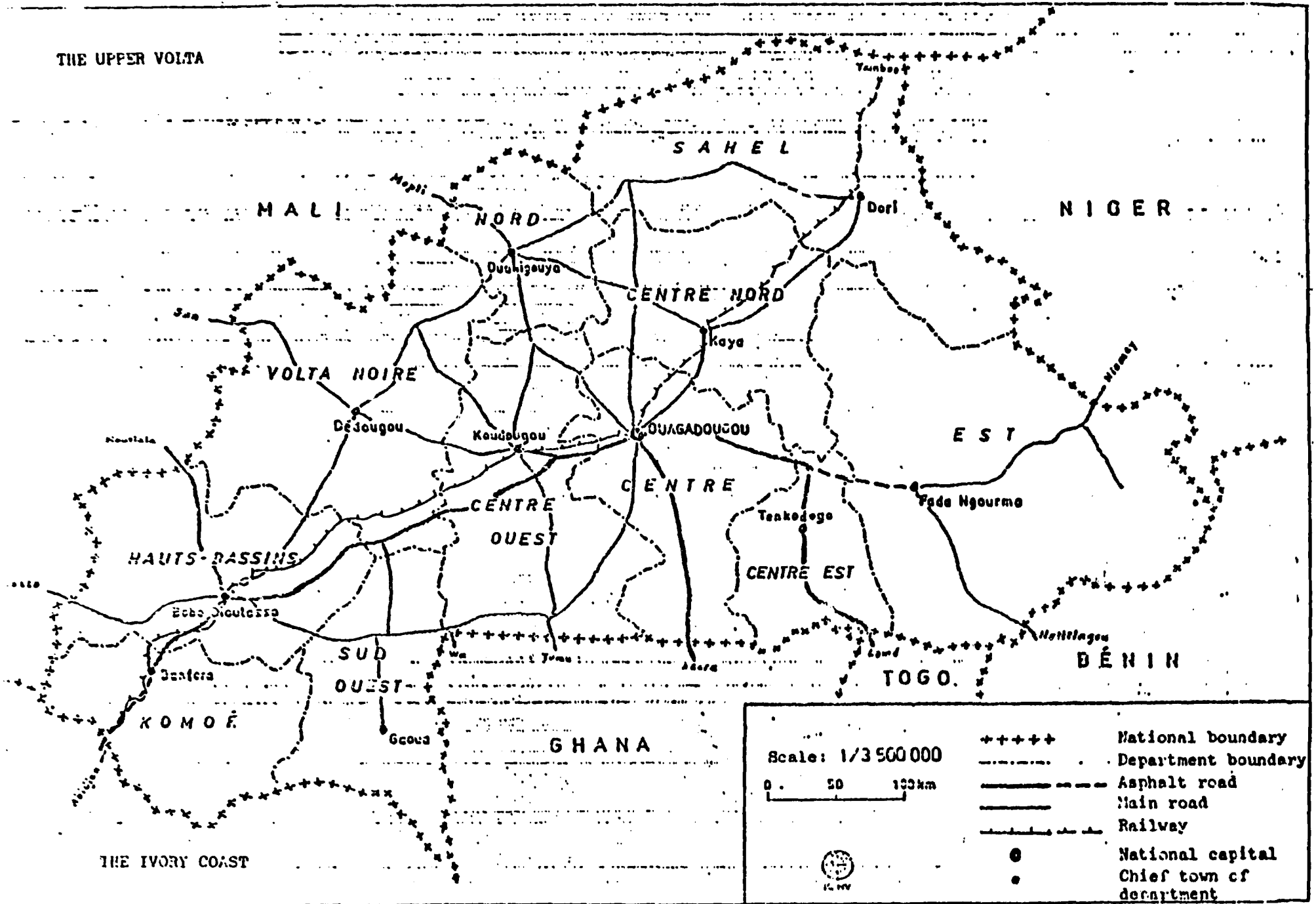
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THE UPPER VOLTA



MALI

SAHEL

NIGER

NORD

CENTRE NORD

VOLTA NOIRE

EST

OUAGADOUGOU

CENTRE

CENTRE OUEST

CENTRE EST

HAUTS-BASSINS

SUD

OUEST

TOGO

BENIN

GHANA

THE IVORY COAST

Scale: 1/3 500 000

0 50 100 km

- +++++ National boundary
- Department boundary
- Asphalt road
- Main road
- Railway
- National capital
- Chief town of department



THE UPPER VOLTA

| | |
|---|--|
| Independent republic | Since 5 August 1960 |
| Area | 274,200 km ² |
| Population | 6,218,934 inhabitants (1980) |
| Density | 23 inhabitants/km ² |
| Population growth rate | 2.06 per cent |
| GDP (prices prevailing in 1980) | CFAF 248,800,000,000 (FF 4,976 millions) |
| <u>Per capita</u> GDP (prices prevailing in 1980) | CFAF 40,000 (FF 800) |
| <u>Per capita</u> income | CFAF 32,000 (FF 640) |
| Trade balance (1979) | CFAF -47,676,400,000 (FF -953,520,000) |
| Rate of inflation (1980) | 12 per cent |
| Worker's hourly wage | CFAF 79 (FF 1.58) |
| Food deficit | 93,700 tonnes |
| Currency | CFAF 1 = FF 0.02 (fixed parity) |
| Main towns | Ouagadougou, the capital Bobo-Dioulasso Koudougou Ouahigouya Banfora |

Part 1: GENERAL INFORMATION ABOUT THE UPPER VOLTA

I. BACKGROUND INFORMATION ABOUT THE UPPER VOLTA

Located in West Africa in the loop of the River Niger, the Upper Volta has an area of 274,200 km² and is bounded on the north-east by the Republic of Niger, on the south by the Republics of the Ivory Coast, Ghana, Benin and Togo and on the north-west by the Republic of Mali.

A former French colony, the Upper Volta was united in 1904 to the colony of Upper Senegal-Niger; it became a separate colony in 1919, was divided in 1932 between the Sudan (now Mali), Niger and the Ivory Coast and did not recover its autonomy and its former frontiers until 1947. It acceded to independence on 5 August 1960.

Encircled by these six countries (Benin, Ghana, the Ivory Coast, Mali, Niger and Togo), the Upper Volta is a vast plain at an altitude of 400 m whose only vital artery is the Abidjan-Niger railway line, which links the capital Ouagadougou with the Atlantic coast over 1,000 km away.

The geographical position of the Upper Volta places it in the Sudan climatic zone (with the exception of the north of the country, which constitutes a Sahelian sub-zone), which is characterized by an alternation of dry seasons (from November to June) and rainy seasons (from June to October). Temperatures range from 17° C to 41° C according to the season, and the average annual rainfall, which is about 1,400 mm in the extreme south-west, does not exceed 500 mm in the far north, the wettest months being July, August and September.

The population, which was estimated at 6,218,934 in 1980 (a density of 23 inhabitants per km²), is made up of about 60 ethnic groups and is unevenly distributed. The growth rate is estimated at 2.06 per cent. It is an essentially rural population characterized by a large-scale exodus to the urban centres (mainly Ouagadougou and Bobo-Dioulasso) and emigration towards neighbouring countries, particularly the Ivory Coast and Ghana.

II. ADMINISTRATIVE ORGANIZATION

In order to forge closer links between the administration and the citizens, an administrative reorganization took place in 1974 which divided the country into 11 departments of varying size. These are subdivided into sub-prefectures, districts and villages.

A basically agricultural country, the Upper Volta has been able to establish structures to promote the agricultural sector. Regional development organs (organismes régionaux de développement (ORD)), have been set up, principally to perform extension work among farmers with a view to promoting a wider knowledge and use of modern farming methods. These organs cover the same geographical areas as the departments.

III. ECONOMY

Regarded by its colonizers as a reservoir of labour for neighbouring countries, the Upper Volta did not enjoy the same attention as the other neighbouring countries. Left to itself, it endeavoured to organize its own economy.

1. Agriculture and livestock

The Upper Volta's economy is based essentially on agriculture and livestock, which are the authorities' main priorities.

Agriculture is governed by the need to meet the country's food requirements and relates mainly to food-crops (rice, maize, sorghum and millet), which occupy the better part of the arable land. Cash crops never occupy more than a quarter of the arable land.

Despite all efforts to help the rural areas, agriculture remains heavily dependent on unpredictable climatic fluctuations, and the food shortage persists, as witnessed by the following table:

Trends in cereal production ^{1/}

| Year | 1978 | 1979 | 1980 |
|---------------------|--------------|------------|-----------|
| Production (tonnes) | | | |
| Millet | 404 191.60 | 430 516.02 | |
| Maize | 101 132.20 | 104 460.82 | |
| Rice | 31 505.90 | 51 382.00 | |
| Sorghum | 620 082.10 | 609 971.16 | |
| Total | 1 156 910.80 | 1 196 330 | 1 019 700 |
| Food deficit | -52 000 | -18 000 | -93 700 |

1/ Estimated. Source: Directorate for Agricultural Services

The continued expansion of the area under cash-crop cultivation (cotton, ground-nuts, sesame, etc.) in the relatively fertile regions in the west is a source of foreign exchange income for the Upper Volta. These crops are affected by unpredictable climatic fluctuations, and production is steadily falling. For example:

| | <u>1977</u> | <u>1978</u> |
|-------------|---------------|---------------|
| Cotton | 63 150 tonnes | 57 779 tonnes |
| Ground-nuts | 88 000 tonnes | 70 136 tonnes |

Livestock, which is the second source of foreign exchange revenue after agriculture, is gradually recovering from the serious drought of 1975, as the following figures show:

Estimates and projection of heads of livestock ^{2/}

| Year | 1978 | 1979 | 1980 | 1981 |
|------------|------------|------------|------------|------------|
| Production | | | | |
| Cattle | 2 653 000 | 2 706 000 | 2 760 000 | 2 815 000 |
| Sheep | 1 748 000 | 1 800 000 | 1 855 000 | 1 910 000 |
| Goats | 2 623 000 | 2 701 000 | 2 878 000 | 2 866 000 |
| Pigs | 164 000 | 169 000 | 174 000 | 179 000 |
| Poultry | 10 612 000 | 10 824 000 | 11 041 000 | 11 262 000 |

2/ Source: Directorate for Animal Husbandry

2. Road infrastructure

The Upper Volta is stepping up improvement of its road system with a view to counteracting the effects of its land-locked condition, in particular by asphaltting the roads linking it to neighbouring countries.

The Upper Volta's road system comprises:

- 4,606 km of national highways;
- 1,744 km of departmental roads;
- 2,364 km of rural roads.

There are so far only 358 km of asphalt-surfaced roads (Ouagadougou - Ivory Coast border, Ouagadougou - Ghanaian border, Ouagadougou - Togolese border, Bobo-Dioulasso - Malian border).

However, the country's vital artery remains the railway between Ouagadougou and Abidjan, which is 1,145 km in length, with 517 km in the Upper Volta.

3. Industry

The Upper Volta's industrial policy is essentially focussed on the use of local raw materials and self-sufficiency in respect of food. Out of some 50 operational industrial enterprises, there are 28 food and textile concerns accounting in 1979 for 88 per cent of investment.

The reopening of the Poura gold mine gives the country good prospects of balancing the trade account. Development of the Tambao manganese deposit and the cement factory projects will lend new impetus to the country's industrialization policy and increase its gross domestic product.

However, the major handicap is still energy, necessitating as it does enormous foreign exchange outflows for the purchase of hydrocarbons.

The table below shows the main economic indicators for the Upper Volta.

Economic indicators
(in millions of CFA francs and French francs) ^{3/}

| | 1976 | 1977 | 1978 | 1979 | 1980 (estimates) |
|---|----------------------|-----------------------|----------------------|--------------|---------------------|
| GDP (current prices) | 138 245 (2 764.9) | 168 136 (3 362.72) | 186 425 (3 728.5) | | 248 800 (4 976) |
| GDP (1970 prices) | 89 518 (1 790.36) | 87 411 (1 748.22) | 89 256 (1 735.12) | | |
| <u>Per capita GDP</u> (current prices) | 24 026 (480.37) | 28 631 (572.6) | 31 105 (622.1) | | 40 006 (800) |
| <u>Per capita income</u> | | | | | 32 000 (640) |
| Worker's hourly wage (Index-linked minimum wage - SMIC) | | | | 79 (1.58) | |
| Inflation rate | | | | 8.69% | 12% |

3/ Source: INSD

4. Trade

The Upper Volta has a policy of diversifying its trading channels, both for imports and for exports, and of promoting national small-business enterprises.

Its foreign trade is marked by a growing trade balance deficit. Nevertheless, the rate of coverage of imports by exports rose from 18.6 per cent in 1978 to 25.4 per cent in 1979.

The table below gives an indication of the trend in the trade balance.

Trade balance
(in millions of CFA francs and French francs) ^{4/}

| | 1977 | 1978 | 1979 |
|---------------|------------------------|------------------------|------------------------|
| Exports (fob) | 13 613.8 (272.27) | 9 524 (190.48) | 16 239.7 (324.7) |
| Imports (cif) | 51 356.4 (1 027.12) | 51 083.3 (1 021.6) | 63 916.1 (1 278.3) |
| Trade balance | -37 742.6 (-754.8) | -41 559.3 (-831.18) | -47 676.4 (-953.52) |

4/ Source: Directorate of Foreign Trade

The bulk of the Upper Volta's exports consist of livestock, ground-nuts, hides, cotton, etc. This situation bears out the country's suitability for agriculture and animal husbandry and justifies the measures taken to promote rural areas.

The main export products are listed in the table below:

Main export products
(in tonnes and millions of CFA francs and French francs) ^{5/}

| | 1977 | | 1978 | | 1979 | |
|--------------|----------|---------------------|----------|---------------------|----------|-------------------|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Cotton fibre | 16 836 | 6 393 (127.8) | 14 926 | 3 913 (78.26) | 19 593 | 5 706 (114.1) |
| Livestock | | 3 949.17 (78.9) | 3 536.66 | 3 536.66 (70.72) | | 4 281.5 (85.6) |
| Karite nuts | 30 612.8 | 1 304.9 (26.098) | 21 515.7 | 908.10 (18.16) | 23 694.4 | 1 107 (20.3) |
| Karite oil | 1 084.7 | 226.8 (4.53) | 1 625.16 | 317.23 (6.34) | 1 367.7 | 360.9 (7.21) |
| Sesame | 3 024.24 | 257.35 (5.14) | 1 521.6 | 71.565 (1.43) | 9 337 | 710.9 (14.2) |
| Raw hides | 636 | 459.094 (9.18) | 1 047 | 830.8 (16.6) | 1 240 | 945.24 (18.9) |

^{5/} Source: Directorate of Foreign Trade

Despite its efforts to counteract the effects of its land-locked condition, the Upper Volta is currently faced with both physical and structural problems which hamper its industrialization.

Part 2: PROBLEMS OF INDUSTRIALIZATION IN THE UPPER VOLTA

Industrial development is a necessity of our times. Every country, large or small, has to work at developing its industrial infrastructure. Industrialization, however, is not without its problems, in particular in the case of an under-developed country like the Upper Volta. Although the under-developed countries have virtually the same problems, each country nevertheless has its particularities.

The problems which the Upper Volta is encountering in its industrialization process are manifold and difficult to deal with in this document. Nevertheless, we shall try to say something about the most important ones. We shall be dividing them into three main groups:

- Problems with physical infrastructure;
- Problems with natural resources;
- Financial problems.

I. PROBLEMS WITH PHYSICAL INFRASTRUCTURE

Physical infrastructure plays a very important role in a country's industrialization process. It consists essentially of transport routes: roads, railways, waterways, air transport, etc.

1. Waterways

As a land-locked country, the Upper Volta has no sea-ways and therefore relies mainly on the ports of Abidjan and Lomé for the shipping of goods.

The country's rivers are unsuitable for river transport, for the following reasons:

- None of the rivers have been developed for transport;
- Except for the Volta Noire, the rivers are practically dry for much of the year;
- The Upper Volta is thus without one of the most economical means of transport and therefore has to turn to substitute means.

2. Rail transport

The Upper Volta does not, strictly speaking, have a railway network. There is one single-track railway which connects Ouagadougou and Abidjan and is the country's most reliable access route to the sea. This railway is 1,145 km long, and of this 517 km are in the Upper Volta.

An extension of the network is planned but will depend on development of the country's mineral resources. The plan includes:

- A connection between Ouagadougou and Tambao (349 km), with a view to exploiting the manganese ore deposits;
- An extension of this first line from Tambao to Ansango in Mali, on the left bank of the Niger river, where there is another deposit of manganese ore. This line will be 110 or 130 km long, depending on whether or not it crosses the Niger;
- Possibly a line branching off from the Ouagadougou - Tambao line at Dori, towards Téma and Niamey (245 km);
- A line from Lomé to Niamey entering the Upper Volta in the Pama region and serving the phosphate-producing areas of Arli and Kodjari on the way;
- Finally, assuming that the line just mentioned is built, a connection between Ouagadougou and Pama would give the country a second access route to the sea.

3. Road transport

The total length of the road network is 8,714 km: 2,437 km of non-classified roads and 5,323 km of rural tracks.

There are:

- 19 national roads (4,606 km, of which 858 km are surfaced);
- 18 departmental roads (1,744 km);
- 39 regional roads (2,364 km).

As can be seen, the total length of the road network is quite considerable, but the quality of roads leaves something to be desired. Only a few asphalted major routes are relevant to international communications. These are:

- The Ouagadougou - Pô - Ghanaian border route (163 km);
- The Ouagadougou - Koupéla - Bitou - Togolese border route (228 km);
- The Bobo-Dioulasso - Faramana - Malian border route (118 km).

As well as these routes there is a very poorly developed internal network.

In conclusion it can be said that means of transport in the Upper Volta are inadequate, and this constitutes a serious bottleneck for supplying enterprises with raw materials and transporting export products. Many enterprises have periodically been short of raw materials and have been compelled to halt production, often for several weeks at a time, because of delays on the railway from Abidjan. This means that industries have to finance safety-margin stocks at great expense, and allow for higher levels of working capital.

4. Industrial zones

At present there are two industrial zones at Ouagadougou and one at Bobo-Dioulasso. The problem here is to obtain funds to finance the development of the zones so as to provide promoters with suitable infrastructure for the establishment of industrial units.

II. PROBLEMS WITH RESOURCES

In this chapter we shall mainly tackle problems of raw materials, the energy problem and human resources.

The Upper Volta does not possess sufficient raw materials of its own, since these account for only 14 per cent of the raw materials processed by local industries. The engineering, metallurgical, electrical and chemical industries are totally dependent on supplies from abroad.

The country's few mineral resources have not yet been exploited. Their exploitation poses several problems:

- Exploitation of the manganese is dependent on the construction of the railway line between Ouagadougou and Tambao, for which the finance required has not yet been fully assembled;
- The phosphate is in a cut-off region with almost no road infrastructure;
- Exploitation of the limestone in the Sahel also depends on the Ouagadougou-Tambao railway line.

Thus it can be said that apart from these few deposits the country does not have any recognized mineral resources on which to base its industrial development. Hence most local products come from agriculture.

Supplying a country with abundant and cheap sources of energy is an essential factor in economic and social development, and this has a strong impact on conditions for industrialization. At the present time the Upper Volta uses only two sources of energy, namely, firewood and hydrocarbons. Therefore, the Upper Volta's problems are easy to understand when one realizes that all its hydrocarbon needs are met by imports.

Human resources are abundant and varied. A few problems arise only at the senior level, although here too substantial efforts have been made.

Another problem is the national market, a factor which limits industrial development in the Upper Volta. The country has about 6.5 million inhabitants, most with very low incomes. Consequently many industries can only be profitable in the context, for example, of the subregional market of the West African Economic Community (CEAO).

III. FINANCIAL PROBLEMS

In the Upper Volta finance, which is the driving force behind industrial development, comes almost exclusively from abroad. As a consequence industrialization is financed according to the objectives which foreign investors have set themselves.

This situation is partly explained by:

1. Low savings levels:

Low incomes to a large extent explain the low levels of local savings. The propensity to save is not very great in the Upper Volta, and this means that sufficient resources cannot be mobilized to finance large projects.

It should be added that in rural areas, where 90 per cent of the population lives, saving is more likely to be in kind, and hoarding is common. The problem is to make the people more aware in order to promote adequate cash savings.

2. Lack of appropriate financing bodies

Financing bodies in the Upper Volta finance only project implementation. However, for many projects pre-feasibility and then feasibility studies must first be carried out. It is precisely funds for these different studies which are not always available.

The result of all this is shown in the table below, which reflects 25 enterprises chosen at random:

Distribution of company capital ^{6/}

| Company capital in CFA francs | Number of enterprises | Share of the State and national private parties (%) | Share of foreign private parties (%) |
|----------------------------------|--------------------------|---|---|
| Less than 50 million | 12 | 55.27 | 44.73 |
| From 50 to 200 million | 6 | 58.1 | 41.9 |
| More than 200 million | 7 | 56 | 44 |

As can be seen an average of 43 per cent of company capital is held by foreigners, a fact which is very revealing. Furthermore it should be noted that some of the equity provided by the State is financed out of funds from abroad loaned to the Upper Volta.

Generally speaking, therefore, industrialization in the Upper Volta is encountering many thorny problems, which to some extent explain the main orientations of the country's industrial policy.

Part 3: INDUSTRIAL POLICY

I. INDUSTRIAL POLICY DURING THE COLONIAL PERIOD

With regard to industry, the colonial period was particularly notable for the total lack of any policy. Far from concerning itself with the country's future, the colonizing power primarily established a few production units to serve its own cause. And so it was the Catholic church which provided the stimulus for the first small industrial units for brick-making and carpentry, whose products were to be used for building and furnishing churches. With the advent of the Second World War the insecurity which reigned in Europe led to the establishment of some industrial production units in the colonies, and this was the case with the oil mills and the small textile workshops in the Upper Volta. Generally speaking, however, the lack of an industrial policy consciously designed to overcome the territory's many particular problems profoundly marked the colonial period, so that upon gaining independence, the Upper Volta, unlike certain other French colonies, had no industrial heritage.

II. INDUSTRIAL POLICY AFTER INDEPENDENCE

Since independence the Upper Volta has above all been trying to consolidate its economic independence, improve its trade balance, create jobs and minimize the effects of the deterioration in terms of trade.

To achieve this several more or less complementary policies will be followed:

1. Import-substitution policy

The State will encourage the setting up of production units for mass-consumption manufactured products which have hitherto been imported. This will give the country some independence vis-à-vis other countries in respect of very important products. This policy often has negative repercussions on the balance of trade, in that the raw materials are often imported, but it nevertheless contributes to the creation of jobs and value added.

2. The policy of utilization of local resources

In order to combat the deterioration in the terms of trade, the immediate consequence of which is the discouragement of national producers of local resources which until now have been exported as raw materials, the State will promote the establishment in the country of industrial units to process these local materials. This policy will help to improve the trade balance, give new impetus to domestic production of local resources and create a number of jobs and value added.

The State will invest in certain key sectors of the national economy such as leather, textiles, sugar cane, etc., bringing about an improvement in peasant incomes. However, the success of this policy is often limited by climatic fluctuations which can disrupt the production of raw materials.

3. Export policy

The constant desire to avoid a deficit in the trade balance, or even achieve a surplus, has led economic operators also to follow a line of policy designed to exploit the favourable production conditions which sometimes occur in the country. Hopes will therefore be pinned particularly on readily available materials, on the availability of cheap labour and on the lenient taxation system, which will make it possible to manufacture products which are competitive on foreign markets, at least from the point of view of production costs.

Hence, immediately after independence the country's principal industrial policy orientations were clearly defined and their objectives were to reduce the country's economic dependence, to improve the trade balance and to ensure full employment.

However, the problem of industrial development is not only one of evolving a well designed industrial policy, but depends also and especially on the resources deployed to implement this policy.

What, then, has been the situation to date regarding resources in the Upper Volta?

III. RESOURCES FOR INDUSTRIAL POLICY

(1) Institutional facilities

The institutions are:

- The Directorate for Industrial Development and Artisanry, set up in 1965 and responsible for all questions relating to industrial development and industrial and artisanal promotion.
- Since 1970 this Department has been assisted by the Office for the Promotion of Upper Volta Enterprises, whose role is to provide financial and technical assistance for Upper Volta enterprises.
- The National Development Bank, which assists in the financing of industrial projects.
- The National Deposit and Investment Bank, set up in 1975, which works to promote the participation of Upper Volta nationals in the industrialization effort.

(2) Human resources

The availability of manpower presents no problem for jobs requiring no specific skills. At this level there is even an unemployment problem to be solved, and this explains why industrial policy is oriented towards highly labour-intensive projects. As far as middle-level cadres are concerned, technical training has been stepped up and this has made possible a fairly rapid increase in the number of posts occupied by Upper Volta nationals.

As regards senior cadres, the trend towards the employment of more Upper Volta nationals is very gradual, not because of any lack of national cadres, but due to the fact that foreign partners have often insisted on expatriate cadres for project implementation.

(3) Technical resources

All industrial equipment is imported and Upper Volta nationals often have no control over its selection. In most cases it is tied to the sources of finance of projects.

(4) Financial resources

These constitute the greatest obstacle to the country's industrialization, because, faced with the inadequacy of its own resources, the Upper Volta is compelled to turn to foreign sources of funds, with the consequence that it cannot implement its industrialization policy as it sees fit. The policy of encouraging a steady flow of local savings to remedy this situation is yielding only very modest results.

(5) The market and pricing policy

The Upper Volta market, which has nearly 6.5 million consumers with very different buying powers, should easily be able to absorb local manufactured goods, which are still produced in a small range and rather limited quantities. And yet it must be said that it is difficult to sell some products in the local market. There are quite a variety of reasons for this, ranging from the limited quality of the products to the practice of international dumping, by way of fraud and consumer psychology. A national consumption policy is required to remedy this situation and foster national production. This policy should be based to a large extent on controlling the prices of manufactured products and better still on protecting these products by manipulating the various import charges to bring the sale prices of imported products into line with the prices of local products. However this practice will only be tolerated if national products provide adequate guarantees and are of a high enough quality to win the consumer's confidence. It is therefore understood that fairly rigorous control of quality and standards in respect of manufactured products will have to go hand-in-hand with this protection policy.

IV. OBJECTIVES

As we can see, the resources deployed to implement industrial policy have certain shortcomings, with the result that some redistribution is necessary in the context of the policy's objectives. Generally speaking the future industrialization strategy should aim at an integrated and self-sustaining industrial development.

To achieve this, the following must be stressed:

(1) Rural industrial development

The implementation of small decentralized industrial projects for the processing of local raw materials will make it possible to involve the rural milieu in the development process. These projects should be based on the adaptation of local technologies currently at the artisanal stage, with a view to allowing them to be exploited industrially, bringing about a great step forward for the country's industrial development. Indeed, equipment hitherto imported could then be manufactured on the spot by our artisans, provided that they received suitable additional training. Furthermore, these technologies are simple and labour-intensive.

(2) Financial participation of Upper Volta nationals in the industrialization effort

The policy of promoting savings should be pursued, and equity participation by nationals should be encouraged, enabling the country to resolve, at least partially, the problem of financing its projects. Results in this area will depend not only on educating Upper Volta businessmen to see the usefulness of profitable long-term investments, but also on strict and honest management of industrial units, which should make it possible to encourage the investors by anticipated rewards.

(3) Exploitation of minerals

The problem of financing industrial projects can only be genuinely solved if our mines are exploited to release substantial funds for financing. Ways and means must therefore be found to achieve these objectives.

(4) The search for new sources of energy

Research on inexpensive sources of energy such as solar power, hydroelectric power, and biochemical energy should be pursued in order to solve the energy problem.

(5) Water supply

The construction of strategically sited water reservoirs is necessary not only to assist the implementation of certain projects, but also to support the agricultural and animal husbandry activities, which constitute the main source of our industrial raw materials.

Part 4: INVESTMENT CONDITIONS

As part of its industrial investment promotion policy, the Upper Volta Government has instituted an array of incentives which are very advantageous to physical or moral persons wishing to invest individually or jointly with the State. These measures are contained in the Investment Code embodied in Order No. 78/010/PRES of 3 March 1978.

This very liberal code, which constitutes the essential instrument of Upper Volta industrial policy, provides for:

- A. A system under ordinary law affording general guarantees;
- B. Two types of preferential system for enterprises designated as priority undertakings:
 - * the approval system,
 - * the establishment agreement system.

These confer an entitlement to particular guarantees and to tax and customs advantages and impose certain obligations.

I. SYSTEM UNDER ORDINARY LAW

(a) General provisions

1. General guarantees

- * Regularly established foreign enterprises and their foreign directors and employees enjoy the same rights and are treated in the same way as national enterprises, investors and workers.
- * No direct or indirect nationalization, expropriation, dispossession or requisition measures may be taken except to serve the common interest and following the procedures laid down in law, after payment of fair compensation.
- * Subject to the terms of regulations in force, sums necessary to repay loans contracted abroad, dividends distributed to foreign investors and funds arising on transfer of the enterprise are transferable in the currency paid in when the original investment was made.

Furthermore, the investor may transfer his profits.

2. Article 8 of the Investment Code, Order No. 78/OLO/PRES of 3 March 1978

Under Upper Volta laws and regulations, regularly established individuals and enterprises are guaranteed the following:

- * The right to dispose freely of their property and to organize their enterprises as they see fit;
- * Free circulation of raw materials, consumable goods, finished and semi-finished products and spare parts;
- * Freedom to choose their suppliers and those providing them services;
- * Freedom to recruit and employ;
- * Freedom of trade;
- * Unrestricted access to sources of raw materials.

II. PREFERENTIAL SYSTEMS

(a) General points

1. Possible beneficiaries

Industrial enterprises which establish a new activity or develop an existing activity in a priority sector, that is one which corresponds to the objectives laid down by the plan, qualify for a preferential system.

The list of priority sectors includes almost all industrial activities and in particular covers the treatment and processing of products of vegetable or animal origin and the manufacture or assembly of mass-consumption manufactured goods or products.

2. Criteria for the application of a preferential system

The criteria taken into consideration in the examination of a request for application of a preferential system are:

- * Size of investments;
- * The contribution of the project to the economic and social development plan;
- * Job creation, professional training and the employment of Upper Volta cadres;
- * The use of raw materials, consumable goods and finished and semi-finished products of national origin;
- * Participation by Upper Volta nationals in capital formation;
- * The use of fully reliable materials and techniques;
- * Head office in the Republic of the Upper Volta.

3. Obligations of priority enterprises

These obligations are:

- * To run and manage the enterprise properly;
- * Price and quality being equal, to give priority to the use of products of national origin;

- * Professional competence and references being equal, to give priority to the employment of staff from Upper Volta;
- * To organize vocational training within the enterprise;
- * To provide statistical information on request;
- * To prepare accounts documents in a form in keeping with Upper Volta practice.

The enterprises can benefit from:

- * Assistance from public credit institutions;
- * Priority treatment in obtaining foreign currency required to purchase goods necessary for production;
- * Where appropriate, tariff protection or quota measures within the framework of the Upper Volta's international commitments;
- * Partial and temporary exemption from tax on incomes from transferable securities under the terms provided for in the Investment Code.

(b) Approval system

This is granted by decree and comprises three categories known as the A1, A2 and A3 systems. The decree lays down the conditions for applying the approval system granted.

1. A1 system

Its duration may not exceed 15 years, although it can sometimes be extended for two years to compensate for the time required to set up the enterprise.

It guarantees the stabilization of taxation at the status prevailing on the date of the approval decree.

2. A2 system

Apart from the general guarantees mentioned above and the stabilization of taxation it also provides the following advantages:

- * Exemption from customs duties and taxes, except for the statistics tax and the toll tax, on imports of production equipment, spare parts for this equipment and construction materials, with the exception of motor vehicles, hydraulic binders, paints, office equipment and air conditioning units;
- * Full or partial exemption, for a maximum of 10 years, from customs duties, except for the statistics tax and toll tax, on raw materials, consumable goods and finished or semi-finished products used in manufacture, with the exception of fossil hydrocarbons and their derivatives;
- * Full or partial exemption from local turnover tax for the first five financial years.

3. A3 system

This system is reserved for enterprises operating principally for export. It is similar to the A2 system, but in addition:

- * Imported raw materials, consumable goods, finished or semi-finished products which are used to manufacture worked or processed products and then re-exported are totally exempt from import duties and taxes (except for statistics and toll taxes) for the whole period covered by the approval;
- * The partial or full exemption from local turnover tax can be extended to cover the whole duration of the approval for those products worked or processed and then re-exported.

(c) Establishment-agreement system

(AB or agreement system)

1. Possible beneficiaries

Priority enterprises of exceptional importance for the country's development can enter into an establishment agreement with the Government. The conditions which the enterprises must fulfil to be considered as priority enterprises of exceptional importance are as follows:

- * Investment, exceeding 100 million CFA francs (not including working capital);
- * Utilization of raw materials of national origin, if present in adequate quantity and quality;
- * Creation of permanent posts for at least 50 Upper Volta wage-earners.

2. Duration and form of the agreement

The agreement cannot be concluded for a period exceeding 25 years, with the possibility of a five-year extension to compensate for time required to set up the enterprise.

It is approved by a law and must stipulate its conditions of application: duration, investor's commitments, State guarantees, advantages granted, etc.

3. Investor's commitments

As well as providing the foreign exchange mentioned above, the investor undertakes to implement a programme of investment, production, employment and vocational training and to export at normal commercial prices.

He undertakes to re-invest at least 20 per cent of his profits in the Upper Volta, either through self-financing to expand his own enterprise's operations, or by the acquiring of equity in other enterprises covered by agreements.

4. Guarantees

These concern freedom of trade, management and employment, subject to the priorities mentioned above.

5. Advantages

The tax status of the enterprise covered by the agreement may involve partial or full, temporary or permanent exemptions from certain taxes and duties.

It may also modify the rates of these taxes or replace them with new taxes. The stabilization of the tax status is guaranteed for a period up to the duration of the agreement.

III. SUBMISSION AND PREPARATION OF THE APPLICATION FILE
IN RESPECT OF APPROVAL FOR A SYSTEM PROVIDED FOR
UNDER THE INVESTMENT CODE

Order No. 00717/MCDIM/DDIA of 3 March 1978 determines the composition of the application file in respect of approval to be submitted by any enterprise wishing to take advantage of the preferential systems set out in the Investment Code.

This file, 35 copies of which must be prepared, is to be divided into four sub-files covering legal, technical, financial and economic and social aspects.

IV. APPLICATION OF THE INVESTMENT CODE

This is also defined by Decree No. 79/173/PRES/CODIM/MF of 3 March 1978, specifying the composition of the National Investments Commission, whose chairman is the Minister of Industry.

The enterprise must lodge its application file, submitted in accordance with provisions of Order No. 00171/MCDIM/DDIA of 3 March 1978 with the Minister of Commerce, Industrial Development and Mines.

The file will be studied by the members of the National Investments Commission, which will meet within 90 days following the submission of the application.

The Commission will give its opinion, with justification, on the application and the scheme which it considers most appropriate; the minutes of the meeting of the Commission will be sent to the Council of Ministers and its agreement to application of the approval scheme will be published in a decree. If the enterprise has applied for the agreement scheme, a draft agreement will be prepared by the services of the Ministry of Industry and submitted to the National Investments Commission. After study by the Commission, the agreed text will be referred to the Council of Ministers for decision.

PROJEC: 1

1. Name of the project: Establishment of a central tomato plantation
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: 600 tonnes/year of tomatoes
750 tonnes/year of onions
200 tonnes/year of maize
50 tonnes/year of soya beans
4. Location: Samandéni, on the Volta Noire
5. Estimated cost: Total cost: CFAF 442 million (\$US 2.2 million)

| | | |
|---|------|-----------|
| Land clearance, 120 hectares | \$US | 60,000 |
| Irrigation facilities | \$US | 285,000 |
| Tractors and agricultural machinery | \$US | 120,000 |
| Means of transport | \$US | 80,000 |
| Accommodation for permanent staff | \$US | 215,000 |
| Operational buildings and stocks in hand | \$US | 195,000 |
| Public services | \$US | 75,000 |
| Contingencies and price rises | \$US | 140,000 |
| Technical assistance and expatriate staff costs | \$US | 1,000,000 |

6. Objectives: The aim of the project is to establish a central tomato plantation with an area of 120 hectares in the Upper Volta, the main objectives of such a plantation being the following:
to supply to the "Savana" fruit-juice factory tomatoes covering roughly two-thirds of the factory's total capacity; to introduce new crops; to improve existing crops through research into cultivation methods suited to local conditions; to expand extension work; to provide on-the-job training for horticultural workers; and to give instruction in the management of a horticultural complex.

Tomatoes will be the plantation's main crop. Since this plant is very prone to infestation by nematodes (soil parasites which destroy roots), other plants will have to be cultivated also. The following rotation crops are planned: onions, maize, soya beans and *stylosanthes gracilis*. The following trial crops are also planned: pineapple, papaya and passion fruit.

Irrigation, strict rotation and the increase in production will necessitate the training of specialized staff. The central plantation could also act as an on-the-job training centre for gardeners.

Once the central plantation has achieved full production, a further 20 hectares can be added without any additional overhead, increasing the total area of the plantation to 140 hectares.

The central plantation will be completed in stages over a period of five years, thereby avoiding situations where the skilled staff required are not available when needed.

7. Justification:

In order to start operating the fruit-juice plant at Bobo-Dioulasso, the necessary raw materials will have to be supplied. Thus the success of the "Savana" project will depend on the availability of raw materials in sufficient quantities to ensure that production is profitable.

Moreover, the establishment of a central plantation will create other opportunities for the development of agriculture, and hence of the economy as a whole, in the Upper Volta. Some of these are: the expansion of extension work; the trying out of new crops and promotion of successful ones; and instruction in the management of large horticultural complexes. The project also responds to certain priority objectives fixed by the Government: the exploitation of local resources through their conversion into industrial products for import-substitution on the one hand and export on the other; the orientation of industry towards the production of goods to meet the needs of the population, most of whom live in rural areas; and the improvement of the trade balance.

The project also falls within a priority sector, that of agro-industries, which involves the development and industrial processing of agricultural products from both crops and livestock.

At present, of several possible sites, the most suitable seems to be one located on the outskirts of Samandéni on the Volta Noire. This site is attractive not only from the horticultural point of view (soil characteristics, etc.) and the economic one (factory at a reasonable distance), but in particular because the local population is willing to co-operate by supplying the required land.

8. Benefit:

Job creation is obviously one important aspect of the project, particularly for the rural population, to whom it will bring additional income - all the more as the crops will be cultivated outside the traditional agricultural

season. The central plantation will employ 45 people, including 30 cadres and 15 permanent workers, for maintenance of buildings and crops. In addition, the plantation will be capable of employing 300 workers on a daily basis.

It will be possible to include a larger section of the rural population than hitherto and to interest the peasants in tomatoes and new crops.

9. Request:

The Upper Volta Government would require financial aid and/or technical assistance from participating countries in order to implement this project. A feasibility study has already been carried out, but needs to be brought up to date.

PROJECT 2

1. Name of the project: Establishment of an onion-drying unit
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: To be determined
4. Location: To be determined
5. Estimated cost: Phase I: feasibility study: \$US 75,000
Phase II: to be determined on the basis of the feasibility study
6. Objectives: Phase I: to carry out a feasibility study relating to the choice of site, optimum production conditions, the establishment of machine specifications, etc.

Phase II: to establish an industrial onion-drying unit in a centre where the agricultural production of onions meets both quantitative and qualitative standards. The standards for processing, packing and exportation must ensure absolute hygiene and high quality.
7. Justification: Market gardening in the Upper Volta is expanding rapidly. The agricultural production of onions, which is increasing annually, can be developed still further, but will exceed the amounts required for local consumption and current levels of export to neighbouring countries. A project aimed at the industrial utilization of agricultural raw materials could yield very satisfactory results in the case of onions.

In addition to being simple and economical, an onion-drying plant could also be used for other products such as garlic, carrots, etc. Dried onions are in great demand on the European market, hence the idea of exporting them to Europe.

Onion production in the Upper Volta in 1976 was 11,472 tonnes.
8. Benefit: The operation of an industrial unit of this type would bring about a greater inflow of foreign exchange, thereby improving the country's trade balance. The project would give rise to approximately 50 permanent jobs.

9. Request:

The Upper Volta Government would require financial aid amounting to \$US 75,000 or technical assistance for the preparation of a feasibility study. If the results of this study are conclusive, financial aid and/or technical assistance would subsequently have to be provided for implementation of the project.

PROJECT 3

1. Name of the project: Establishment of an agro-industrial complex for maize production and processing in the Upper Volta
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: 15,000 tonnes/year of maize
4. Location: Bobo-Dioulasso

| | | <u>Millions of</u> <u>US dollars</u> |
|--------------------|---|---|
| 5. Estimated cost: | Total cost: CFAF 5,279 million | 26.4 |
| | (a) <u>Agricultural production:</u> | <u>21.4</u> |
| | - Land clearance, subsciling, tracks | 3.1 |
| | - Buildings | 1.8 |
| | - Storage and drying of maize | 3.2 |
| | - Equipment, furniture and vehicles | 13.3 |
| | (b) <u>Industrial production:</u> | <u>5.0</u> |
| | - Land and buildings | 1.6 |
| | - Equipment, machines, furniture and vehicles | 2.8 |
| | - Other investment costs | 0.6 |

6. Objectives: The establishment in Upper Volta of an integrated complex for the production and industrial processing of maize (and of catjang pea, a cover crop).

The establishment of a working unit covering a large area of land must be preceded by an experimental stage lasting three years. The purpose of this experimental period would be to conduct the topographical and pedological studies required for a precise definition of the area to be farmed; to develop cultivation and mechanization techniques with respect to maize and catjang pea; to draw up plans for the drying and storage of maize at the farm; and to examine the choice of location for the production units, by choosing the best sites out of the six proposed.

Implementation on an industrial scale will be carried out over a 4-year period. A plant will be built for the conversion of maize into grits for breweries in the Upper Volta and flours for human consumption (direct consumption, biscuit factories and bakeries).

7. Justification:

In 1978, the total production of maize in the Upper Volta was approximately 98,000 tonnes and has increased considerably over the past decade. In 1979, the increase was roughly 47 per cent as compared to 1972. Maize is the third most widely consumed cereal in the country, and accounts for about 10 per cent of total cereal production. The maize produced is largely intended for domestic consumption. The Government of the Upper Volta has decided to develop national production of cereals, and in particular of maize. In 1980, a techno-economic study was conducted on the following: the availability of raw materials and the scope for the development of maize production, market characteristics and demand, the various agricultural and industrial production possibilities, the definition and range of products, the general features of processing plants and the development of investment costs and work programmes for project implementation. The study was prepared with the assistance of UNIDO and forms the basis of this project.

8. Benefit:

The project aims to achieve the following:

- Improvement of conditions enabling the Upper Volta to become self-sufficient in food;
- Improvement of conditions for farming and processing of maize through industrial-scale development and the creation of new, more expansive market-economy conditions;
- Extension of optimum technical and economic conditions for maize cultivation at the farmers' level, with a view to realizing the best conditions for the supply of the product for direct food consumption;
- Creation of jobs for skilled workers;
- Substitution of processed-product imports by domestically produced ones and export of the latter to neighbouring countries.

9. Request:

The Government of the Upper Volta would require financial aid and/or technical assistance from participating countries in order to implement this project.

PROJECT 4

1. Name of the project: Establishment of a malt-manufacturing plant (malt-house) in the Upper Volta
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: 5,000-8,000 tonnes/year
4. Location: To be determined
5. Estimated cost: Phase I: feasibility study - \$US 75,000
Phase II: to be determined on the basis of the feasibility study
6. Objectives: The aim of the project is to establish in the Upper Volta a malt-manufacturing plant (malt-house) using sorghum, a local cereal. Such a plant could be set up by 1985, with an annual production capacity of 5,000 tonnes, which could be increased to 8,000 tonnes by 1990. In order to facilitate the swift and regular supply to the plant of raw materials (sorghum), it would be possible to grow sorghum on a piece of land, the size of which is still to be determined, at the location of the plant.
7. Justification: Sorghum is one of the main cereals grown in the Upper Volta and is widely cultivated throughout the country. It is also one of the Upper Volta's main staple foods. However, sufficient surpluses could be freed to supply a plant for the processing of this raw material. Furthermore, one of the Government's main industrial policies is to make maximum use of the local raw materials available.

The domestic market is already large enough to absorb whatever the malt-house produces. In 1990, the brewing industry in the Upper Volta will consume approximately 15,000 tonnes of malt, all of which is imported at present. Tests have shown that it is possible to use up to 50 per cent of sorghum malt without impairing the quality of the beer produced.
8. Benefit: This project will help to improve the trade balance by decreasing imports and will also create jobs.
9. Request: The Government of the Upper Volta would require financial aid amounting to \$US 75,000 or technical assistance for preparation of a feasibility study. If the results of this study are conclusive, financial aid and/or technical assistance will subsequently be required for implementation of the project.

PROJECT 5

1. Name of the project: Establishment of rice mills in the Upper Volta
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: 80,000-120,000 tonnes/year
4. Location: To be selected (in the paddy-rice production regions, the Sudano-Guinean region and the region of the valleys of the Volta rivers).
5. Estimated cost: Phase I: feasibility study - \$US 85,000
Phase II: to be determined on the basis of the feasibility study
6. Objectives: The aim of the project is to establish industrial units in the Upper Volta for the husking of paddy rice. These units will have to be established in the paddy-rice production zones. The production planned is as follows:
1985 - 80,000 tonnes, 1990 - 120,000 tonnes.
Half of the rice will come from irrigated areas, while the other half will be produced in the Sudano-Guinean zone, except for 10,000 tonnes produced in the area covered by the development scheme for the valleys of the Volta rivers.

It is estimated that in the irrigated areas, where mechanized cultivation methods will be used, all the paddy rice produced will be husked industrially. In the Sudano-Guinean region an increasing proportion of the paddy rice will be industrially processed.

It can therefore be expected that, by 1985, a rice mill with a capacity of 15,000 tonnes will be established in the Sudano-Guinean region and one with a capacity of 30,000 tonnes (or two of 15,000 tonnes) will be set up in the irrigated production areas. There are plans to establish units of the same capacity between 1985 and 1990. During this second period, depending on the results obtained in the region of the valleys of the Volta rivers, a rice mill with a capacity of 10,000 tonnes will have to be constructed.
7. Justification: Rice has long been one of the main elements in the diet of the Upper Volta population and its consumption, relative to other food stuffs, is increasing ever more rapidly, especially in the urban centres, where the population is growing considerably. As a result, rice production in the country is increasing and industrial husking

is proving ever more necessary. Moreover, by facilitating the work of the producer (peasant), the industrial processing of paddy rice will undoubtedly encourage the development of rice cultivation and thereby contribute to the country's self-sufficiency in respect of food.

The Upper Volta already has rice mills, but of a capacity far below the level necessary to absorb rice production in the coming years. However, their existence will have to be taken into account and it may prove necessary to establish contacts with them.

8. Benefit:

This project will contribute to the country's self-sufficiency with respect to food, will help improve the trade balance and the utilization of raw materials and will create jobs.

9. Request:

The Government of the Upper Volta would require financial aid amounting to \$US 85,000 or technical assistance for the preparation of a feasibility study. If the results of this study are conclusive, financial aid and/or technical assistance will subsequently be required for implementation of the project.

PROJECT 6

1. Name of the project: Cattle-feed manufacture
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: To be determined
4. Location: To be determined
5. Estimated cost: Phase I: techno-economic studies: \$US 215,000
Phase II: to be determined by the techno-economic studies.
6. Objectives:
 - (a) The establishment in the Upper Volta of a plant for the manufacture of cattle-feed and, if necessary, other feeds which can be used in the dry season and are derived from by-products of the sugar, grain milling and brewing industries or from any other local intermediate materials;
 - (b) The establishment of a workshop for the manufacture of medicinally supplemented nitrogenous blocks;
 - (c) The development of agriculture and pig breeding, including the rearing of day-old chicks and broiler chickens, and the production of eggs for consumption.

The techno-economic studies will have to take the following points into consideration: the determination of suitable areas for the establishment of industrial units, the evaluation of needs, the choice of sites, the supply of raw materials, the formulation of manufacturing processes, the design of the plants, investment costs, profitability evaluation, training and supervision, production capacity and programming and the timetable for project implementation.

7. Justification: The economy of the Upper Volta depends principally upon poultry-raising and livestock. Consequently, it is absolutely necessary to develop the cattle-feed manufacturing sector, which is still growing at a very slow rate. The consumption of pork and poultry for 1990 is estimated at roughly 30,000 tonnes.

The Upper Volta, one of the west African countries where livestock are most important, already exports a considerable quantity of meat to neighbouring coastal countries. This key sector of

the economy therefore merits particular encouragement and development, following the large-scale death of cattle as a result of the major drought in 1973 and 1974. Herds need to be renewed and enlarged and the quality of the meat and by-products of cattle-rearing need to be improved. The sugar industry in the Upper Volta, on the other hand, is expanding at a satisfactory rate. The by-products of this industry can be used in other branches, particularly in cattle-rearing.

8. Benefit:

By developing animal produce, it will be possible to increase exports in this sector, thereby helping to improve the country's trade balance. Other benefits resulting from implementation of such a project will be the increase in income-level for cattle-breeders and the rural population, improvement in the quality of food and the creation of jobs.

9. Request:

The Government of the Upper Volta would require financial aid amounting to \$US 215,000 and/or technical assistance for preparation of the techno-economic studies. If the results of the studies are conclusive, financial aid and/or technical assistance will subsequently be required for implementation of the project.

PROJECT 7

1. Name of the project: Sheanut-butter manufacture
2. Sponsor: Minister of Commerce, Industrial Development and Mines - Office for the Promotion of Upper Volta Enterprises (OPEV)
3. Capacity: 13,500 tonnes/year of sheanuts
(- 5,500 tonnes/year of unrefined butter)
4. Location: Ouagadougou (Kossodo)
5. Estimated cost: CFAF 780 million (= \$US 3.9 million)
including CFAF 100 million (= \$US 500,000)
for technical assistance and the training
of cadres
6. Objectives: The construction of a series of sheanut grinding
and pressing units for the manufacture and
marketing of sheanut butter.

The technical assistance required will have
two main functions: the planning and launching
of the project and the administrative, technical
and financial management of the plant.

In addition, three types of training are
required: practical, on-the-job training in
the plant; practical training outside the
plant (in particular, in other units operating
along similar lines); and on-going training
which will be provided for all the factory
workers, whatever their positions.
7. Justification: The Upper Volta's annual sheanut production
fluctuates between 35,000 and 50,000 tonnes,
making it one of the leading world producers
in this field. The domestic consumption of
sheanut butter (produced on a small scale with
an oil yield of 15 per cent) is in the order
of 8,500 tonnes/year. Industrial processing
will increase this yield threefold, greatly
improve the quality of the product and, most
important, enhance its health-giving properties.

For the moment, the harvest is principally
exported in the form of nuts. One tonne of
sheanuts corresponds to 400 kg of butter. By
establishing a sheanut-oil mill, the country
will be taking the exploitation of its natural
resources in hand.
8. Benefit: The plant's production will mainly be exported
and will give rise to 120 jobs.
9. Request: The Government of the Upper Volta would require
financial aid amounting to \$US 500,000 and/or
technical assistance in order to realize the
objectives of the project.

PROJECT 8

1. Name of the project: Vegetable-oil complex
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: 50,000 tonnes/year of oilseeds
20,000 tonnes/year of oil
4. Location: Koupela, Fada N'Gourma (Eastern ORD *)
5. Estimated cost:

| | |
|---------------------|---------------------------------------|
| Livestock section | CFAF 984 million = \$US 4,920,000 |
| Agriculture section | CFAF 2,340 million = \$US 11,700,000 |
| Equipment section | CFAF 2,640 million = \$US 13,200,000 |
| Oil mill section | CFAF 6,600 million = \$US 33,000,000 |
| <hr/> | |
| Total investments | CFAF 12,564 million = \$US 62,820,000 |

6. Objectives: The vegetable-oil complex will revolve around three main axes:
 - Development of the eastern region of the country through the cultivation of oil-bearing dry crops (sunflowers and ground-nuts) by modern farms and small family operations distributed in the neighbourhood;
 - Optimum utilization of this production with the help of an oil mill;
 - The integration of cattle-rearing with this oil production, the former being based on fodder crops grown in rotation with oil-bearing plants, and on oilcakes produced by the oil mill.

The vegetable-oil complex will be supplied by ten farms of 1,000 hectares, preferably situated in the eastern ORDs. Basic agronomic studies will be carried out to give a precise definition of the characteristics of these farms.

The farms will produce 10,000 tonnes of oilseeds (sunflowers and ground-nuts), which will be processed by a plant with a capacity of 50,000 tonnes. Additional supplies will be provided by the local peasants, who will be offered two types of incentive to take part in the project: an indicative collection price and cash settlements.

* ORD - Regional Development Agency

The oil mill will have a capacity of 20,000 tonnes/year. It will be a fairly complete agro-industrial complex, since the project includes plans ranging from the dry cultivation of sunflowers and ground-nuts through the production of oils to the use of oilcakes as cattle-feed. The sunflower and ground-nut shells will be systematically re-used as a source of energy.

7. Justification:

The Upper Volta's oilseed production is considerable and, most important, diversified (ground-nuts, cotton, sesame). In addition, growers are now spontaneously turning to soya beans and sunflower seeds, the latter being very promising because they are especially well adapted to the dry climate of some of the eastern regions of the Upper Volta. Tests conducted in Kamboinsé have yielded very promising results and have shown, in particular, that the sunflower can adapt in quite a few cases to the typical shallow and gravelly soils of the region, giving yields of 1.5 to 2.5 tonnes per hectare.

In 1978 and 1979 the oil market in the Upper Volta was as follows: cottonseed-oil production by the only oil mill in the country - 4,500 tonnes; imports (soya, oil palm, ground-nuts) - 2,000 tonnes. At least 12,000 tonnes of sheanut butter, unrefined ground-nut oil and ground-nut butter produced on a small scale are also consumed, bringing total per capita consumption in the Upper Volta to 3 kg a year.

The international oil markets are constantly growing. The neighbouring countries' markets are the Upper Volta's main trade target. Nigeria, which imports 200,000 tonnes of liquid oils a year, will probably be the main market.

With the integration of cattle production, the project would be able to export meat to such countries as Nigeria and the Ivory Coast, which at present import considerable quantities from distant countries.

A feasibility study was prepared in 1980.

8. Benefit:

The aim of the project is to enable imports of oil to be eliminated; it falls within the priorities of the Upper Volta development plan, which call for optimum utilization of local resources and their processing in the country. The project will improve the trade balance and create 600 jobs.

9. Request:

The Government of the Upper Volta would require financial aid and/or technical assistance from participating countries in order to implement this project.

PROJECT 9

1. Name of the project: Sourou sugar complex
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: 30,000 tonnes/year of sugar
4. Location: Sourou valley (north-west)
5. Estimated cost:

| | |
|---|--|
| Agricultural investments and irrigation | CFAF 5,195 million = \$US 25,975,000 |
| Industrial investments | CFAF 13,791 million = \$US 63,955,000 |
| General investments | CFAF 5,149 million = \$US 25,745,000 |
| Working capital | CFAF 500 million = \$US 2,500,000 |
| Miscellaneous and contingencies | CFAF 365 million = \$US 1,325,000 |
| <hr/> | |
| Total investments: | CFAF 25,000 million = \$US 125,000,000 |

6. Objectives: The aim of the project is to construct a sugar complex in the Sourou valley covering an area of 11,160 hectares, of which 8,000 hectares will be devoted to sugar-cane growing. The land measures 12 km in a north-south direction and 9.3 km in an east-west direction. Initially, however, only about 3,000 hectares will be developed.

The factory will have an annual capacity of 30,000 tonnes of refined, granulated sugar (10 per cent yield), with the possibility of expansion to 80,000 tonnes. The breaking capacity will be 2,000 tonnes of cane a day, with the possibility of expansion to 2,700 tonnes a day. The sugar season will last from November to May (roughly 196 days).

The sugar complex will comprise the following:

- The irrigated area under cultivation (2,500 hectares to be harvested);
- The sugar mill - a refinery with the usual auxiliary premises;
- Administrative and social buildings;
- Dwellings for cadres and the various accompanying amenities;
- General infrastructure and consequent construction work.

Production envisaged (based on refined sugar):

First season (800 hectares) : 6,400 tonnes;
Second season (2,200 hectares) : 21,800 tonnes;
Third season (2,500 hectares) : 27,500 tonnes;
Fourth season (2,500 hectares) : 30,000 tonnes.

The plantations will be renewed at the rate of 300/400 hectares a year, starting with the fifth regrowth.

7. Justification:

From 1986 onwards, when the Sourou complex comes into operation, the Upper Volta is expected to produce 65,000 tonnes of sugar (30,000 tonnes from Sourou and 35,000 tonnes from SOSUHV, the sugar mill in operation in the south-west of the country). At the same time a local consumption of 56,000 tonnes and exports of 9,000 tonnes to the member countries of the West African Economic Community (WAEC) are forecast.

The region of Sourou, which in the past was insufficiently populated because of onchocerciasis, is now habitable as a result of the campaign against this disease during the past few years. The rich soils of this region can now be rationally exploited.

The building of the sugar complex will help demonstrate the value of carrying out certain infrastructural projects needed by the department of Volta Noire to stimulate the exploitation of its potential, in particular in agriculture, and to begin the process of opening up the region. The sugar-complex project is also in line with the Government's policy aimed at self-sufficiency in food and the development and industrial processing of agricultural products.

8. Benefit:

In the social context, the project will give rise to 2,000 permanent jobs and make it possible to reduce the rural exodus considerably, and consequently will promote a sedentary way of life among the population.

9. Request:

The Government of the Upper Volta would require financial aid and/or technical assistance in order to implement this project. A feasibility study was prepared in 1978.

PROJECT 10

1. Name of the project: Utilization of sugar-industry by-products
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: To be determined
4. Location: To be determined
5. Estimated cost: Phase I: Feasibility study - \$US 55,000
Phase II: To be determined on the basis of the feasibility study
6. Objectives: The project aims to establish in the Upper Volta one or more units for processing the waste products of the sugar industry: molasses, bagasse, etc.
7. Justification: In the Upper Volta, there is at present one sugar company in operation, namely SOSUHV (Upper Volta Sugar Company), which is located in Banfora, in the south-west of the country, and has a capacity of 35,000 tonnes/year of sugar. The enterprise extracts roughly 12,000 to 15,000 tonnes of molasses a year. Bagasse production is in the order of 120,000 tonnes/year. At present all this bagasse is used as fuel for the factory boilers.

There are plans for a second sugar complex in the Sourou valley in the department of Volta Noire (see project No. 9), with a planned capacity of 30,000 tonnes/year of sugar. This sugar-mill will be capable of extracting 12,000 to 15,000 tonnes of molasses and approximately 120,000 tonnes of bagasse a year. These should be used industrially.
8. Benefit: One of the basic objectives of the Government of the Upper Volta in the field of industrialization is to make the fullest use of available local resources, including industrial and agricultural wastes. The project has been formulated chiefly with this objective in mind.
9. Request: The Government of the Upper Volta would require financial aid amounting to \$US85,000 or technical assistance for the preparation of a feasibility study. If the results of this study are conclusive, financial aid and/or technical assistance would subsequently have to be made available for implementation of the project.

PROJECT 11

1. Name of the project: Studies of the dolomitic limestones in West Volta with a view to their utilization in the production of highly hydraulic lime (natural cement)
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Upper Volta Geology and Mines Office (BUCOGMI)
3. Location: Samandeni, on the Volta Noire
4. Capacity: To be determined
5. Estimated cost: CFAF 82 million (\$US 410,000)
6. Objectives: The work will be directed towards conducting a feasibility study with a view to accelerating the building of a cement factory. It will therefore be as precise as possible and will focus on the Samandeni deposit.

The project activities should cover the following subjects:

1. Topographical studies of the areas containing dolomitic occurrences;
2. Geological studies: general geological surveys with structural analyses, detailed surveys of quantitatively and qualitatively favourable limestone areas and the prospecting of sites of products of mixing (clays, iron oxide);
3. Core drilling and digging: excavations and observation shafts; the taking of samples for analyses and treatment tests; and core drilling with a regular mesh for the purpose of measuring the precise volume of the deposit;
4. Laboratory studies: chemical analyses on diggings and core samples for the purpose of determining the percentages of the constituent elements; and trial manufacturing of natural cement;
5. Economic studies: evaluation of investment needs with respect to raw materials and equipment for a cement factory (materials, equipment, water, energy, basic infrastructure, etc.)

7. Justification:

The Upper Volta imports approximately 30,000 tonnes of cement a year. The basic products used in cement manufacture are limestone, iron oxide, aluminium and gypsum. With the exception of gypsum, which will have to be imported, these are all present in large quantities in the Samandeni region. In fact, Samandeni has roughly 15 million tonnes of dolomitic limestone.

If the 3 million tonnes of dolomitic limestone in the Souroukoudinga deposit (at a distance of 30 km) and the 22 million tonnes at Dios (at a distance of 60 km) are also considered, the reserves are sufficient for almost 200 years of quarrying at the present rate of consumption. The excellent situation of the Samandeni deposit on an asphalt road near Bobo-Dioulasso, a railway junction, makes it an extremely good target, particularly as regards transport.

With advances in technology it is now possible to manufacture cement from this type of dolomitic limestone. If the operation could get under way, it would enable the population of the Upper Volta to build low-cost dwellings. It goes without saying that this cement cannot be used in the construction of any structure which is in permanent contact with water, e.g., bridges or dams.

8. Benefit:

This project will help to improve the trade balance by reducing imports and will create jobs.

9. Request:

The Government of the Upper Volta would require financial aid amounting to \$US 410,000 and/or technical assistance from participating countries in order to carry out this project. If the results of this study are conclusive, financial aid and/or technical assistance would subsequently have to be made available for implementation of the project.

PROJECT 12

1. Name of the project: Training of the personnel required for the Tambao mine and projected cement plant
2. Sponsor: Ministry of Public Works, Transport and Town Planning - General Office for Tambao Projects
3. Estimated cost: CFAF 151 million (\$US 755,000)
4. Objectives: The purpose of the project is to obtain study and training fellowships for the training of the personnel required for the proper operation of the Tambao manganese mine and the cement plant at Ouagadougou.

(a) Tambao manganese mine

- Seven training fellowships for engineers and administrative personnel (mining engineer, geological engineer, mechanical engineer, electrical engineer, chemist, financial analyst, administrator) for a period of six months, preferably in a quarry operation;
- Eight fellowships for the training of middle-level cadres (senior technician level: driller, chemical technician, foreman for electrical systems, foreman for mechanical systems, two mine operations foremen, two ore-treatment foremen) for a period of 2 1/2 years (two years of academic study plus six months of practical training in a quarry).

(b) Ouagadougou cement plant

1. Crushing and clinker centre:

- Four training fellowships for senior cadres (electromechanical engineer, chemist, administrator, financial analyst) for six months at a crushing and clinker centre;
- Four fellowships for middle-level cadres (foreman for mechanical systems, foreman for electrical systems, two chemical technicians) for a period of 2 1/2 years (two years of academic study plus six months of training at a cement mill or a crushing and clinker centre);

2. Cement mill (working of the Tin Hrassan limestone, and production of clinker):

- Two training fellowships for senior cadres (geological or mining engineer, mechanical engineer) for a period of six months at a quarry producing limestone used for cement;
- Three training fellowships for middle-level cadres (mine operations foreman, foreman for electrical systems, foreman for mechanical systems) for a period of 2 1/2 years (two years of study and six months of training in a cement mill).

5. Justification:

In the north-eastern area of the Upper Volta, there is a manganese deposit at Tambao and a deposit of cement-grade limestone at Tin Hrassan. The technical and economic studies which have been carried out with respect to these sites demonstrate that both projects are feasible, and the start of the work has been planned for 1981-1982. It is planned to build a clinker-crushing plant at Ouagadougou within a short time and to implement the Ouagadougou cement-mill project in two stages: the construction of a crushing centre and a clinker production plant.

6. Request:

The Government of the Upper Volta would require financial aid in the amount of \$US 755,000 and/or technical assistance for implementation of the project.

PROJECT 13

1. Name of the project: Granite breaking and crushing
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: 40 m³/h of 0/40 materials
30 m³/h of 0/25 materials
4. Location: Bobo-Dioulasso
5. Estimated cost: Total of CFAF 244 million (\$US 1,220,000):
 - Buildings \$US 25,000
 - Machinery and equipment \$US 455,000
 - Supplementary equipment \$US 490,000
 - Rolling stock \$US 200,000
 - Initial outlay \$US 50,000
6. Objectives: The purpose of the project is to establish a granite breaking and crushing unit. As this is to be a mobile unit, there is no provision for buildings but rather for the erection of a metal hangar in which maintenance, repair and civil engineering work (raw-material feed ramp) can be carried out.

A feasibility study prepared in 1980 is available.
7. Justification: There is a potential market in the Upper Volta for the use of granite products in such projects as the building of the Ouagadougou-Tambao railway and its extension towards Niger; the surfacing of a number of roads; and the development of the building sector, which will ultimately require prefabricated units, etc. The aim of this project is to contribute to the supply of the national market, which has thus far only been serviced by a single enterprise. As a result of inadequate supplies, it has frequently been necessary to resort to traditional materials, which do not always satisfy the required strength standards.
8. Benefit: The creation of 60 jobs and the development of locally available resources.
9. Request: The Government of the Upper Volta would require financial aid in the amount of \$US 1.2 million and/or technical assistance from participating countries. Financial aid in the order of \$1 million will also be required for the project's second stage, involving the production of prefabricated elements for the construction of buildings.

In addition, technical assistance will be needed for personnel training.

PROJECT 14

1. Name of the project: Establishment of two plants to produce stabilized bricks
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: 50 tonnes of bricks per plant per day
4. Location: Ouagadougou and Bobo-Dioulasso
5. Estimated cost: Phase I: feasibility study: CFAF 30 million (\$US 150,000);
Phase II: to be determined on the basis of the feasibility study.
6. Objectives: The purpose of the project is to build in the Upper Volta two industrial units to produce bricks using existing materials. The product line will include, on the one hand, hollow standard-sized bricks (15x20x40 cm and 10x20x40 cm) and, on the other, special products for flooring, ventilation ducts, etc. The bricks may be produced using a clay-cement mixture (stabilized bricks). The feasibility study must include raw-material analyses and a study of the site selected following analysis of samples.
7. Justification: There is currently a boom in building construction activity in the Upper Volta, particularly in the urban areas. Bricks are a high-quality building material, the necessary raw materials for which are available in the country. There is a steady increase in the demand for bricks, and the country's only existing brick plant (VOLBRICERAM) is unable to meet this demand.
8. Benefit: The use of local raw materials for industrialization purposes is in line with one of the Government's basic policies, namely, the industrial utilization of available local resources. The creation of jobs and of added value are additional significant benefits.
9. Request: The Government of the Upper Volta would require financial aid in the amount of \$US 150,000 or technical assistance from participating countries for preparation of the feasibility study. If the results of this study are conclusive, there would be a subsequent need for financial aid and/or technical assistance for implementation of the project.

PROJECT 15

1. Name of the project: Particle-board plant
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: To be determined
4. Location: To be determined
5. Estimated cost: Phase I: feasibility study: \$US 50,000
Phase II: to be determined on the basis of the feasibility study
6. Objectives: The purpose of the project is to build a new enterprise for particle-board production. A feasibility study consisting of four sections must be prepared:
 - An economic and social section discussing the plant site, the expected added value and its distribution among the various economic agents playing a part in the production of the plant and a detailed study of the domestic and foreign markets;
 - A technical section covering type of machinery, technology, plant capacity and consumption of water and electric power and the number of steady jobs the plant is expected to create;
 - A financial section describing the investment burden and the method of its financing at the most favourable interest rates, operating accounts and cash-flow considerations;
 - A legal section recommending a specific legal form.
7. Justification: The Upper Volta must import most of its building materials, which are priced out of all proportion to the purchasing power of the population. Joinery wood, for example, is very expensive because it is imported.

There are virtually no forests in the Upper Volta. The country's principal wooded areas are located in the Sudano-Guinean area, but they have not been completely surveyed.

In order therefore to adapt industry to local natural conditions, the problem of the high price of these materials could be circumvented if the same products were made from materials such as millet, sorghum, maize and rice stalks, and more generally the straw found in such abundance in the plains.

Furniture made from agglomerated particle-board would afford the great advantage of providing the same qualities as wooden furniture at far less cost.

8. Benefit: The completion of this project will make it possible to improve the country's balance of payments by reducing imports, and also to create new jobs.

9. Request: The Government of the Upper Volta would require financial aid in the amount of \$US 50,000 or technical assistance for the preparation of a feasibility study. If the findings of this study are positive, there would be a subsequent need for financial aid and/or technical assistance for implementation of the project.

PROJECT 16

1. Name of the project: Production of building materials and other articles; assistance to the Industrie Voltaïque de Polyester (IVP)
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Office for the Promotion of Upper Volta Enterprises (OPEV)
3. Capacity: 19,000 articles per year
4. Location: Ouagadougou (Kossodo)
5. Estimated cost: Total of CFAF 151 million (\$US 755,000), of which CFAF 76 million (\$US 380,000) have not been secured.
6. Objectives: The purpose of the project is to establish an industrial facility for the moulding of polyester-resin-reinforced fibreglass to be used primarily in the production of construction modules, house roofing, furniture, building materials, a wide range of articles for use in agro-industry (grain storage silos, irrigation pipes, hangars, etc.), road-works articles (drainage ducts, luminous road signs), etc.
7. Justification: Since November 1978, the IVP pilot plant for the production of polyester articles has been in experimental operation in the OPEV industrial estate at Ouagadougou (Kossodo). The results achieved so far have been encouraging, and orders have been received for a number of articles, such as chairs, sinks, dining tables, plant containers, sanitary articles, modules, armchairs, children's toys, military and motorcyclists' helmets, lamps, luminous signs, etc.

By enlarging the IVP facility it will be possible to respond rapidly to emergency needs in the event of disasters (fires, floods, etc.) and to provide housing for migrant workers using specially designed and transportable housing modules which can be produced quite quickly. In this way, IVP would be able to supply the market with an inexpensive but high-quality product line.

The nearest source of raw materials (fibreglass, polyester resin, etc.) is the city of Abidjan in the Ivory Coast, where a number of European raw-material producers operate distribution channels.

A feasibility study prepared in 1980 is available.

8. Benefit: The project will create 30 jobs. Part of the production will be exported to neighbouring countries.
9. Request: The Government of the Upper Volta would require financial aid in the amount of \$US 380,000 and/or technical assistance for implementation of the project.

PROJECT 17

1. Name of the project: Underground phosphate - extraction
2. Sponsors:
 - (a) Ministry of Commerce, Industrial Development and Mines - Upper Volta Geology and Mines Office (BUVOGMI)
 - (b) Ministry of Rural Development - Directorate for Agricultural Services
3. Capacity: To be determined
4. Location: Kodjari
5. Estimated cost: Phase I: feasibility study: \$US 45,000
Phase II: to be determined on the basis of the feasibility study
6. Objectives:

The purpose of the project is, in co-operation with the country's technical services, to study the feasibility of establishing an autonomous structure for the extraction, treatment and use of the natural phosphates in the country. This study will inquire into the following:

 - The evolution of fertilizer consumption in the Upper Volta in general terms;
 - The formulation of a programme for the production, sale and distribution of phosphates in the country;
 - The planning of a crushing plant, its production capacity, location, etc.;
 - The provision of the logistical financial resources required for the operation of this structure, which might receive an initial start-up subsidy.

If the findings of this study were positive, a request would be made for the establishment of a small phosphate-production unit.
7. Justification:

The Government's agricultural policy, as defined in all its economic development plans, rests essentially on the goal of self-sufficiency in food, an objective which could be attained by increasing food-crop production through the use of fertilizers, such as those based on phosphates.

Since 1973, BUVOGMI, in co-operation with foreign technical services such as the CDF engineering office, a branch of the French National Coal Board, and GTZ, the German Technical Co-operation Office, has undertaken

studies on the phosphate deposits located in the eastern part of the country, particularly the one at Kodjari. An experimental programme for the use of crude phosphates has produced more than convincing results.

8. Benefit:

The project will enable the Upper Volta to use its phosphates for the development of its agricultural sector, while at the same time saving the foreign exchange currently being spent on the import of commercially formulated fertilizers.

9. Request:

The Government of the Upper Volta would require financial aid in the amount of \$US 45,000 or technical assistance from participating countries for preparation of the feasibility study. If the findings of this study are conclusive, technical assistance would subsequently be needed for the establishment of a phosphate-exploitation unit.

PROJECT 18

1. Name of the project: Pesticide pilot plant
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: One million litres/year of liquid products; 600 tonnes/year of powder-form products
4. Location: Bobo-Dioulasso
5. Estimated cost: Total of CFAF 159.5 million (\$US 797,500):
- | | |
|---|--------------|
| - Land and development | \$US 5,000 |
| - Buildings and civil engineering | \$US 480,000 |
| - Machinery and equipment | \$US 138,000 |
| - Office materials and laboratory equipment | \$US 11,500 |
| - Motor pool | \$US 68,000 |
| - Contingencies | \$US 70,000 |
| - Additional studies | \$US 25,000 |

6. Objectives: Establishment of a pilot plant for the formulation of pesticides specifically intended to meet the requirements of the Upper Volta.

The project's activities are to cover the following:

- Construction of the building;
- Supply, transport and installation of equipment and materials;
- Technical assistance in starting up the plant.

Pre-feasibility and feasibility studies have been prepared with the help of UNIDO and are available.

7. Justification: The economy of the Upper Volta is heavily dependent on agriculture, and it is regarded as indispensable that pesticide-use should be promoted.

Total demand for pesticides is in the order of 500,000 litres of liquid products and 250 tonnes of powdered products a year. At present, this demand is met through imports. Consumption is increasing. Any surplus in the planned production could be exported to neighbouring countries.

The powdered pesticides will be formulated from imported active ingredients and filler materials. As there are kaolin deposits, including some

outcroppings, in the Upper Volta of a composition which experts regard as suitable for most pesticides, this kaolin could be used for this purpose. Kaolin consumption would be in the neighbourhood of 300-400 tonnes a year, which is too low to justify permanent working of the sites, but kaolin could be purchased in bulk from nationals living near the deposits, thereby reducing operating costs to a minimum.

Very different materials would be required for the liquid-insecticide formulation plant, and these would have to be identified in a separate study.

3. Benefit:

The objectives of the project are:

- Import-substitution and improvement of the trade balance;
- The use of available raw materials;
- The creation of about 35 jobs.

9. Request:

The Government of the Upper Volta would require financial aid and/or technical assistance from participating countries for implementation of the project.

PROJECT 19

1. Name of the project: Production of biogas equipment
2. Sponsor: Ministry of Higher Education and Scientific Research - General Directorate for Scientific and Technological Research
3. Capacity: To be determined
4. Location: Ouagadougou
5. Estimated cost: CFAF 235 million (\$US 1,175,000)
6. Objectives: The objectives of the project are to introduce the biogas-compost route in rural areas so as to reduce the consumption of firewood and imports of petroleum products, and also to maintain soil fertility and yields through organic manuring. It is planned to set up and make operational a system for disseminating information on biogas facilities.

This system would best take the form of a national institution which would be responsible for centralizing and co-ordinating the different operations involved. The activities of an institute of this kind would be industrial in their scope, without however being specifically profit-oriented. Briefly, these activities would be to prepare site studies, to design the installations (on the basis of the availability and nature of the organic waste material and the energy requirements), to set up the installations and monitor their performance, and finally to produce standardized biogas equipment.

Project activities would include:

- Information and publicity in close co-operation with the Ministry of Rural Development and through the intermediary of the development organisms;
- Training of artisans through the arrangement of training courses in co-operation with the National Centre for the Training of Rural Artisans;
- The establishment, through the agricultural credit system, of lending arrangements for the financing of biogas installations;
- The design and calculation of size of the installations, then the construction, starting-up and operation, and the training of users in their operation and maintenance.

7. Justification:

The current situation in the Upper Volta is marked in particular by an irreversible deforestation because of the over-exploitation of wood fuel resources, and by the nearly total disappearance of the fertile stratum of the soil, as a result of which there has been a considerable decline in cereal production.

It is essentially for the purpose of re-establishing the country's forestry resources and promoting the most urgently required means of ensuring self-sufficiency with respect to food that the Government has carried out research on the adaptation of biogas production and compost technology to the conditions in the country.

At present, a technique which could be widely introduced all over the Sudano-Sahelian region is being perfected and a number of demonstration facilities are already performing satisfactorily. But there still remains the task of determining the ways and means of placing this method within the reach of potential users. What is most urgently required is the establishment of an extension scheme for spreading information on this technique quickly and effectively.

8. Benefit:

The introduction of biogas technology at different levels will make it possible to reorganize the national habitat by ending the migration of live-stock and centralizing the herds, improving the conditions of sanitation and curbing a nomadism that is partly attributable to the lack of integration between agriculture and stock-raising.

9. Request:

The Government of the Upper Volta would require financial aid and/or technical assistance from participating countries for implementation of the project.

PROJECT 20

1. Name of the project: Establishment of a solar-power industry in the Upper Volta
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: 3,000 m² of solar panels a year
4. Location: Ouagadougou
5. Estimated cost: CFAF 120 million (\$US 600,000)
6. Objectives: The purpose of the project is to build a plant for the manufacture of solar energy collectors with a production capacity of two collectors per mould, for a daily total of 12 m².
7. Justification: The Upper Volta economy depends for its energy entirely on the foreign market. No deposits of either coal or oil have thus far been found in the country. All the electricity generated is produced by thermal power stations. Electricity consumption amounted to 75 million kWh in 1977 and to 100 million kWh in 1978. If growth continues at this rate - and taking into account the requirements created by an expanding population, the determination to improve living standards and the country's industrialization efforts - some 200 million kWh of electric power will be required by 1985.

On the basis of exploration contracts concluded with friendly countries, the Government is intensifying - so far without success - its search for oil throughout the country, in addition to which it has negotiated important supply agreements with the major oil-producing countries. In the area of hydro-electricity, there are plans for the construction of a dam on the Volta Noire River, but the necessary credits have not yet been secured. One single nuclear power plant would be of a size to meet the power requirements of all the Sahel countries, but because of the length of the transmission lines, the price per kilowatt would be at least double the price currently charged. Hence, the need to rely on other energy sources, such as solar power, is increasingly making itself felt. Because of its geographical location, the Upper Volta is well placed to benefit immediately from the development of high-performance solar systems, since the country enjoys exceptionally high and uninterrupted levels of sunlight the year round.

Solar energy studies and recordings conducted in the Upper Volta have indicated an energy delivery on the ground equivalent to 1,800-2,000 kWh/m²/year or, for an area of 274 million m², an annual radiation of some 450,000 billion kWh.

A feasibility study has been prepared, but requires revision.

8. Benefit:

By carrying out a project along these lines, it will be possible to avoid the devastation of the forests, especially around the towns, which consume large amounts of firewood, to alleviate the shortage of wood, to combat the rapid desertification of the country and to save on conventional sources of energy (e.g., oil and wood).

9. Request:

The Government of the Upper Volta would require financial aid in the amount of \$US 600,000 and/or technical assistance from participating countries for implementation of the project.

PROJECT 21

1. Name of the project: Storage batteries for motor vehicles and telephones
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Office for the Promotion of Upper Volta Enterprises (OPEV)
3. Capacity: 25,000 to 35,000 batteries a year
4. Location: Ouagadougou
5. Estimated cost: Total of CFAF 246 million (\$US 1,230,000):
 - Land and buildings \$US 450,000
 - Equipment and materials \$US 470,000
 - Contingencies and initial outlay \$US 310,000
6. Objectives: The purpose of the project is to set up a new enterprise to manufacture a variety of batteries for motor vehicles and the telephone system. With an installed capacity of 40,000-50,000 batteries a year, the plant is expected to produce 15,000 batteries a year initially and 25,000-35,000 when fully operational.
7. Justification: The total demand for electric storage batteries in the Upper Volta amounts to about 30,000 units a year and is currently met through imports from Europe.

The plant will be located in the Ouagadougou industrial estate, where a satisfactory infrastructure is available.

The raw materials used in manufacturing the batteries will be imported. It is expected that these materials will be exempted from duties.

A feasibility study prepared in 1979 is available.

The project falls under a socially oriented rural extension programme designed to improve communications.

One-third of the planned output will be available for export to neighbouring countries of the West African Economic Community, with the remaining two-thirds intended for domestic consumption.

3. Benefit: The project will create 50 jobs, and will in addition permit foreign exchange savings through import substitution.
9. Request: The Government of the Upper Volta would require financial assistance in the amount of \$US 1,230,000 and/or technical assistance from participating countries for implementation of the project.

PROJECT 22

1. Name of the project: Establishment of a plant to produce tin cans for foods and liquid industrial products
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: 22 million units a year
4. Location: Ouagadougou
5. Estimated cost: Total of CFAF 349 million (\$US 1,745,000):
 - Land and buildings \$US 415,000
 - Equipment and materials \$US 1,205,000
 - Transport facilities and miscellaneous \$US 125,000
6. Objectives:

The purpose of the project is to establish a plant producing four types of tin cans of shapes common in all countries and of internationally standardized capacity and dimensions: 250 grams, 400 grams, 500 grams and 1,000 grams. The cans will be used as packaging for food preserves (vegetables, fruits, milk, meat, etc., in dry, liquid, paste and powdered forms).

The production capacity of 22 million units a year will be broken down as follows: 250-gram cans - 3 million units; 400-gram cans - 4 million units; 500-gram cans - 10 million units; 1,000-gram cans - 5 million units.

For exclusively industrial use, the plant will be equipped to produce large-capacity and medium-capacity metal containers (tuns, drums, jerry cans, conical pails, etc.) for the storage and transport of liquids from one plant to another.
7. Justification: The national market is already large enough to justify the establishment of a plant of this type. In 1978, current local consumption amounted to around 400,000 1-kg cans by the UVOCAM cannery and additional smaller amounts by the SAVANA cannery. It is expected that by 1983 the two canneries together will be using 3.5 to 4 million tin cans a year.

The building of a plant to produce tin cans is central to the effort to establish and develop other food industries and enterprises, both in progress and planned.

At the present time, no tin cans are manufactured in the country; supplies are now imported from the Ivory Coast. The plant's production output is intended for the domestic market. Export sales to certain neighbouring countries such as Niger, Togo, etc. might be considered, provided that these countries establish domestic industries requiring tin cans.

The raw materials will be imported.

A feasibility study has been prepared, but it must be brought up to date.

8. Benefit: The project will make it possible to eliminate, at first gradually and later completely, the import of metal packaging. It will help to improve the balance of payments and will create 30 jobs.
9. Request: The Government of the Upper Volta would require financial aid in the amount of \$US 1,745,000 and/or technical assistance from participating countries for implementation of the project.

PROJECT 23

1. Name of the project: Production of household articles of galvanized and corrugated iron and aluminium shapes (expansion of the "Voltaire du Métal" enterprise)
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Office for the Promotion of Upper Volta Enterprises (OPEV)
3. Capacity: 215,000 articles per year
4. Location: Ouagadougou (Kossodo)
5. Estimated cost: CFAF 208 million (\$US 1,040,000), of which CFAF 14 million (\$US 70,000) are required for training of cadres.
6. Objectives: The purpose of the project is to expand the "Voltaire du Métal" (VM) enterprise so as to enable it to operate profitably. The intention is to set up a well equipped and organized workshop as the basis of a production programme ensuring the profitable operation of the enterprise, and also to provide well trained technical cadres capable of ensuring acceptable qualitative and quantitative production standards.
7. Justification: Established in 1976, VM was the first industrial enterprise to be erected, with UNIDO help, in the Kossodo industrial estate at Ouagadougou. This is a limited-liability company, 60 per cent of whose total capital of CFAF 5 million is held by a private Upper Volta promoter, with 40 per cent held by OPEV.

This enterprise, which was established on the basis of studies and plans prepared under a UNIDO project, and benefited from the assistance of several UNIDO experts during its installation and starting-up phases, has two production lines: one for galvanized sheet-iron articles (pails, watering cans, etc.), and the other for aluminium articles (cooking pots, bowls, plates, etc.).

From the outset, VM has encountered production difficulties with respect to both quality and quantity. In 1979, an industrial engineer was assigned to VM for a period of six months. This expert concluded that only the infusion of new equipment would enable the enterprise to escape from its current impasse. The competence of the staff must also be a matter of concern for VM.

The financing required for the purchase of the equipment and the technical assistance for VM's expansion has been secured.

8. Benefit: Creation of 40 jobs.

9. Request: The Government of the Upper Volta would require financial aid in the amount of \$US 70,000 or technical assistance from participating countries for the training of VM technicians.

PROJECT 24

1. Name of the project: Expansion of the PAPEC (Société Africaine de Production d'Articles en Papier et d'Emballages Carton) paperboard plant
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Office for the Promotion of Upper Volta Enterprises (OPEV)
3. Capacity: 1,500 tonnes/year of paperboard
4. Location: Ouagadougou
5. Estimated cost: CFAF 48.5 million (\$US 242,500)
6. Objectives: The principal function of PAPEC, established in 1974, is the production and marketing of paper articles and all kinds of paperboard products. The paper plant is already in operation, and, as a second phase, PAPEC plans to establish a paperboard plant to produce packaging using corrugated, and possibly ordinary, paperboard. The packaging boxes will be produced from imported rolls of paper, using simple operations, such as corrugation, slotting, printing and stapling. Production will be virtually limited to the flap-type cartons commonly known as "American boxes".

The production line will be set up in a part of the present building (958 m²), which was originally intended for this purpose. The necessary investments will be for the purchase of equipment (\$170,000) and the building of an annexed storage area for the raw materials and finished products (458 m²). As already existing structures will be used for the paperboard plant, no further investment is anticipated.

There is provision for the services, for a period of at least two years, of a foreign expert, who will be responsible for the on-the-spot training of the workers and the technical monitoring of production.

7. Justification: The establishment in the country of a number of consumer-goods enterprises has given rise to a great demand for paperboard to be used in packaging their products. Since there is no national plant in the Upper Volta engaged in the manufacture of paperboard for packaging, ever increasing amounts of this product are being imported. In these circumstances, PAPEC intends to supply the domestic market and in so doing to curb the massive imports of paperboard. Over the long term, it hopes to be able to compete with other firms in nearby markets.

8. Benefit: Creation of 25 jobs and the possibility of export to neighbouring countries.
9. Request: The Government of the Upper Volta would require financial aid in the amount of \$US 242,500 and/or technical assistance from participating countries for the starting-up of the paperboard plant.

PROJECT 25

1. Name of the project: Establishment of a paperboard packaging plant
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Office for the Promotion of Upper Volta Enterprises (OPEV)
3. Capacity: 3,500 tonnes (5,850,000 m²) a year
4. Location: Bobo-Dioulasso
5. Estimated cost: Total of CFAF 862 million (\$US 4,300,000):
 - Land and buildings \$US 1,600,000
 - Equipment and materials \$US 2,000,000
 - Working capital \$US 550,000
 - Pre-operational costs \$US 150,000
6. Objectives: The purpose of the project is to establish a plant to produce corrugated paperboard packaging. The plant, which is to have a capacity of 5,850,000 m² a year, will produce cartons of the following types: flap cartons (so-called "American" cartons), fixed-bottom ("automatic") cartons, and flap-closure envelopes. The planned sizes will range from a minimum of 200x200x150 (depth) mm and a maximum of 700x450x500 (depth) mm. The paperboard will be produced from kraft paper, semi-chemical paper, strawpaper for fluting and glue.
7. Justification: Corrugated paperboard can be used for the packaging of most industrial and agricultural products. The project will achieve savings in respect of imports of paperboard in favour of local production of items essential for the existence and development of the country's food industries and enterprises engaged in marketing agricultural and market-garden produce.

Domestic consumption has increased from 1,013 tonnes in 1977 to 1,315 tonnes in 1978 and 1,852 tonnes in 1979. Imports from France account for 47 per cent of supplies, with 26 per cent imported from the Ivory Coast. Domestic consumption is expected to increase to 2,500 tonnes by 1982, to 2,700 tonnes by 1983, to 2,800 tonnes by 1984 and to 3,080 tonnes by 1985. Plant output will be intended primarily for the domestic market, although some export to neighbouring countries may be expected. As it will be necessary to import most of the raw materials from abroad, the possibility of processing waste materials should be studied.

A feasibility study has been prepared and is available.

8. Benefit: The project will make it possible to create 25 jobs and will help to improve the country's balance of payments and the industrial development of the region.

9. Request: The Government of the Upper Volta would require financial aid and/or technical assistance from participating countries for implementation of the project.

PROJECT 26

1. Name of the project: Semi-industrial manufacture of glass containers
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Capacity: 5,000 tonnes/year
4. Location: Bobo-Dioulasso
5. Estimated cost: Phase I: Evaluation of the deposits:
CFAF 19 million (\$US 95,000)

Phase II: Establishment of the plant:
CFAF 730 million (\$US 3,650,000), broken down as follows:

| | |
|---------------------------|----------------|
| - Land and buildings | \$US 750,000 |
| - Materials and equipment | \$US 2,900,000 |

6. Objectives: The aim of the project is to establish a glass container plant using intermediate technology. The plant will be designed with five glass-gathering outlets supplying one automatic section, three semi-automatic sections and one handwork section, with the possibility of using each of these outlets as required or desired. This plant will make it possible to meet the demand for glass containers (bottles) and to supply the market for pressed glassware (salad bowls, cups, tumblers, ashtrays, etc.). In addition, thanks to its furnace outlet for craft work, it will provide an opportunity for creativity in artistic glassmaking. Heavy fuel oil will be used to fire the melt furnace.

A feasibility study which has already been prepared by a UNIDO expert must still be supplemented by an evaluation of the selected deposits in order to determine the quantity of the sand available at two sites in the Bobo-Dioulasso region. There is also a need for research into the compositional homogeneity of the deposits and the availability in sufficient quantities of the other raw materials, such as dolomite, feldspath and kaolin.

7. Justification: In 1978-1979, the Upper Volta's annual requirement for glass containers amounted to 2,560 tonnes, all of which was imported. The projected demand for 1982 is 2,875 tonnes of bottles, 58 tonnes of jars and 80 tonnes of flacons.

The raw material situation in the Upper Volta, although not yet fully surveyed, is satisfactory and encouraging for the establishment of a

glassmaking industry. There are two deposits of sand suitable for glassmaking in the Bobo-Dioulasso region - one for clear and semi-clear glass, the other for green glass.

The plant could be built in the Bobo-Dioulasso industrial estate, which is located close to the raw-material supply sources, communication arteries and energy sources. The known dolomite deposits are too heterogeneous and are highly ferruginous, but it should be possible to find more favourable sites in the dolomitic bed underlying the region around Bobo-Dioulasso.

8. Benefit:

Implementation of this project will make possible an improvement in the country's trade balance and the economic utilization of its raw materials, and will also create jobs.

9. Request:

The Government of the Upper Volta would require financial aid and/or technical assistance from participating countries for implementation of the project. In addition, technical assistance will be required for the training of personnel.

PROJECT 27

1. Name of the project: Bottling of spring water
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Office for the Promotion of Upper Volta Enterprises (OPEV)
3. Capacity: 1 to 2.4 million bottles a year
4. Location: Dinderesso (near Bobo-Dioulasso)
5. Estimated cost: Total of CFAF 250 million (\$US 1,250,000):
 - Land and buildings \$US 375,000
 - Equipment and materials \$US 435,000
 - Technical assistance \$US 200,000
 - Contingencies \$US 125,000
 - Working capital \$US 115,000
6. Objectives: The purpose of the project is to establish a new enterprise for the bottling of spring water. The initial contemplated production is one million bottles a year, which is to increase to 2.4 million bottles in 8 to 10 years. The 1.5-litre bottles will be produced from clear PVC granules.
7. Justification: At present, spring water, a luxury item in the Upper Volta, is imported from France. The time elapsing between the placing of an order and delivery is about three months, and losses in transport are very heavy. As a result, the price is very high (CFAF 225 per bottle in 1979) and the product is imported by only a very few specialists. Despite these unfavourable factors, demand is steadily growing. It amounted to 820 tonnes in 1979, and the annual growth rate is 10 per cent. Health-related factors appear to be the principle reason for the purchase of this product.

A further possibility is the export of the product to neighbouring countries (Mali, Togo, Ghana and the Ivory Coast), where some 10 million bottles of spring water are consumed each year.

The water will be bottled at the main spring at Dinderesso, the most distant (450 metres) of the present installations of the National Water Board (ONE). For this purpose, a water-collection system fully insulated from the environment will be required. An extrusion-blower will be used to produce the bottles from clear polyvinyl chloride (PVC) granules, which will have to be imported.

A feasibility study prepared in 1979 is available.

8. Benefit:

The project is in line with the need to exploit national resources, process them locally and save on foreign exchange as much as possible. In addition, the project will create 28 jobs.

9. Request:

The Government of the Upper Volta would require financial aid in the amount of \$US 1,250,000 and/or technical assistance from participating countries for implementation of the project. As the country's current economic and social conditions make it impossible to find all the technical personnel required for the normal execution of the project, it appears advisable to seek technical assistance for the starting-up of the project. Training of cadres will also be required.

PROJECT 28

1. Name of the project: Manufacture of ball-point pens
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Office for the Promotion of Upper Volta Enterprises (OPEV)
3. Capacity: Two million units a year
4. Location: Ouagadougou (Kossodo)
5. Estimated cost: Total of CFAF 68.6 million (\$US 343,000):
 - Land and buildings \$US 90,000
 - Machinery and materials \$US 182,000
 - Working capital \$US 48,000
 - Pre-operational costs \$US 23,000
6. Objectives: The purpose of the project is to establish a new plant for the manufacture of simple ball-point pens, with a capacity of two million units a year. It is planned to produce the bodies, heads, end pieces and caps out of plastic and to import the ball points and the ink.
7. Justification: The total annual demand for ball-point pens in the Upper Volta amounts to more than two million units. Moreover, this demand is increasing rapidly, largely because of the growing number of persons attending school and the socio-economic development of the country. At present, this demand is covered through imports from Europe and nearby countries, there being no domestic manufacturer of ball-point pens. The limited size of the national market would not justify the installation of high-capacity equipment.

Production could be doubled if exports were envisaged to neighbouring countries (with the exception of the Ivory Coast, where such a plant has already been built).

A feasibility study prepared in 1977 is available.
8. Benefit: The project will create some 15 jobs and will help to improve the trade balance by reducing imports and opening up new export possibilities.
9. Request: The Government of the Upper Volta would require financial aid and/or technical assistance for implementation of the project.

PROJECT 29

1. Name of the project: Establishment of a standardization and quality-control centre
2. Sponsor: Ministry of Commerce, Industrial Development and Mines - Directorate for Industrial Development and Artisanry
3. Location: Ouagadougou
4. Estimated cost:
 - (a) Study phase: CFAF 15 million (\$US 75,000);
 - (b) Operational phase: CFAF 400 million (\$US 2 million), with allowance for modifications as a result of the study.
5. Objectives:

The purpose of the project is to establish a centre for the standardization and quality control of domestically manufactured or imported industrial products. The project will be carried out in two phases:

 - (a) Study phase: review of the current situation with regard to standardization and quality control in the country, evaluation of the country's requirements in this area, formulation of a system for the organization of standardization, assistance in the application of legal provisions requiring industrialists to subject their products to quality control, classification by order of priority of the products to be controlled, determination of requirements in respect of the most urgently needed test equipment, survey of the types of testing to be performed by degree of complexity and identification of documents pertaining to standardization and quality control;
 - (b) Operational phase: establishment of the standardization and quality-control centre, including the buildings, an adequately equipped quality-control laboratory and a programme for the training of engineers specializing in standardization, laboratory assistants, etc.
6. Justification: Although the Upper Volta is experiencing accelerating industrial growth, it remains one of the few African countries which, because it lacks adequately equipped facilities, has no standardization or quality-control programmes.

According to a Government decree, the Directorate for Industrial Development should play a role in the quality control of industrial products before they reach the market and the regulation and standardization of industrial products. So far, this task has been made difficult by the lack of material and human resources. In order to carry it out successfully, personnel familiar with quality-control methods and suitable tools for standardization and control would have to be available.

7. Benefit:

Given the magnitude of consumption of locally manufactured and imported products, a centre of this kind is urgently needed, not only to protect the consumer, but also to help manufacturers achieve greater profitability in their operations and better product quality.

8. Request:

The Government of the Upper Volta would require financial aid and/or technical assistance from participating countries for implementation of the project.



