European Economic Community

Directorate General for the Development of Overseas Countries

Department of Development Surveys

POSSIBILITIES FOR THE INDUSTRIALISATION OF THE ASSOCIATED AFRICAN AND MALAGASY STATES

Synoptic Report

C O N T E N T S

the creation of new industries of varying importance or has on file plans for expansion or for the establishment of new industries. On the other hand, the Associated States are becoming ever more alive to their need for co-ordinated effort and organisation on a pluri-national scale if they are to achieve industrial development and, with this end in view, they have set up regional bodies to compare and debate national interests.

It was these special considerations which prompted the Commission to envisage a programme of general examination of the possibilities for industrialisation in the AAMS, with the concrete aim of bringing to light industrial projects liable to be realised within some five or six years.

The present survey constitutes the first stage of such a general programme. The Associated States, having been informed of the plan and consulted as to the main lines of the work contemplated, signified their entire approval of its principle and their readiness to assist its completion by all the means at their disposal.

This research programme falls within the framework of surveys laid down by Clauses 6 and 9 (paragraph C) of Protocol No. 5 appended to the Yaounde Convention and dealing with general technical co-operation. The programme was unanimously approved by the EDF Committee meeting of 25th March 1965 and finally passed by the Commission on 5th April 1965.

The progamme was carried out by three teams of independent experts working under the control of the competent departments of the Commission from October 1965 to December 1966. The greater part of the experts' reports were handed in in January 1967 but in view of their bulk it was thought desirable to prepare the synopsis herewith.

Section I represents a brief outline of the role to be played in development by industrialisation and defines the aims as well as the methodology of the investigation which were laid down by the Commission and constitute the framework of the experts' research.

Section II presents the balance sheet of the AAMS's achievements in industrialisation to date.

Section III summarises the experts' analysis of the economies of the countries in their area as well as their suggestions as to the course on which industrial policies should be set and then very succinctly puts forward the investment projects they recommend. Although these projects

were examined in some detail, the experts' work does not of course absolve eventual developers, be they public or private, from more searching investigation before deciding on concrete investment.

The experts called in by the Commission did not represent either the member countries of the EEC or the Commission itself. Both their reports and the synopsis made of them by departments of the Commission therefore only express the opinions and conclusions of these experts.

SECTION I

THE RESEARCH PROGRAMME

I. Industrialisation and development

1) Industrialisation is one of the main avenues towards economic growth and social progress for the AAMS as for all developing countries.

Empiric observation shows that in most countries of the world a substantial increase in the income per capita goes hand in hand with the increase in the share of the national product represented by industrial production with the attendant gradual change in the foreign trade structure of these countries; at the same time, the share of revenues taken by agriculture and other primary activities tends to decrease. There are of course some exceptions to this general rule but they only concern a small number of countries whose prosperity is founded on some extreme agricultural specialisation or who have been blessed by nature by considerable natural resources such as oil or other mineral wealth.

Research has confirmed this impression: the present day processes of economic development would seem to involve a gradual increase in manufacturing industry as a share of the national income with a simultaneous decrease in the share represented by primary production (agriculture and mining).

2) These empiric findings agree with the conclusions drawn from the economic analysis.

Production and exports in the developing countries, and in particular the AAMS, are based on primary activities: agriculture, forestry and mining. The rate of economic growth for most of these countries depends to a great extent on the rate of growth of their exports whose principal buyers are the industrialised countries. But the developed countries' demand for primary products increases only slowly: there is a relative decrease in the consumption of food products as individual incomes rise; there is competition from synthetic products, savings on materials consumed per unit produced as a result of technological progress; organisation of agricultural markets, etc.

Restricting the developing countries to the province of primary or only crudely processed products would therefore condemn them to a relatively slow rate of growth incompatible with the targets of accelerated growth they have set themselves.

Not only would the increase in exports give inadequate impetus to

the national product and revenue, but the slow expansion in export income would limit the ability to import the investment goods needed to develop production capacity, while at the same time the static incomes would preclude any increase in the local rate of saving, especially where the initial levels of income per capita are low.

External demand for primary products being insufficient to produce an adequate growth rate in many of the developing countries, the only way open to them is either to develop the export of goods in rapidly increasing international demand (i.e. mostly manufactured goods), or to develop production for the home market and replace certain classes of imported goods by domestic products.

In either case, the imperative demand on developing countries is for diversification of their production.

Such diversification must occur first of all in the primary sector, in particular in agriculture. However, the number of crops whose introduction or extension is still possible is often limited; as for new mining activities, they are conditional on the existence of natural resources which can be economically worked.

If therefore the economies of these countries are to rest on a broader basis, diversifaction will have to include the processing of the product of the primary activities.

3) Taken to their final conclusion, the processes of economic development imply the gradual transformation of social structures and behaviour. In this respect, industrialisation may be regarded as a particularly active agent in the modification and modernisation of traditional economies and societies.

By widening the scope for production and monetary trading to the detriment of the subsistence economy, industrialisation multiplies the links between the various sectors of the economy and increases the chances for mutual activation in these sectors. The activating powers and the ability to call forth new industries seem much greater in respect of the manufacturing industries than of agriculture. This is incidentally one of the important arguments against the developing countries accepting complete specialisation in the field of primary products.

The growing interdependence of the various sectors and the gradual

transfers of production elements to more highly productive activities result in a modification of the relative costs of the elements and, ultimately, in the emergence of new relative advantages.

Moreover, industrialisation gradually induces and accustoms the people to abandon habits of behaviour based on the traditional scale of values and to acquire the qualifications needed for the new tasks to be undertaken.

Seen in this light, industrialisation can make a very significant contribution to development, in that it helps to create gradually the qualitative prerequisites for an increasingly cumulative and autonomous growth.

4) While industrialisation is a necessary pre-condition for development it is neither a panacea nor a sufficient pre-condition.

Its attraction for the developing countries must not push out of sight the important, even pre-eminent, part which agriculture plays and will for a very long time continue to play in most of these countries and in particular in the AAMS.

This reminder is all the more necessary since some areas of the third world, where the increase in agricultural production failed to keep pace with the increase in population, have become progressively less able to feed their populations and are thus compelled to use precious foreign currency to make up food deficiencies.

Such conditions obtain in some of the AAMS although, by and large, nutritional problems are not so acute there as in some Asian countries. While therefore the nutritional balance sheet of the AAMS as a whole is relatively satisfactory, there are nonetheless some regional imbalances and some increasing needs, the remedying of which are further difficulties in the path of economic development.

No satisfactory economic growth can be achieved where agriculture is static and yet represents a very substantial proportion of the national product (1) - even when industrial production is developing rapidly - because of the small contribution made by the secondary sector to the

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(1) 42% on average over the entire AAMS

national product of developing countries. (1)

Neither can there be sustained and enduring industrial development without simultaneous rural development, since the greater part of the population lives on the land (2), often at the subsistence economy stage. By raising the monetary purchasing power of the masses, agricultural and rural development constitutes an indispensable element in the widening of internal markets and hence for expansion in the home industries. Agricultural and rural development must be achieved for other reasons also: to arrest the flight from the land, to improve the food standards of the population and the supply of food to the towns and finally to develop internal savings.

Any policy of industrialisation should therefore be closely linked with a parallel effort in view of agricultural modernisation and rural development, though no dosage, uniformly valid in every country, of the efforts to be expended in one or other direction can be laid down a priori.

5) Whatever the combination of indices used to measure the degree and rhythm of economic and social development in the developing countries over the last few years, it seems that the AAMS are, with some exceptions, among the least favoured of the third world countries.

Their needs for economic diversification and industrialisation are all the more marked since directly productive investment, traditionally in the hands of private enterprise, has decreased or remained static during recent years in many of the Associated States. On the other hand, infrastructural investment which is productive only indirectly and in the long term, has shown a remarkable increase thanks to outside public aid. It now occupies an often preponderant place in the overall investment picture.

But this kind of situation cannot continue for long without adversely affecting the economic and financial balance of the Associated States.

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(1) 8% on average over the entire AAMS

(2) 80% on average in the AAMS

whereas their budgetary income develops more slowly because of the slow growth in productive investment (often attended by fiscal advantages granted to attract it), the charges on their budgets increase fairly rapidly in the form of expenditure on operation and maintenance of the infrastructural investment works, service on the external debts and even the exercise of their new sovereignty.

It is therefore important that this trend be reversed as quickly as possible by the resumption of adequate directly productive investment in industry as well as in the primary sector.

II. Limits and objectives of the survey

Where surveys are concerned, it has always been the Commission's main concern to arrive at operational conclusions within a reasonable time.

The survey of the prospects for industrialisation in the AAMS could therefore neither embrace all sectors at once nor be restricted to general or theoretical analyses.

As a result, concrete objectives were assigned to the experts entrusted with the investigations and definite limits set to the field of their investigations.

1) Consumer goods replacing imports

For practical reasons, the field of investigation was limited as follows:

- on the one hand, the industries based on large-scale exports were temporarily disregarded, the present survey being limited to discovering the possibilities of developing and diversifying the domestic production of goods liable to replace imported products.

- On the other hand, investigations were in principle limited to durable and non-durable consumer goods and, where necessary, to intermediary supply goods.

a) the most natural and least hazardous avenue for the AAMS

The temporary disregard of the industries based on large-scale exports does not imply any restrictive judgment by the Commission on the industrial and commercial destinies of the Associated States. Neither does the Commission lose sight of the pre-eminent past and future role of expanding exports in the economic growth of these countries: a policy of replacement of imports is not, in its view, an alternative to a policy for the promotion of exports, the latter being essential to the former.

But, since it is not possible to undertake everything at once, the Commission / chose as the first stage the policy which it considered the simplest, the

most advantageous and the least hazardous for the Associated States at their present point of development.

There is no doubt that the process of industrial development based on the replacement of imports is a very natural one which arose quite spontaneously in most of the developing countries, and, in particular, in several of the Associated States, after the second world war, keeping step with the development of the economic and social infrastructure and the creation of a solvent local demand based on the monetary revenues paid out by the modern sector of the economy.

The spontaneity of the process of replacement is largely due to the fact that investment in replacement industries is considered "safer" by business, since it respond to a form of local demand already in existence (or in the process of being created) and which it is easier to analyse and "tap" than external demand; by helping to reveal and supply local demand, imports prepare the ground for domestic production, as it were.

Further, a multiplicity of replacement investments is doubtless an excellent priming for a policy of economic diversificaion, of bringing local resources into the market, of development of the home market, the policy which the Associated States need at this point in their development. Productive investment does not act solely as a creator of new productive capacity and as a generator of additional revenues and demand when the capacity is effectively used; replacement investment will also create new openings for further investment mainly upstream but progressively also downstream and it will thus contribute in starting a cumulative process of growth and extension of the modern sector. As a result, the economic growth rate of the Associated States will no longer be related solely to their exports of primary products to developed countries. It is primarily due to a policy of replacement and of development in the home markets that many of the Latin American countries have in the last 15 years been able to achieve an economic growth well ahead of the increase in their exports.

Finally, the gradual elimination from the list of imports of those products which can be competitively manufactured locally will make possible a more rational use of the available foreign exchange. Experience has shown that investment for replacement means not so much a net saving in foreign exchange but a change in the structure of imports; while it allows a saving of currency on imports under certain headings, it also

triggers off the import of new products in the fields of consumer as well as intermediary demand.

b) consumer goods and light industry

The kind of locally manufactured products which can be substituted to imports depends, amongst other factors, on the level of economic and social development.

In the first stage, fairly representative of the present level in the AAMS, replacement industry usually concentrates on goods at consumer level - especially textiles and foodstuffs - and on assembly and packaging operations.

As the economy grows and local ability to produce more complex goods develops, the range of replacement goods widens and industrialisation gradually extends to intermediary products and capital investment goods. This is roughly the stage now reached by some of the Latin American countries.

Industrialisation in the developing countries would therefore appear to work its way upstream. This reveals, inter alia, that in the basic and intermediary industries (iron and steel, chemicals, etc.), the minimum scale is frequently such that, owing to the smallness of national markets, a fairly large number of client industries must be operative before their combined demand can justify the replacing of imports by local products.

Econometric studies show that in general, where the level of development reached is equivalent to an income of $ 100 per capita, industry produces consumer goods at the rate of 68% and investment goods at 12% only; but where the level of development has reached the equivalent of a $ 600 income per capita, investment goooods represent 35% of industrial production and consumer goods only 43%. The percentage of intermediary goods appears to vary between narrow limits.

It therefore appeared appropriate that, in the first stage, investigations should in the main cover consumer goods and light industries as well as, in some cases, intermediary goods.

2) Concerted industrial development on a pluri-national scale

While the process of replacement is a spontaneous phenomenon, it appears possible and desirable to organize and speed it within the framework of a judicious policy of replacement, which is of course only one aspect of the general development policy.

Where the AAMS are concerned, such a policy could only be profitable and efficient if inspired by a certain number of fundamental guide lines.

a) grouping of markets

The development of manufacturing industries in the AAMS may meet with greater difficulties than was the case in many Latin American or Asian countries at a comparable stage of development:

It must not be forgotten that black Africa is a huge but sparsely populated sub-Continent. The AAMS cover an area ten times that of the EEC but their population is three times less. This suggests that the problem of communications and links between neighbouring markets must often be as great as the problem of customs barriers since haulage may prove more prohibitive than customs dues.

Furthermore, the AAMS comprise 18 countries whereas their total population - roughly 60 millions - is not appreciably larger than that of a country like Nigeria. Whilst this fragmentation may be justified on the political plane, it does, in respect of economic development, have serious disadvantages which are further aggravated by the very low average level of monetary income per capita: according to the estimates available, this would appear to amount to 24,000 CFA.F. (1) for the countries in the franc area.

The diminutive scale of the national markets, resulting from the low monetary income per capita and the small number of inhabitants, seems to be the greatest obstacle to a competitive and profitable replacement industry in the Associated States.

An exiguous national market may have been no obstacle to industrialisation at the beginning of the industrial revolution in view of the rudimentary production techniques then existing; with the present day imperatives of scale production resulting from technical progress, it is no longer possible to create an industry aimed at the home market without taking into account the size of local demand.

Below a minimum level, called the "threshold", a modern production unit cannot be competitive and profitable, even if it enjoys a certain amount of protection. This so-called threshold, which varies according to sectors, is often found to be higher for intermediary goods than for manufactured items.

Where the outlets are as small as they are in the AAMS, an industrial policy of replacement can therefore only be economically and socially

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(1) The CFA.F. is linked to the F.F. and is worth 0.02 F.F. or 2 old francs

effective if it is worked out and applied on a multi-national scale, by means of co-operation between countries which feel they should organise their development jointly.

Unless the national outlets in the Asociated States are to some extent grouped together - these groups may take varying forms according to cases and be initially restricted to certain sectors - the national potential for profitable and competitive investment will prove too small and be rapidly exhausted, despite the fact that new investment contributes to an expansion of home demand; the inevitable result would be wastefulness and industrial duplication, growing national outbidding and an increasing tendency to overprotect some local enterprises rendered uncompetitive by inadequate scale or under-employment of capacity. There would then be the vicious circle of inflationary autarky, withdrawal of productive investment and gradual empoverishment in real terms.

Some of these phenomena are already becoming apparent in Africa, particularly in those areas where several states had made a start with industrialisation under a regime of economic union which then broke up as a result of political emancipation.

b) setting up medium-term regional programmes of operations

The success of an industrial policy of replacement in the AAMS postulates that the grouping of markets shall be given concrete form by the establishment of multi-national programmes which must include a group of concrete investment projects.

The economic efficacy of replacement investment - even if it is on a multi-national scale - does not depend solely on the specific qualities of the individual projects but also on their cohesion, on the way they are distributed and fit in together and thus, on the one hand, determine national specialisations and mutual exchanges and, on the other hand, increase inter-sectional contacts and mutual encouragement. The lower the level of development reached by states, the greater the need for such machanisms.

The need therefore arises for those replacement investments which appear both realisable and profitable in the short and medium terms to be listed within the framework of an operational programme.

The adoption of the medium term as the objective in time is essential in order to forecast and arrange for the local replacement of the requisite

intermediary products in time to avoid a deterioration in the trade balance - an increase in finished products cannot but boost demands for intermediary goods.

This objective in time is essential also if the range of projects established is to be wide and varied enough to encourage discussion between the States of any one area and result in an allocation of projects between them which will give the multi-nation programme the optimum economic and social balance.

c) Rejection of excessive protectionism

The authorities dispose of a number of means liable to stimulate the replacement process, more especially the direct or indirect protection of emerging industries. Such a possibility is written into the Yaounde Convention and into the codes of investment which most of the Associated States have adopted.

The principle of protection is now accepted almost unanimously but the experts are still very much divided over the degree of protection to be afforded and the method of intervention (tariffs, import controls, subsidies, tax exemptions etc.)

Whilst these problems are in the exclusive competence of the Associated States, it should nevertheless be pointed out that, according to past experience, excessive protection has proved to encourage the creation and survival of non-competitive enterprises and in the long run to be against the public interest; in the final analysis, it has been found harmful to the rate and structure of economic growth by gradually shielding the economy from any exercise of the principle of selection of comparable advantages and by excluding it from any participation in international trade.

The need to let the new industries feel some pressure from outside competition is all the greater since there will generally be little internal competition in the Associated States, where only very few enterprises in each each sector can be supported by the small existing markets.

Should the creation of replacement industries result in an increase in prices, particularly in respect of basic consumer goods, even if there is some elasticity in demand related to price. (*)

(*) The original text appears incomplete (Transl.)

d) strict selection of projects

At this stage of their development, the AAMS can dispose of only small amounts of national savings and still lack a native-born class of entrepreneurs and qualified supervisors.

If therefore the Associated States propose to develop in the industrial field at something higher than craftsman level, they will initiatilly have to secure the co-operation of experienced foreign firms to find all or part of the required capital, bring in the techniques needed and take on the responsibility of managing and running the establishments - at the same time as they help Africans to acquire the skills necessary for taking over eventually.

It should be noted at this point that the political emancipation of the Associated States has occurred at the same time as the formation of the Common Market and the rapid strides in technical progress which have multiplied the opportunities and needs for investment in Europe and thus increased European industry's own requirements in capital and qualified men.

The efficiency and attractiveness of the Associated States' industrial policy of replacement will therefore rest to a large extent on the judicious selection of investment projects both in respect of their contribution to economic development and their commercial prospects.

At enterprise level, care must be taken to establish only such industries as local conditions can make profitable for the promoter, possibly allowing for a reasonable amount of protection. As regards the community, the new industry must - without, however, raising prices - increase the locally added value, due account being taken of the minus effects of the disappearance or falling off of the imports of the goods "replaced" on the said added value and, in particular, on fiscal receipts.

The multi-national character of the policy of replacement should, incidentally, help the poorer states to bear the immediate sacrifices on their budgets.

3) Aims of the survey

It was in view of the above considerations that the Commission decided to plan the experts' research and to set the aims of the survey in a multi-national context - an exception being made in respect of

Madagascar and Somalia which, because of their isolation, do not lend themselves to area planning - and with an objective in time extending to between 1970 and 1975.

The 18 Associated States were divided into three zones representing the field of investigation of three teams of experts:

- the Western zone was entrusted for study to a team headed by Mr. Roland Julienne, Civil Administrator, seconded to the European Economic Community by the French Ministry of Foreign Affairs' Secretariat for Co-Operation, and including Messrs. Otmar Kaschig (DIVO Institute, Francfort), Jacques Reidenbach (SEMA, Paris), and Georges Roy (SEDES, Paris). The zone includes the eight French-language countries of West Africa which are associate members of EEC and whose industrial development has, in recent years, been on mainly national lines, despite the existence of a customs union treaty which has been in force since 1959 and was reviewed recently;
- the Central zone was entrusted to a team of experts headed by Mr. Thomas Gursin, Doctor of Economic Science, of the IFO Institute, Munich, and including Messrs. Pierre Niollet (SEDES, Paris), Anton Reithinger (IFO Institute, Munich) and Paul Zagadacz (IFO Institute, Munich). The zone consists of the five member states of the UDEAC (Central African Customs and Economic Union) who have already undertaken to co-ordinate their industrial development within the framework of the Union.
- the other five Associated States were studied by a team headed by Prof. Fernand Bezy, Director of the Research Centre for Developing Countries in the University of Louvain, and including Mr. D. Cannas, Miss Chenoix, Messrs. P. Frix, O. Le Brun, A. Lecointre, J.Ph. Peemans and Gh. Robyn. The zone consists on the one hand of Madagascar and Somalia and, on the other, of Congo-Kinshasa, Rwanda and Burundi whose markets have been partitioned since the accession to independence of these countries.

After taking stock as accurately as possible of the industries already existing in the AAMS and of the industrial projects already going into realisation or being seriously considered, the experts endeavoured to achieve the following objectives:

- in the first place, they tried to define the field of application of a medium term policy of industrial development by bringing to light such concrete projects for replacement investment as can be carried out within the next ten years and which could be economically and financially profitable on a multi-national, though not necessarily

on a national scale. Projects which should be profitable on a national scale have nevertheless also been examined in view of the benefit to firms of taking advantage of scale economies which are related to the grouping of several markets;

- secondly, the experts endeavoured to give the projects as a whole a satisfactory geographic and economic balance - thus looking ahead to pluri-national programmes for industrial development.

However, this objective could not go beyond certain limits: considerations of local balance may justify a waiving of optimal siting but must not for all that result in economically unjustifiable siting.

In practice, it is the four most populated and most economically advanced continental countries (Cameroun, Congo-Kinshasa, Ivory Coast and Senegal) who are the principal importers of consumer goods, so that an industrial policy based on replacement will tend to favour these four countries to some extent. In addition, these countries already have growth nuclei in the big ports or large production centres; the interplay of "external economies" have made these powerful magnets for new investment.

The inland countries, generally less developed and deprived of access to the sea, are therefore at a relative disadvantage, especially where industrial operation rests on the processing of imported raw materials or intermediary goods. Here they run the general risk of being unable to compete with imported finished goods - all else being equal - unless prohibitive protection is resorted to. That is why the attitude taken has been that the continental states should concentrate on industries using local materials, and that the coastal states would withdraw as a measure of compensation, even if they can claim the ability to produce the same goods at home at least as advantageously.

A sharing out of this kind, which should lead to a better overall balance, can be carried out in practice only within organised trade zones grouping neighbouring Associated States. Such zones already exist in the western as well as the central area but the degree to which they are organised is very different and the chances for true industrial co-operation at zone level also vary very widely.

If, as is certainly in the interest of all the States concerned, no great adjustments are to brought to the regional programmes set up by the experts, efforts will have to be made to strengthen inter-State industrial co-operation so that inland states can share in the advantages which the

coastal states derive from having a larger number of industries located on their territory. To achieve this will require, in addition to the political good will of which there seems to be no lack, an appropriate institutional framework, with a body able to arbitrate and a set of rules designed to both give the industrialists guarantees as to the security of an inter-State market and to ensure for member states and their populations the fairest possible sharing of advantages and benefits.

It is very obvious that there is no wholly satisfactory pattern for this and that any organisation for inter-State industrial co-operation must be worked out on the basis of the individual characteristics of the states involved and the degree of economic integration they have attained. It is nonetheless desirable that such an organisation should give much consideration to:

- the natural inequalities existing between the member states and the negative factors which hamper the industrial development of some of them.

- the loss of revenue suffered by some member states when they consume some of the products manufactured in other member states instead of similar imported goods subject to the usual import duties.

- the advantages accruing to some of the states from transit operations:

a) the economic advantages: transport, warehousing, brokerage, etc.

b) the social advantages resulting from the employment of local labour for all the above operations

c) the fiscal advantages resulting from taxes on turnover, on profits and salaries.

- the spirit of solidarity which moves all the member states and which results from the mutual dependence in which they have placed themselves to hasten their joint development.

Consideration can be given to these different factors by various means. Budgetary compensation can, following adjustments in the customs and tax systems, take the form of repayments from one budget to another or the creation of an inter-state fund with an appropriate code of distribution.

Economic compensation can take the form of price adjustments and more particularly retail price maintenance within the zone. Finally, the spirit of solidarity should bring about a strengthening of the multi-national

character of the establishments (each member state contributing to the capital of the important establishments, work shared out among the establishments of two or several states).

III. Methodology and time-table of the survey

Methodology

1) Detecting replaceable products

The first point of departure in a search for industrial investment projects with a view to the replacement of imports must be the import statistics of the AAMS.

A vast amount of examination work and statistical analysis was therefore carried out in co-operation with the EEC Statistics Bureau and with INSEE, Paris.

a) first stage selection (at overall AAMS level)

In the first phase, import statistics were examined and analysed at overall AAMS (1) level for the period 1961-1963.

- With a few exceptions, all products for which the total overall amount of imports into the AAMS did not reach $ 50,000 in 1963 were discarded, as were the products of heavy industry and capital investment goods. A first list comprising 273 three-figure headings (CST: Statistic and Tariff Classification) or four-figure items (NDB: Brussels Nomenclature) was arrived at.

As the headings, and even the items, frequently refer to a medley of unrelated products, many of them were broken down further on the basis of the NDB (up to six figures).

- The next task was grouping together the items produced by the same industrial processes and production units in order to attain the final objective of the survey, namely bringing to light projects for industrial investment.

- A second culling operation was then carried out on the basis of the two criteria mentioned below and working on the data in the technical dossiers prepared by the "European Technical Documentation (DTE) in Brussels

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1) For Congo-Kinshasa use was made of the statistics for 1959 and 1963, those for the intervening years not being available. As regards Rwanda and Burundi, the only statistics available were those for the years up to 1962, whereas those for Somalia refer to 1963.

(which data were cross-checked and even adjusted in relation with the experience of firms established in Africa):

- on the one hand, the elimination of products calling for over-complex manufacturing processes and therefore involving, in particular, extensive use of qualified and expensive European supervisors;
- on the other hand, the elimination of goods whose production "threshold" - below which production under modern technological conditions as adapted to local particularities could not be competitive - was well above the present and future size of the market in the entire AAMS.

At the end of these successive discardings, the three teams of experts were in possession of a joint list of nearly 300 items which themselves corresponded to some 80 production units (according to the International Type Classification by Industries CITI).

b) second stage selection (at region a state level)

Having been intended as a joint starting point for all three teams, this list naturally called for further selection work by each team, this now relating to the particular conditions encountered by the experts at the level of the region and/or countries they were surveying.

The weeding-out process required at this more restrictive and more operational level called for a more varied and more accurate range of qualitative and quantitative data.

For the Associated States belonging to the franc area, for instance, the experts were able, thanks to the courtesy of INSEE, Paris, to use the import statistic series covering a period of 10 years (1955-1964) as well as the import forecasts for 1970 and 1975, in accordance with the objective in time which had been adopted.

They were also able to take into account the industries already in existence or being established, as well as the industrial projects under consideration by the authorities or by private enterprise - a distinction being made between the projects assured of finance or in the process of being financed and the more hazardous or longer terms projects (1).

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1) The list of manufacturing concerns established in the Associated States and of projects for expanding existing capacities or for starting new units - begun in Brussels and completed in Africa thanks to the co-operation of government departments and professional associations - has enabled the Commission to set up an almost exhaustive card index of the industrial establishments now existing in the AAMS.

Working on the additional data thus collected, as well as on the DTE technical dossiers, each team proceeded to new eliminations, discarding amongst others all products whose "technical threshold" was well above the present or foreseeable import market, whether national or regional - the volume of imports proving too low either because of existing or foreseeable local production or because of inadequate or over-fragmented demand.

At this stage, each team came up with an appreciably reduced number of "replaceable" products warranting more thorough study.

2) Examining investment projects and outlining pluri-national programmes

a) Basing themselves on technical and market research, the experts now studied in as much depth as possible the competitiveness and profitability of the projects for each product or group of products made by the same industrial unit.

Each project was the subject of a technical examination (1) carried out by various specialised offices and providing all the necessary information as to manufacturing processes, qualitative and quantitative needs in production factors (water, energy, raw materials, man power), the nature and size of fixed assets, the structure of cost prices, etc.

In order to achieve the greatest possible accuracy and uniformity in the calculation of anticipated cost prices, a common pattern of calculation was worked out and experimented with by the three teams before it received its final form. It involved the calculation of various ratios which facilitate the overall assessment of each project, whether from the standpoint of the general interest (value added, new jobs, annual saving on foreign exchange, repercussions on the budget, etc.) or from the standpoint of the investor (turnover, gross profit, profitability, etc.)

In many cases the calculations were made on the bases of two different production capacities (one corresponding roughly to present demand and the other to the estimated demand in 1970 or 1975) and of various locations.

It was assumed that any required imports of raw materials and intermediary goods could be effected from of duty.

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(1) The initial technical examinations were carried out in relation to conditions in Europe. The results and more particularly the manufacturing processes as well as the combination of production factors were then adapted as far as possible to local conditions by each team. The estimates of profitability thus arrived at are nevertheless only tentative and presuppose further checking and research on the part of possible investors. Projects common to several teams were of course covered by one and the same basic technical examination.

b) the results of this examination formed the basis of a further selection, whereby several more projects were discarded for various reasons (not profitable enough, etc.)

In addition, some of the projects retained proved more hazardous than others either because their realisation was subject to pre-conditions such as the existence of projected client firms or the exploitation of local supplies, or because their profitability presupposed political decisions by the governments concerned.

c) With the projects they had retained, the experts went on to lay the foundations for the pluri-national programmes with a view to ensuring the best balance possible in the geographic distribution of the projects, taking particular account of the calculations relating to the various possibilities for location.

Time-Table

1st stage: Europe - September to December 1965

At this stage the Commission and the experts were mainly concerned to define methods and collect basic data. The experts and competent officials of the Commission met in Brussels on four occasions for one or two days.

The first need was to ensure that the three teams used uniform methods and to work out a common pattern of analysis and calculation.

Further, a list had to be drawn up of the many requirements in quantitative and qualitative data; the data collected was then checked for gaps and means sought to try to fill them. A special effort was made to seek out already existing industrialisation surveys and dossiers in order to avoid useless duplication. While these very numerous studies yielded substantial quantities of factual data and economo-commercial analyses, they could only serve as a starting point for the experts because of their disparate character. Since they had usually been prepared on a one-market level, the concrete industrial projects mostly concerned different productions and/had they been examined according to methods and from angles which were hardly comparable.

2nd stage: Africa - January to February 1966

The three teams of experts made a first visit to each of the countries assigned to them during the period 11th January to 20th February 1966.

The object of this first visit was to bring up to date and complement the data already collected in Europe, in particular to check the prices of locally available production factors, the prices of imported products on the common list as well as the information regarding the industrial projects (expansions and new ventures) being carried out or for which finance was already arranged or being arranged.

With this end in view, many contacts were made with the authorities and the private sector. Most of the information sought was obtained.

3rd stage: Europe - March and April 1966

A further co-ordinating meeting took place in Brussels, when the results of the visits were compared, the common pattern for analysis reviewed and the time-table for further operations clarified. The experts then went ahead with preliminary projects. At the end of April, each team handed the Commission and the other two teams a first report arrived at on the basis of the common pattern.

These preliminary reports were compared and discussed at yet another co-ordinating meeting in Brussels which took place prior to the experts' departure for their second and more important visit to Africa.

4th stage: Africa - May to July 1966

This time, the experts' task was to submit the findings in their preliminary report (general analysis, selected projects, profitability forecasts, locations, etc.) to the test of African realities and to examination by the competent government departments, professionnal associations and heads of establishments; to hear their criticism and suggestions and collect the last of the outstanding data.

Many and very fruitful meetings and interviews took place at this stage. On the whole, the experts were given the kindest reception.

Officials of the Commission also visited each of the Associated States during the experts' stay to note the reactions of leaders in the public and private sectors, the progress being made and the difficulties encountered by the experts.

5th stage: Europe - August to December 1966, January 1967

The experts and the officials of the Commission had a final co-ordinating meeting after the second visit to Africa to discuss the data collected, finally decide on the common patterns for calculation, the plans for the reports and the time-table for operations.

The experts then began the final drafting of their report in the light of the information and opinions gathered in Africa.

The reports were handed over to the Commission during December 1966 and January and February 1967 as the various documents reached completion.

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For each of the six zones or countries surveyed, the final dossiers comprise - in 2, 3 or 4 volumes according to cases and the volume of the material:

- a general report
- the economic scrutiny of the projects put forward (including calculations as to profitability and market research)
- an industrial inventory (existing industries and definite projects (1)

(1) In the case of UDEAC only there is a 4th volume; imports and local production of replacement goods.

SECTION II

INDUSTRIAL DEVELOPMENT IN THE AAMS

INDUSTRIAL DEVELOPMENT IN THE AAMS

Despite undeniable progress since the second world war, the secondary sector (1) still occupies only a very modest place in the economy of the AAMS.

Manufacturing industry, in particular, is barely represented. What there is of it is mainly concerned with the production for the home market of simple consumer goods, calling for processes which are also relatively simple and involving small capital investment; it may even be semi-handicraft in character.

The development of manufacturing industry is severely handicapped by the limited national or even regional markets as a result of small populations and low income levels, and by their uneven distribution.

To this must be added the further discouraging factors - inherent in the nature of the country - of very long distances and high costs of inland and coastal transports, hence of distribution; relative poverty of the soil and sub-soils; scarce sources of cheap energy.

The gaps and disparity in the available statistical data preclude an assessment of the economic contribution made by industry, and in particular, manufacturing industry, at overall AAMS level. The only figures liable to provide some indication at this level are the employment figures and the census of production units.

Activities in the secondary sector in the AAMS would seem to employ some 470,000 paid workers, including some 230,000 in the manufacturing industries proper.

The number of establishments classed in manufacturing industry and now operating is reputedly above 1800.

Four countries have been able to develop a manufacturing sector of some importance and diversity:

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(1) extractive industries, building, energy, manufacturing industries, crafts

	Year	Employees in manufacturing industries (1)	Value added (in 100 ua)	Industrial concerns 31.12.66
Congo Kinshasa	1964	120,000	205,960	400
Ivory Coast	1962	20,800	65,525	330
Senegal	1965	14,200	52,620	290
Cameroun	1963	18,000	57,120	125

All four are either coastal countries or have good access to the sea. Their population and rate of urbanisation is greater than those of the other Associated States; they are better provided with exportable agricultural and mineral resources and the monetary income per capita is therefore also higher.

Concentration of development being a much more important phenomenon in the new countries than in the developed countries, the manufacturing establishments have clustered round a small number of growth nuclei whose attraction for new investment is proving very strong: Lumumbashi and Kinshasa in the Congo; Abijan and to some extent Bouaké in the Ivory Coast, Dakar and Cap Vert in Senegal, Douala, Edea and, to a lesser extent, Yaounde, in Cameroun.

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(1) Manufacturing industries & crafts

TABLE I - DISTRIBUTION PER SECTOR OF GROSS NATIONAL PRODUCT AT AAMS MARKET PRICES (except SOMALIA)

(millions of national monetary units)

Country	Year	FNP per capita (uc)	GNP	Primary Sector 1)	Secondary Sector 2)	incl. manufact. industries	Tertiary Sector 3)	GNP % Primary Sector	GNP % Secondary Sector	incl. % manufact. industries	GNP % Tertiary Sector
*	1963	136	138,900	64,600	19,600	14,100(5)	54,700	46.5	14.1	10.0(5)	39.4
*	1963	103	52,900	16,800	6,300	3,400(5)	9,800	51.0	19.2	10.3(5)	29.8
Congo Brazza	1963	115	25.500	8,000	7,000	3,500(5)	10,500	31.4	27.4	13.7(5)	41.2
Congo Kinshasa (6)	1964	61	46,479	16,850	16,774	10,298	12,855	36.2	36.1	22.1	27.7
Ivory Coast	1965	237	132,600	79,900	30,060	16,180	72,640	43.8	16.4	8.9	39.8
*	1963	68	36,900	20,000	5,000	...	11,900	54.2	13.6	...	32.2
*	1963	384	42,700	12.700	15,000	2,400(5)	15,000	29.8	35.1	5.0(5)	35.1
Upper Volta	1964	52	60,700	37,900	6,900	700	15,900	62.4	11.4	1.1	16.2
Madagascar	1960	104	119,600	59,100	17,600	6,250	43,300	49,2	14,7	5,2	36.1
*	1962	60	63,300	36,500	8,500	400	18,300	57.7	13,4	0.6	28.9
Somalia	1964	115	26,700	11,400	12,600	400	2,700	42.7	47.2	11.5	10.1
*	1962	75	56,500	37,390	6,810	1,610	12,290	66,7	12.0	2.8	21.8
*	1964	163	140,210	48,000	22,490	12,990(4)	69,720	34.3	16.0	9.3(4)	49,7
*	1963	59	46,600	28,400	4,300	1,700(5)	14,100	60.7	9.2	3.6(5)	30.1
*	1962	76	29,080	16,520	2,590	170(4)	9,970	56.8	8.9	0.6(4)	34.3
Burundi (7)	1959	43	10,180	7,600	600	...	1,980	74.7	5.9	...	19.4

1) Agriculture, forestry, game, fishing
2) Extractive and manufacturing industries, production of modern energy, building, handicrafts
3) Transport and communications, trade, bankkng and insurance, services
4) Incl. extractive industries and energy
5) including energy
6) * million CF at 1958 prices
7) Gross national product evaluated in cost of elements

* Cut off in photocopying original text (Transl.)

ESTIMATED DISTRIBUTION BY SECTORS OF THE EMPLOYED POPULATION IN THE AAMS

Country	Year	I	II	III	% I/II	% I/III
Burundi	1960	3,200	13,700	67,400	23.4	4.7
Cameroun	1963	18,000	44,500	161,000	40.4	11.2
C.A.R.	1963	4,500	10,700	35,200	42.1	12.8
Congo-B.	1963	5,800	12,200	42,500	47.5	13.9
Congo-K.	1959	120,000	180,500	966,000	66.6	12.4
Ivory Coast	1962	20,800	42,100	194,000	49.4	10.7
Dahomey	1961	4,400	8,300	29,500	53.0	14.9
Gabon	1965	4,800	15,300	36,700	31.4	13.1
Upper Volta	1964	1,000	8,900	32,800	11.2	3.0
Madagascar	1964	19,500	38,200	222,300	51.0	8.8
Mali	1965	2,500	8,500	40,000	29.4	6.3
Mauritania	1964	300	6,500	12,100	4.6	2.5
Niger	1965	1,000	4,600	25,500	21.7	3.9
Rwanda	1964	2,300	22,900	61,300	10.0	3.8
Senegal	1965	14,200	32,400	110,000	43.8	12.9
Somalia	1963	3,700	7,100	17,000	54.9	22.9
Chad	1965	1,400	5,000	11,000	28.0	12.7
Togo	1965	1,900	8,400	26,400	22.6	7.2
TOTAL		229,600	469,800	2,087,000	48.6	10.7

I : employed in manufacturing industries

II : employed in the secondary sector (extractive and manufacturing industries, energy, building, crafts)

III : total employed population (excluding public and civil servants)

I. Industrial development in the western zone

Until the end of the first world war, the Associated States of Western Africa (1) had begun the exploitation of their resources only on the basis of primary activities. They depended on the outside world for almost all their requirements. Processing activities were represented only by craftsmen and in respect of weaving and iron work.

In the 1920s and 1930s an embryo of industrial activity emerged with the formation of a series of small, primitively equipped establishments producing consumer goods. They were mainly food and wood industries and were usually located near the main ports, more particularly Dakar.

Although the last world war, by isolating them from France, compelled the countries in the zone to some effort towards industrialisation, manufacturing operations only really got off the ground after the end of the war.

Industrial production rose from the index 100 in 1949 to 194 in 1955. The expansion in industry is also reflected in the number of concerns started: between 1942 and 1954, some 300 establishments opened - about 80 in the food line, 30 oil and soap mills, 20 brick and tile yards, about the same number of textile works and 15 chemical works. Classified according to countries, the main beneficiaries were Senegal (146 works) and the Ivory Coast (110 works) with the other countries falling far behind.

After the war, all the countries laid stress on diversifying their economy and on industrialisation, but all did not benefit equally from the new productive investment available.

Senegal

Manufacturing industries, concentrated at Dakar, had been intended to serve the vast French West African market. With independence and the partitioning of F.W.A., Dakar industrialists found their outlets reduced to the sole Senegalese market whose purchasing power was not even a quarter of that of the old federation. Local concerns had perforce to work well below their capacity, the rhythm of new investment fell significantly and Senegal had a period of painful re-adjustment until 1963.

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(1) This zone includes Senegal, Mauritania, Mali, Togo, Dahomey, Niger, the Ivory Coast and Upper Volta.

According to the most recent estimates, which relate to 1964, the gross national product of Senegal would appear to be some 140,000 million CFA.F., 16% being attributable to the secondary sector. If building and crafts are excluded from this section, extractive and manufacturing industries plus energy account for an added value of 13,000 millions, i.e. only 9.3% of the gross national product - over 80% of which was for the manufacturing industries proper.

According to the 1962 census of Senegalese industries, 40% of the value added by industry is due to the oil mills, which represent the most important industrial activity in the country. Next in order of importance come the food industries (canneries, biscuit making and flour mills), clothing, textiles, chemicals (soaps, plastics, matches and acids, paints and insecticides), a few small metal work shops, a cigarette factory, a cement works, an oil refinery, one bicycle and one lorry assembly plant, etc. There are now roughly 290 industrial establishments in Senegal.

The geographic distribution of Senegalese industry throws into relief the absolute supremacy (90% of all establishments) of the Cap Vert-Dakar area.

The number of people employed by Senegalese manufacturing industry was of the order of 14,200 in 1965 (i.e. 44% of the total number employed in the secondary sector and 13% of all wage or salary earners in Senegal).

The Ivory Coast

Industrialisation in the Ivory Coast is much more recent and has been very rapid. It was preceded and stimulated by the spectacular increase in exports, which doubled in value between 1952 and 1956 and trebled from 1956 to 1962. The expansion in exports was itself boosted by substantial infrastructural improvements, such as the cutting of the Vridi (Abijan) canal - which made it possible for large tonnage ships to reach a deep water port, which in turn enabled the import of heavy equipment - and the extension of the rail and road networks.

Until 1958-60 the industrial development of the Ivory Coast was to some extent hampered by the industrial dominance of Dakar on the one hand, and by the competition offered by French products distributed by a well established local commercial network. Since it attained independence, the Ivory Coast has made every effort to recover its own market and to include into the Abijan hinterland some neighbouring markets, in particular

those of Upper Volta and even Mali thanks, more especially, to the extension of the transport networks.

Industrialisation in the Ivory Coast has been very rapid: most of the establishments now existing have been created since 1960. Dakar industrialists did not hesitate to transfer to Abijan when their capacity in Dakar was no longer fully used owing to the loss of the Ivory Coast market. The liberalism of the Ivory Coast government, which was the first in Africa to issue a code for investments, and the reduction in the price of electric power resulting from the building of the Ayamé power station were significant inducements.

The index for the Ivory Coast industrial production rose from 100 (1960) to 202 in 1963 and 321 in 1965. Movements in the main sectors were as follows:

	1960	1962	1965
Timber industries	100	159	480
Foodstuffs, drinks, tobacco	100	176	332
Chemical industries, fats	100	134	263
Textiles	100	131	259

The economic accounts for 1965 show a figure for the gross national product of 197,000 million CFA.F. including 37,200 million of value added in the secondary sector (i.e. 19.5%) and 21,200 million in the manufacturing industries (11.1%) (as against a little over 11,000 millions for the Senegal manufacturing industries in 1964).

Industry in the Ivory Coast is markedly more diversified than in Senegal. Food industries represented, in 1965, 29% of the total value added by the industrial sector, textiles 18%, vehicle assembly and repair 13% and the fats industries 9%. We would also mention the chemical industries (plastic goods, various acids, soap, matches, paints, insecticides) timber industries, drinks, clothing, an oil refinery and vehicle assembly establishments (bicycles, cars, motorcycles and trailers). A list made at the end of 1966 of industrial establishments showed a total of some 330.

The number of persons employed increased with the growth in the activities of the secondary sector, from 8000 in mining and manufacturing industries in 1957, to 13,500 in 1960 and 20,800 in 1962 (i.e. about 50% of those employed in the secondary section and 11% of the overall total of paid workers.

Geographic distribution shows a fairly marked industrial concentration at Abijan and a second industrial centre at Bouaké. The only industries not established in these centres are the mining and timber industries, who are on the working sites.

Mauritania

Until 1959 Mauritania's gross national product was very low and her industries practically non-existent. Since then, the opening of the iron mines at Fort-Gouraud and the creation of Nouakchott effected the start in the building and public works sectors and, since 1963, in the extractive industries.

According to the economic accounts, the gross national product rose from 12,000 million CFA.F. in 1959 to 26,700 million in 1964 and the secondary sector from 600 million (5%) to 12,600 millions (47.2%).

In 1961 building still represented the major part of the secondary sector with an added value of 5,500 million CFA.F. From the date the iron mines became operative, the percentage for the building sector decreased while that for mining increased; by 1964 it represented some 7,000 millions, i.e. 56% of the secondary sector.

The number of persons employed in the secondary sector was 11,743 in 1962 and 6,500 in 1964. The decrease reflects the end of the big infrastructural works. Man-power in the processing industries rose from 175 in 1962 to 300 in 1964, i.e. from 1.3 to 4.6% of the total numbers employed by the sector.

Mali

The growth of the Malian economy from 1928 to 1939 was extremely slow (2.1% p.a.); it has quickened slightly since the end of the war (3.3% from 1945 to 1959).

The secondary sector has deteriorated, from 15% in 1928 to 13% in 1959 and 1962, representing for this last mentioned year 8,500 millions of value added for a gross national product estimated at 63,300 million CFA.F. The value added by manufacturing industries was only 400 millions, i.e. 4.7% of the secondary sector.

Some 50 industrial establishments are listed. Malian industry (excluding building) employed only some (*) persons in 1963 and 2,500 in 1965 (i.e. 29.4% of the paid workers in the secondary sector and 6.5% of the total figure). It is made up mainly of food industries (oil mills)

(*) Figure missing from photocopy of original text (Transl.)

fruit packing, milk products), cotton ginning, a few chemicals (soap, acids) and small-scale metal working. Most of the establishments are at Bamako.

Upper Volta

Like most countries of the Sahelian zone, Upper Volta has few assets for its prospects of development: remoteness from the sea, activities of an essentially agricultural nature and of low profitability, few sources of energy. The GNP growth rate has not exceeded 2.3 - 2.5% between 1954 and 1964 and that growth was absorbed by the increase in population.

As regards the secondary sector, the Ivory Coast concerns are solidly entrenched on the Upper Volta market.

With a gross national product estimated at 60,700 million CFA.F. in 1964, the secondary sector appears to represent only 6,900 millions, i.e. 11.3%, the greater part of which is accounted for by crafts ((4,000 millions) and building (1,200 millions). Manufacturing activities (1,700 millions) are relatively recent but fairly diversified. Contrary to the general rule, the food industries (oil mills, dairy produce) do not occupy a large place as compared to the timber industries (sawmills), metal work (boilers and galvanized sheets), textiles (cotton ginning) and drinks (beer and minerals). There is also an assembly plant for pedal and motor cycles and some factories making items of apparel. In all there are some forty establishments.

Most of the industries are sited in Bobo-Dioulasso or the capital Ouagadougou but the textile industries are at Koudougou. The man-power employed in 1964 totalled 1000 (11% of the manpower employed in the secondary sector and 3% of the total number of wage and salary earners).

Niger

Niger also suffers from difficult economic conditions, though the possibilities in land and animal husbandry are far from exhausted and the situation in this respect is very much better than in Upper Volta and Dahomey. Growth is hampered, on the one hand, by the overriding place occupied by an agricultural sector dominated by auto consumption and where the small quantities marketed refer only to groundnuts and a few animal products and, on the other hand, by the geographic configuration of the country which means long, difficult and costly haulage to serve a small internal market.

In 1962, the secondary sector represented some 12% of the gross national product (6,800 million CFA.F. out of 56,500 millions) and in 1965 employed some 4,600 workers.

The manufacturing industries (1,600 millions, i.e. 24% of the secondary sector) consisted in the main of activities involving traditional techniques: tanning, felling, groundnut husking. Modern processing industry is represented only by a few recent establishments dealing in fats, textiles and plastic consumer goods for the home market. The number of concerns listed barely exceeds thirty. The number of workers employed was of the order of 1,000 in 1965 (22% of the manpower in the secondary sector and 4% of the total employed.)

Manufacturing units are in Niamey, the main centre, and the areas of Maradi and Zinder.

Dahomey

The main obstacles in the way of industrial growth in Dahomey are a very small home market and stagnating agricultural production aggravated by a rapid growth in population which absorbs the entire expansion in national production.

In 1963, the secondary sector, with added value of 5,000 million CFA.F., represented 13.5% of the gross national product; it consisted mainly of building activities.

Manufacturing industry proper is virtually non-existant, the bulk of the activities consisting in the elementary processing of agricultural produce (oil, coconut). In addition, there is a brewery, a few cotton ginning mills, an assembly shop for transistor sets, several small metal workshops and a concern which assembles 300 motor vehicles a year. In all something over 60 establishments.

Manufacturing industries and modern crafts employed 4,000 (?*) in 1961, i.e. 53% of the workers in the secondary sector and 15% of the total in paid employment.

Togo

The situation in Togo is very similar to that in its neighbour Dahomey: small market, rapid increase in population, limited monetarised

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* Part of original text missing (Transl.)

sector, agricultural production static since 1936.

According to the nation's account, Togo's national production amounted to 33,000 million CFA.F. in 1965; the secondary sector's share of value added was 4,270 millions, i.e. 12.9%, manufacturing industry and energy representing only 370 millions, i.e. 0.1%.

Apart from the industries serving exports (oil and starch mills, phosphate processing works), industry consists of a few unrelated concerns producing for the home market in the main drinks, ginned cotton, sawn wood . In all, manufacturing industry comprises some 40 establishments.

The number of workers employed in manufacturing industry in 1965 was about 1900, i.e. 22.6% of the workers in the secondary sector and 7.2% of the total number of paid workers.

II. Industrial development in the UDEAC

The industrialisation of the five UDEAC (1) states got under way rather late. Until the end of the second world war, the number of industrial establishments remained small and their activities were limited to the processing of the raw materials supplied by agriculture and forestry: sawing and peeling, oil milling and cotton ginning. In the absence of any worthwhile mineral resources, there was little inducement for public or private investment in these countries. The locally established importers had control of the small market for consumer goods and offered no support for new initiatives tending to create local production.

As elsewhere in Africa, the break in communications with Europe during the war helped in the creation of the first manufacturing industries, especially in the Cameroun and the Congo (soap, leathers, clothing, footwear). At the end of the war the young industries suffered a set-back as a result of renewed competition from goods imported from Europe and Congo-Kinshasa. Nevertheless, the growth in exports, the carrying out of development plans with the resultant infrastructural work which all began in 1946 meant the start of a new phase of industrialisation, especially in

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(1) The members of the UDEAC are Cameroun, Gabon, Congo-Brazzaville, the Central African Republic and Chad

(1) Original text cut off in the photocopying (Transl.)

Cameroun. More particularly, the new money invested made it possible to improve the rail and road networks and the ports of Douala and Pointe Noire as well as to build the Edea Dam.

A new crisis arose in 1952 due partly to the credit restrictions in France and the consequent falling off in public and private investment, and partly to the drop in world prices for raw materials. The situation did, however, remain better in Cameroun, where 30 new manufacturing enterprises were set up, including Alucam, at Edea.

The position began to improve in 1957: new investment was attracted thanks to the advantages granted by the governments and to the positive results of mineral prospection, particularly in Gabon.

Since independence, continued public investment, the application of the codes of national investment and particularly the tariff, fiscal and economic union between Gabon, Congo, the Central African Republic, Chad and the Federal Republic of Cameroun have continued to sustain the steady expansion (except for a temporary recession) of the secondary sector to which 80 new concerns were added between 1961 and 1966.

Nevertheless, taking the UDEAC as a whole, the economic contribution made by the secondary sector, in particular the manufacturing industries, is still relatively small. For 1963, the value added for the secondary sector amounted to 5,200 millions, i.e. 18% of the gross national product of 28,000 million CFA.F.

Half the amount was attributable to mining and building operations, the other half to manufacturing industries, energy and crafts.

In 1963, the secondary section employed 88,000 persons, including 35,000 in manufacturing industries, out of a total of 285,000 paid workers.

However, the structure of the national economies and, more especially, the relative importance and composition of their industrial sectors vary widely from one UDEAC country to another.

<u>Cameroun</u>

In 1963 the value added by the manufacturing industries in Cameroun was considerably higher than in the other countries of the Union and accounted for 14,000 millions out of a total of 25,000 million CFA.F. for the entire UDEAC. In relative values, however, the secondary sector represented only 14% of the gross national product of Cameroun, against 18% for the entire Union. Manufacturing industries play a preponderant part in the secondary sector (70%, i.e. 10% of the Cameroun national product).

Among manufacturing industries, a large place is taken by the electro-smelting of aluminium at Edea. Apart from metallurgy, industrial activity in the Cameroun is reasonably diversified, ranging from production to consumer goods.

There are now some 130 industrial establishments in the Cameroun, the greatest number being concerned with wood (sawing and plywoods, but excluding the making of furniture), food stuffs (oils, meat and fish packing, milk, Italian-type paste, chocolate), metallurgy or metal products (nails, agricultural and household implements, boilers, etc.) and chemicals (paints, soaps, matches). Also worthy of mention are the latex-rubber works, furniture makers, drinks manufacturers, a cigarette factory, the clothing industries (garments and footwear), a clinker crushing concern, an assembly shop for transistor sets and one for bicycles.

The industrial establishments are concentrated in the Douala-Edea area (65 works) which is the UDEAC's main industrial centre, and at Yaoundé (9 works). A third industrial area has recently begun to take shape in the north of the country.

The manufacturing industries of the Cameroun employ 18,000 paid workers, i.e. 11% of the paid manpower and 40% of workers employed in the secondary sector.

Gabon

Amongst all the countries of the Union, it is in Gabon that the secondary sector has the greatest relative importance (35.1% of the national product for 1963) but the manufacturing industries play a very small part compared with the extractive industries and building: 2,400 million CFA.F. out of a total of 13,000 millions of value added.

Apart from the timber industries (sawn woods, plywoods, veneers) which occupy a very important place, the manufacturing industries in Gabon are represented by a few food and drink manufacturers, oils (palm oil), chemicals (soap and paints), a maker of metal furniture and a shipbuilding yard.

The largest industrial concentration is at Port-Gentil, although Libreville has the greatest number (10) of establishments. Elsewhere, establishments are very scattered, mainly because of their object (timber industries).

Gabon's secondary sector employed 15,000 persons in 1965, the manufacturing industries about 4,800, i.e. 31% of paid workers in the

secondary sector and 13% of the total.

Congo

In 1963 the secondary sector represented 27.4% of the national product, manufacturing industries 13.7%. Industrial activity is accounted for mainly by the timber industry, oil mills, food industries (fish canning, flour, sugar and cattle feeds) and drinks; a few firms are active in metal working and unsophisticated chemical products (paints, insecticides, soaps, perfumes). There are also one cigarette factory, one manufacturer of sporting cartridges and one producer of footwear. There are about 65 industrial concerns.

The most important of them are either at Pointe-Noire (18) or at Brazzaville (17), with the exception of the timber concerns who work on site, in the forest areas.

The manufacturing industries in the Congo employed some 5,800 workers in 1963, i.e. 14% of the total paid workers and 48% of the sector's entire manpower.

The Central African Republic

In 1963 the secondary sector represented 19% of the gross national product, and the value added by the manufacturing industries (3,400 million CFA.F.) amounted to 10.3% of the national product.

Manufacturing production in the CAR is relatively more diversified than in the other countries in the zone, except for the Cameroun. In addition to the food industries and oil mills, the country has, in particular, a textile works, soap factories and a brewery.

There are some 40 concerns, mainly concentrated at Bangui (24).

In 1963, the manpower employed in industry was about 4,500 workers (13% of the paid workers and 48% of the total manpower employed by the secondary sector).

Chad

The secondary sector's share in the gross national product in 1963 was 9.2%. Value added by the manufacturing industries was very small (1,700 million CFA.F.) and represented only 3.6% of the national product.

The main activity is cotton ginning. There are also some food industries (a large abattoir, a sugar refinery and oil mills amongst others), and a small number of miscellaneous industries (drinks, soaps, transistor set assembly, metal goods, etc.)

There are about 25 industrial concerns. The main concentration is at Fort Lamy (16) and in the Fort-Archambault area.

In 1965, only 1400 paid workers were employed in the Chad industrial concerns (13% of the total paid population and 28% of those employed in the secondary sector.)

III. Industrial development in the Democratic Republic of Congo

The Congolese economy really got into its stride after the first world war. A very rapid growth, of the order of 4.7% p.a., was recorded from 1925 to 1957. At the crest of this development, in 1957, the total value of Congolese exports topped 500 million dollars.

Economic growth was attended by the equally rapid development in industrial activities which took place in two phases, each notable for a wave of investment.

During the first phase (1925-1939), large investment sums were devoted mainly to the development of the basic (largely mining) activities and were thus responsible for a vigorous advance in exports. This paved the way for the development in manufacturing industries: the production of soap, beer, cement, sugar, cotton fabrics dates from the 1920-1930 period.

After the second world war and up to 1957 comes a second phase of development. Investment capital is no longer devoted solely to the exploitation of export goods, but also to satisfying the internal demand which is increasing sharply. During this second period, manufacturing industry grows at the annual rate of 5.3% and even 10% during the 1950s. This advance is due to the combined influence of three factors: massive investment of foreign capital seeking refuge from the tense international situation (Korean war), rapid developments in the export of raw materials and the appreciable increase in demand for consumer goods at home.

However, the brakes were clamped on as from 1958, when the private sector became aware of the imminent political evolution and gradually limited new developments.

The effect of the confusion in the Congolese economy after independence on the processes of industrialisation is ambivalent but does not exclude some relatively favourable aspects. The mass departure of the European residents altered the character of the demand to the advantage of local products. The exchange restrictions which severely restricted firms in repatriating their profits, resulted in the latter being reinvested in

the firms' plant. Import quotas and the rapid increase in the price of imported goods steered demand towards the local products, which widened in range and improved in quality. The growth of an African middle class increased the monetary purchasing power of the Congolese, which received a further boost from inflation, insofar as there was a time lag between monetary depreciation and the increase in the prices of manufactured goods.

Such investment as took place during the last few years, in a troubled and inflationary economy, has flowed mainly towards consumer goods with, however, a marked preference for the concerns which carry out simple marketing operations on imported goods rather than for true manufacturing from local raw materials; the capital involved is usually small and there is little value added. The less speculative production of intermediary goods has not benefited to the same extent from new initiative.

Congo-Kinshasa is appreciably more industrialised that any of the other AAMS. The figures in the national accounts of the Congo for the year 1964 highlight the importance of the secondary sector: 16,800,000 million C.F. in value added, i.e. 36.1% of the gross national product, including 22.1% for manufacturing industries. Since operations in the metallurgical sector have not suffered any setback since then and since the local production of manufactured goods has been favoured whereas the agricultural sector is suffering a major crisis, it may be assumed that the share of the secondary sector and of the manufacturing industries will have increased somewhat since 1959.

There are now about 400 industrial establishments.

Congolese industry is very diversified. Alongside the particularly important non-ferrous metals industries (copper, tin, zinc, cobalt, cadmium, germanium and other kindred metals) there is the chemical industry which serves them (powders and explosives, sulphuric acid and other basic products). Other chemical productions go to supply manufacturing industries or the retail market (paints and varnishes, insecticides, soap, bottles, plastic goods, perfumery). Building industries (cement, lime and building materials) are important, as are the textile industries (spinning, weaving, printing and ready-to-wear), the food industries (sugar, dairy produce, margarine), drinks and tobacco. Metal working ranges from the kind usual in Africa (assembly, sheet metal work, drums, tins for packed foods, boiler-making, nails, bolts, crown corks) to some more complex equipment goods (shipyards). The agricultural and timber industries are also fairly well represented (oils, oil-cake, leathers and hides, sawing, plywoods and veneers).

From the geographic point of view, the industrial expansion of the country is concentrated around two growth centres. In Katanga, the impetus came from the need to have the produce of the mining area treated in local metallurgic centres because of the long distance to the sea. To avoid the high haulage costs, the mining industry gradually moved on to processing its product. The impulsion from this industry then gave rise to ancillary activities.

Geographic necessity was the reason for the concentration in the Kinshasa area of the most important consumer goods industries - this is where the river Congo ceases to be navigable and goods have to transfer between the river and the railway going to the port of Matadi.

Two other centres, markedly less important than the two already mentioned, are Kisangani and Bukavu. The industries there deal with the processing of agricultural produce (coffee, tea, cotton, sugar cane) and the production of a few unsophisticated manufactured goods (beer, sugar, oils, cotton fabrics) and of building materials for the local market.

Congolese industry (both manufacturing and extractive) employed in 1959 approximately 120,000 paid workers, accounting for 12% of the total paid labour force (as against 180,500 for the entire secondary sector). The numbers in industrial employment have, however, steadily decreased since then. It is estimated that the numbers employed in 1962 have dropped by 30% as compared with 1957 but the situation varies according to sectors (- 38% in the mining industry, situation unchanged in the manufacturing sector) and according to places (in 1964, numbers employed at Kinshasa had increased, as against 1959, by 4% overall and by 28% in manufacturing industries).

IV. Industrial development in Rwanda and Burundi

Until the end of the second world war, the economy of Rwanda and Burundi was distinguished by absolute autartic subsistence, a very weak monetary sector, very primitive infrastructure and an extremely limited commercial market. There was practically no industry in either of these two countries before 1945.

Some fairly important changes occurred in the two countries between 1950 and 1960 which resulted in some development both in the traditional economy and in the modern sector. These changes were connected with a very great rise in population, an increase in European supervisory staff and more especially with the application of the 10-year plan for improving

the infrastructure and developing both the subsistence economy and the industrial crops (coffee arabica and, to a lesser extent, cotton, tobacco and pyrethrum).

An industrial sector was born, based on the processing of the industrial crops and on the manufacturing of some simple items intended to replace imports (soap, concrete products and tiles, dairy produce, biscuits, blankets, beer, etc.) New investment in the industrial sector rose from 300 million C.F. in 1949 to 1,350 millions in 1959, i.e. 15% of total investments.

The main beneficiary of industrial investment was Bujumbura, which geography suggested as the probable political and administrative centre of the two territories under protection, which, in addition, is the port of transit towards the Eastern coast for the territories as well as for Kivu and whose position had been strengthened by improvements to the road links with Kigali and Bukavu. The Bujumbura industries were able to take over the Rwanda and Congo hinterland and to gather in all the industrial crops of the two areas for initial processing before export.

Despite this advance, industry in Rwanda and Burundi remains embryonic. The value added by the secondary sector in 1959 accounted for only 600 million C.F., i.e. 5.9% of the gross national product and 8% of the monetary GNP of the two countries.

Independence in the Congo in 1960, in Rwanda and Burundi in 1962 and the break in economic relations between the two countries for political reasons in 1964 signified the end of the wider economic area which had made possible the start and subsequent consolidation of industrial activity. Industrialists in Bujumbura were badly hit by the loss of the outlets first in Kivu and then in Rwanda, the general contraction of monetary revenues which resulted in a recession in the consumer industries (beer excepted) and by the decrease in public and private investments which had adverse effects for the few producers of building materials.

The Bujumbura industrialists are at present operating far below their capacity. The economic recovery which began in Rwanda in 1963 has not benefitted them, since Rwanda has chosen to buy in Kenya and Uganda and, at the same time, is offering inducements for the transfer to Kigali of some of the Bujumbura industries in order to create an industrial nucleus in its own capital.

A few new industries have no doubt been started in Bujumbura, but they mostly use imported raw materials and are protected by exorbitant tariffs. Some of these investments are purely speculative and they do nothing but depress the consumer's position without offering adequate compensation in the form of extra value added.

There are at present some 40 industrial concerns in Rwanda and 37 in Burundi; the great majority operate in the food sector (oil mills, coffee processing, breweries, dairies). The balance is accounted for by some textile industries (blankets, shirts), chemicals (soaps, paints), metallurgy (boilers, sheet metals, agricultural and household implements). There is also a footwear factory and a cigar factory.

The labour force employed by these industries would appear to be (*)

V. Industrial development in Madagascar

In the absence of an adequate expansion of agricultural or mineral exports - whose role proved decisive in the industrial expansion enjoyed by other African countries - the monetarisation of the Malagasy economy has lagged behind and emerging industries have not been able to rely on a generally adequate monetary demand. Furthermore, the monetary revenues available are concentrated among the town dwellers (10% of the population but 60% of the purchasing power) and, what is more, in the hands of a small number of the inhabitants of the six main towns. This concentration of demand has prevented the growth of enough outlets for unsophisticated and standard products liable to be manufactured locally but, on the contrary, it has encouraged the import of higher quality and more varied goods.

To these major handicaps must be added the fragmentation of the national market which is due to the size and configuration of the country, its insularity and its scattered population.

Madagascar has therefore not benefitted yet from a development of industry commensurate with its true potentialities.

(*) omitted in photocopying of original text (Transl.)

The first steps in industrialisation date back to the break in trade relations with France, during the second world war. Some industries were started then with a view to meeting local requirements for basic consumer goods by processing the produce of agriculture (rice, cassava) and particularly stock breeding. In 1950, the value added by industry represented less than 5% of that from agriculture and stock raising, nine-tenths of the existing industries being agricultural industries.

In 1960 the value added by industry was 2,6 times that for 1950; some diversification had occurred as new capital was invested in the production of sugar, drinks, textiles, chemicals, leathers and tobaccos.

Since the country acceeded to independence, a code of investments and the creation of bodies responsible for the promotion of development (Industrial Development Bureau, Development Bank, National Investment Society) have given new impetus to industrialisation and laid stress on a diversification of industry and the replacement of imported by local products.

Despite these efforts, however, Malagasy industry is still mainly concerned with elementary operations, such as processing the produce of land and animal husbandry, and these may not have the same power to stimulate and expand the economy as manufacturing industries proper. Many so-called industrial enterprises are in fact trades.

Recent figures assess the processing industries' share in the gross national product at 5% (4% of which refers to agricultural industry) whereas the secondary sector as a whole accounts for 15% and the primary sector for 49%.

There are some 150 establishments. The greatest number belong to food industries (oil, rice, Italian-type paste, margarine, cocoa, sugar, packing of meat, fish, vegetables and fruit, milk, etc.) Next in order come the textile and clothing industries (cotton fabrics, blankets, sacks, ready-to-wear, footwear), metal working (drums,(tanks, nails, locks, food packing tins, etc.) and chemical products (soaps, paints, perfumes, various acids). There are also several concerns making electrical equipment and drinks, one producing paper pulp, two assembly units for motor vehicles and one for bicycles, one cement works and several small tobacco factories.

The greater part of Malagasy industry, and practically all the establishments working for the home market, are located on the high plateaux, at Tananarive or in its immediate vicinity at Antsirabe. The export industries are on the coasts, their siting being determined either by that of the agricultural areas or the proximity of the ports of lading.

In 1964, the secondary sector employed roughly 40,000 Malagasy workers, half of them in the manufacturing industries.

VI. Industrial development in Somalia

Unlike most of the former African colonies, where economic development was based on the natural wealth of the soil or sub-soil, Somalia possesses no natural advantages likely to attract initial investment and carry the economy into the stream of international trade. Such mineral resources as are known are either small or badly situated - none so far has justified investment. Even arable land is scarce and its low natural fertility would only be increased by expensive irrigation work, which would itself be limited to the areas served by the two rivers.

Until 1925, Somalia was almost totally isolated from the influence of the industrial world. The colonial administration then endeavoured to create a sector of modern cultivation likely to encourage such internationally marketable crops as cotton, bananas and sugar cane. These efforts, which were continued under the Italian administration from 1950 until 1960, did succeed in raising the country to some extent out of the subsistence economy cycle.

The investments were however too small to get the economy off the ground, so that the home market cannot provide replacement industries with adequate outlets.

As a result, manufacturing industry in Somalia today consists of only the most elementary processing by craftsmen of some land and animal produce.

There are at present some 30 industrial establishments, the most important being a sugar refinery which meets the demands of the southern area, one meat and one fish cannery, one maker of dairy products and a small number of other industries (drinks, tanneries, footwear and clothing, wood furniture, oils, soaps, various metal goods).

Manufacturing industries in Somalia employ about 3,900 workers (i.e. 55% of the secondary sector and 23% of the total labour force in the private sector). The bulk of industry is concentrated at Mogadiscio and, far behind, Hargheisa and Berbera.

INDUSTRIAL ESTABLISHMENTS OPERATION

	Senegal	Mali	Mauritania	Ivory Coast	Upper Volta	Dahomey	Niger
Fats	6	4	-	7	1	7	2
Food industries	38	13	5	50	13	6	7
INCL.: meat canneries & abattoirs	2	1	-	-	2	-	1
fruit and vegetable canneries	3	1	-	2	-	-	-
fish canneries	9	-	3	5	-	-	-
flour mills	3	-	-	1	-	-	1
sugar refineries	1	1	-	-	-	-	-
cassava starch works	-	-	-	-	-	-	-
Drinks manufacturers	14	4	-	8	3	2	4
incl.: breweries	1	-	-	2	1	1	-
Textiles (2)	11	7	-	8	2	8	2
incl.: spinning & weaving	5	-	-	2	-	-	-
Footwear (3)	4	-	-	5	1	-	1
Garments & other apparel	14	-	1	7	1	1	-
Timber & wooden furniture	26	3	1	91	[illegible]	5	5
incl.: sawmills	11	1	-	56	4	2	-
peeling & plywoods	-	-	-	6	-	-	-
joiners & cabinet makers	3	1	-	4	2	3	2
Chemicals	23	4	-	17	1	6	1
incl.: soaps	3	3	-	1	1	4	-
manufacturing & packing of paints	3	-	-	2	-	-	-
matches	1	-	-	1	-	-	-
Minerals other than metals	68	2	-	13	2	9	2
incl.: glass	1	-	-	1	-	1	-
cement and clinker crushing	1	-	-	1	-	-	-
building materials, bricks	64 4)	2	-	11	2	7	2
Basic metal industries 5)	1	-	-	6	1	1	-
Engineering & metal work	36	11	2	33	8	8	6
incl.: tools & agric. implements	1	-	-	1	-	-	1
boilers, girders etc.	14	3	1	13	7	3	3
metal containers	2	1	-	2	-	-	-
nails, locks	3	-	-	3	-	2	-
metal furniture	9	4	-	5	1	3	2
Transport equipment	17	1	1	14	1	1	1
incl.: ship building & repair	5	1	1	8	-	-	-
vehicles, cars & lorries	6	-	-	3	-	1	-
pedal & motor cycles	2	-	-	2	1	-	-
Tobacco	1	1	-	1	-	-	-
Paper	1	-	-	2	-	-	-
Electrical industries	1	-	-	1	-	1	-
Petroleum industries (7)	1	-	-	1	-	-	-
Leathers	3	-	-	-	1	-	-
Rubber & plastics	5	-	-	12	-	1	1
incl.: platic goods	2	-	-	8	-	-	1
Others (8)	4	-	-	-	-	-	-
Total	274	50	10	276	41	56	32

1) exc. 194 husking and 107 rice mills
2) incl. cotton ginning
3) incl. plastic footwear
4) incl. 50 concerns making pre-fabric
5) incl. foundries
6) incl. 2 concerns whose output was t
systematic analysis

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Togo	Cameroun	Congo Brazz.	Gabon	C.A.R.	Chad	Congo Kinsh.	incl. Kivu	Burundi	Rwanda	Madagascar	Somalia	TOTAL
2	12	9	2	7	2	30	(13)	1	-	8	1	101
6	24	11	4	6	11	99	(84)	18	21	35[1]	11	378
-	3	-	-	-	2	2	(1)	-	-	8	2	28
-	-	-	-	-	-	-	-	-	-	5	-	11
-	7	3	1	-	-	1	-	-	-	-	5	34
-	-	1	-	-	1	4	(1)	-	1	-	-	12
-	-	1	-	-	1	3	(1)	-	-	4	1	12
1	2	-	-	-	-	1	-	-	-	7	-	11
4	2	4	3	1	3	32	(4)	1	3	6	7	101
-	1	2	-	1	1	14	(1)	1	1	1	-	27
7	-	-	-	2	-	39	(3)	1	-	3	1	91
-	-	-	-	1	-	25	(1)	1	-	3	-	37
-	4	1	1	2	-	3	-	1	1	5	2	31
-	11	-	-	2	1	28	(1)	3	1	13	-	83
14	33	20	21	7	1	49	(1)	-	4	1	-	287
3	25	16	17	7	-	41	(1)	-	-	-	-	183
-	2	4	4	-	-	6	-	-	-	-	-	22
1	3	-	-	-	1	2	-	-	4	-	-	26
1	12	6	3	8	2	29	(3)	4	5	21	2	145
1	4	2	1	6	1	6	(1)	1	3	8	1	46
-	2	1	1	1	-	7	-	2	1	2	1	23
-	1	-	-	-	-	-	-	-	-	-	-	3
4	3	1	1	1	2	18	(1)	1	2	10	-	139
-	-	-	-	-	-	1	(1)	-	-	-	-	4
-	-	-	-	-	-	6	-	-	-	1	-	9
4	3	1	1	1	2	10	-	1	2	9	-	122
-	2	-	-	-	-	8	-	-	-	4	-	23
2	13	8	1	2	2	23[6]	(2)	5	1	23	-	184
-	1	-	-	-	-	1	-	1	-	-	-	6
-	7	3	-	-	1	5	-	4	-	11	-	75
-	-	1	-	-	-	2	-	-	-	3	-	11
-	2	1	-	-	-	-	-	-	-	-	-	11
2	3	1	1	1	1	4	-	-	-	3	-	40
1	4	2	2	1	1	7	-	-	-	4	-	58
-	1	2	2	-	-	1	-	-	-	1	-	22
-	1	-	-	-	-	5	-	-	-	2	-	18
1	1	-	-	1	1	1	-	-	-	1	-	11
-	1	1	-	-	-	6	-	-	1	10	-	22
-	-	-	-	-	-	8	-	-	-	4	-	15
1	1	-	-	-	1	5	-	-	-	9	-	20
-	-	1	-	-	-	-	-	-	-	-	-	3
-	-	-	-	-	-	-	-	1	-	3	2	10
1	9	1	-	2	-	12	-	1	1	7	-	53
-	2	-	-	1	-	9	-	-	-	5	-	29
-	-	1	-	-	-	3	-	-	1	-	-	9
43	131	66	38	41	26	399	(112)	37	41	166	26	1753

ed building items

diversified for

7) refineries & lubricant production
8) excl. printing works

SECTION III

THE EXPERTS' EXAMINATIONS & RECOMMENDATIONS

Introduction

This third section gives for each zone or country surveyed (1):

- a very succinct synopsis of the experts' survey of the general economic aspect of the zone or country they were instructed to study as well as of their suggestions as to the direction to be given to the proposed industrial policy.

- a summary description of the projects put forward by the experts.

As a preliminary, the schedule which follows shows the products appearing on the initial list common to all three teams of experts. In accordance with the methodology set forth in Section I of this report, the experts critically examined the possibilities of creating new industrial concerns. Their research went more or less deep according to cases. A fairly large number of productions could be discarded without very lengthy research - for instance where existing production capacity was sufficient, where existing plans were definite (2) and if the present or potential market was markedly below the threshold of a modern and, in the African context, profitable concern. In less straightforward cases, a more thorough analysis showed that either the market was inadequate (demand uncertain, falling off or over-fragmented), the foreseeable profitability doubtful, or the .....(*)

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(1) These were: I. West Africa (Senegal, Mauritania, Mali, Togo, Dahomey, Niger, Ivory Coast, Upper Volta)

II. U.D.E.A.C. (Cameroun, Congo-Brazza, Gabon, C.A.R., Chad)

III. Democratic Republic of Congo (Kinshasa and Kisangani)

IV. Lake Area (Kivu, Rwanda, Burundi)

V. Madagascar

VI. Somalia

(2) In the table which follows, "x" indicates that the main reason for rejection was the existence either of adequate local capacity and/or projects considered as certain, with other factors also possibly affecting the decision.

(*) Balance of text not available (Transl.)

PROJECTS EXAMINED BY THE EXPERTS

x: project rejected because of the existence of adequate local capacity and/or definite projects
-: project rejected for reasons other than the existence of local capacity
(..)project : project put forward by the experts

Products	W.Africa	UDEAC	Democr.Rep. of Congo	Lake Area	Madagascar	Somalia
Oil	x	x	x	3 projects	x	-
Margarine	1 project	x	x	-	-	-
Packed meat	-	x	-	2 projects	x	x
Dairy produce (milk, butter, cheese)	1 project	-	x	x	1 project	x
Canned vegetables	x	1 project	-	1 project	x	-
Canned fruit & juices	-	1 project	-	1 project	x	2 projects
Jams	-	-	-	1 project	x	-
Packed fish	1 project	-	1 project	1 project	-	x
Wheat flour	x	x	x	xx x	1 project	-
Husked rice	x	x	-	x	-	-
Biscuits	x	x	x	-	x	-
Glucose	1 project	-	-	-	-	-
Sugar	3 projects	x	x	-	x	x
Confectionery, chocolate	x	x	x	-	x	-
Cattle feeds	-	-	-	1 project	-	-
Malt	-	2 projects	-	1 project	1 project	-
Processed tobacco	x	x	x	-	x	-
Cotton yarns and fabrics	x	x	1 project	-	1 project	x
Jute and associated yarns, cloths & sacks	2 projects	x	x	-	x	-
Ropes and strings	x	x	x	-	-	-
Fishing nets	1 project	-	-	-	-	-
Knitted fabrics	x	-	-	-	-	-
Knitwear	x	x	1 project	-	x	-
Cotton blankets	-	x	1 project	-	-	-
Footwear	x	x	x	-	-	x
Garments (ready-to-wear)	x	x	x	-	x	-
Headgear	-	-	x	-	-	-
Fibre or shred panels (wood)	x	-	x	-	-	-
Wood furniture	x	x	x	-	-	-
Paper pulp	-	-	-	-	1 project	-

Products	W.Africa	UDEAC	Democr.Rep. of Congo	Lake Area	Madagascar	Somalia
Paper, cardboard, packing	-	1 project	1 project	-	-	-
Record, exercise and note books	x	-	-	-	-	-
Leathers & hides	1 project	x	-	2 projects	x	-
Pedal & motor cycle tyres	1 project	1 project	1 project	-	-	-
Car & lorry tyres	1 project	-	1 project	-	-	-
Plastic goods	x	x	-	1 project	1 project	-
Discs	-	-	x	-	-	-
Artificial & synthetic fabrics	-	-	1 project	-	-	-
Basic chemicals	-	1 project	-	-	1 project (caust.soda)	-
Paints & varnishes	x	x	x	-	x	x
Carbon dioxide	x	x	x	-	x	-
Glues	-	-	-	-	-	-
Matches	x	x	-	-	x	-
Sporting cartridges	-	-	-	-	-	-
Fertilisers	2 projects	1 project	-	1 project	-	-
Plant health products	-	x	-	2 projects	x	-
Pharmaceutical products	-	-	x	-	x	-
Soap	x	x	-	1 project	1 project	-
Detergents	1 project	x	1 project	-	x	-
Candles	-	-	-	-	x	-
Perfums, cosmetics, shaving cream	x	x	-	-	-	-
Shoe and furniture polishes, cleaning materials	x	x	-	-	x	-
Inks	-	-	-	-	-	-
Refined petroleum	-	x	x	-	x	-
Hollw glassware (bottles)	1 project	1 project	-	1 project	1 project	-
Ceramic & pottery	1 project	1 project	-	1 project	-	-
Cement	4 projects	x	x	x	1 project	1 project
Cement goods, asbestos-cement, fibro-cement	x	1 project	x	x	x	-
Concreting rods, steel bars & profiles	1 project	1 project	x	-	-	-
Sheet metal	-	-	x	--	-	-
Iron and steel cables	-	1 project	-	-	-	-
Sheet aluminium	-	x	-	-	-	-
Cast iron goods	x	x	-	-	x	-

Products	W.Africa	UDEAC	Democr.Rep. of Congo	Lake Area	Madagascar	Somalia
Wire goods	x	x	x	-	-	-
Nuts & bolts	1 project	1 project	x	-	x	-
Boilers & metal erections	x	x	x	-	x	-
Hand & agricultural tools	1 project	x	-	1 project	1 project	-
Door furniture & hardware	1 project	1 project	x	-	1 project	-
Metal drums, containers, food packing tins	x	1 project	-	1 project	x	-
Metal furniture	x	x	1 project	-	-	-
Wire mattresses	x	x	-	-	-	-
Aluminium household goods	x	-	x	-	x	-
Flatware and cutlery	-	-	x	-	1 project	-
Iron & enamelled household goods	x	x	-	1 project	1 project	-
Storm lamps	1 project	-	-	-	-	-
Crown corks	x	1 project	x	-	-	-
Agricultural machinery and spares	x	x	-	-	-	-
Copper cable	-	-	-	-	-	-
Refrigerators & air conditioners	1 project	x	-	-	-	-
Electric lamps	-	-	1 project	-	-	-
Accumulators	1 project	1 project	x	-	-	-
Dry cells	1 project	1 project	x	-	-	-
Boats and spares	x	x	x	-	x	-
Railway equipment	-	x	1 project	-	-	-
Motor vehicles (assembly) and spares	1 project	-	1 project	-	x	-
Pedal & motor cycles (assembly) and spares	x	x	1 project	-	x	-
Central workshop	-	-	1 project	1 project	-	-

I. WEST AFRICA

A. The general background

a) West Africa forms as it were an economic island, its relations with its African neighbours being slight towards the East and more or less non-existent across the Sahara, while trade with outside countries is comparatively intense along the whole of the sea-board.

The accidents of history have divided this part of the African continent into two large groups of countries, English-speaking and French-speaking, statistically registered trade relations between them being slight.

Since independence, the French-speaking states associated with E.E.C. (1) have experienced a distinct strain on the links, and especially on the economic unity, that united them under colonial rule, although repeated attempts at reorganization on the technical and economic planes are beginning to bear fruit.

This tendency to separation seems to be accentuating the heterogeneous nature of the Western area, which consists of relatively favoured regions and of poor regions : only the coastal countries have succeeded in making some little progress in the direction of industrialisation but even these countries are not developing to an extent that would allow them to prosper if less tiny markets were available to them, and their impetus is in danger of slackening.

b) The Western area of the African association counted a population of 25 millions in 1965 (31 millions in 1975). The G.I.P. of the area amounted to approximately 635 milliards F.CFA in 1964. However, the money income - over and above subsistence - amounted only to some 467 milliards, or an average of 19.500 F.CFA per head of population.

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(1) i.e. the following countries : Senegal, Mauritania, Mali, Togo, Dahomey, Niger, Ivory Coast and Upper Volta.

This rather modest figure should be read in conjunction with the weak position occupied by the secondary sector (22 %) and especially by manufacturing industry (6,4 %) in the G.I.P. of the area (over and above subsistence).

c) But the Western area is far from forming a homogeneous whole, owing firstly to the separation of markets from one another, but also to its size (4,4 million km2) and to the cost of transport as well as the uneven distribution of population, modern economic enterprises and money incomes.

- Consumers are concentrated on the coast and especially in the regions of Cap-Vert in Senegal and Abidjan on the Ivory Coast, and become more and more sparse the further inland one goes. These two countries count 29 % of the total population of the area.

The degree of urbanisation (1) is also distinctly higher in Senegal (27 %) and on the Ivory Coast (19 %) than in the other countries (11 % for the whole area).

- The geographic distribution of the G.I.P., of salaried employees and money incomes likewise confirms the importance of the Senegal and Ivory Coast markets, and especially of the agglomerations of Dakar (pop. 500.000) and Abidjan (pop. 320.000).

While the average money income per head of population for the area as a whole amounts to 19.500 F.CFA, it is 47.000 F.CFA on the Ivory Coast and 36.000 F.CFA in Senegal, compared with 8.000 F.CFA in Mali and 5.500 F.CFA in Upper Volta. The Ivory Coast is responsible for 40 % and Senegal for 26 % of the "trade" production of the area.

- The area's main points of contact with outside countries are the ports of Dakar and Abidjan, with Lomé and Cotonou a long way behind ; from these ports the links radiate inland. These radial links, and

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(1) towns with a population of more than 10.000.

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especially the railways, are less costly than cross-country movements (whether inland or by coastal traffic). In fact, the price per ton per kilometre by rail amounts to approximately 8 or 10 F.CFA, whereas by road it is never less than 12 F.CFA at best, and more often 20 F.CFA or more.

The cost of transport militates against the inland states in any plans they may make to employ their raw materials - and even more, imported materials - for manufacturing with a view to export to the coastal countries (where they are in danger of being unable to compete with products imported from outside countries) or to world markets. On the other hand it affords these same states some little protection when it is a question of manufacturing for their own market local raw materials, or even imported materials if the cost of access for the raw materials is distinctly lower than for the finished product.

- This being so, industrial undertakings have tended and continue to tend to be concentrated on two main centres : Dakar and Abidjan, and secondarily on a number of less important centres (Bamako, Cotonou, Niamey, etc.). The "external economies", born of the concentration in one place of undertakings producing goods and services, have steadily reinforced this spontaneous process of localisation, gradually lending it a cumulative and autonomous character.

Thus it has come about that the ten main industrial agglomerations (1) today use 74 % of the High Tension current consumed in the whole area, Dakar and Abidjan alone absorbing 60 %. These ten agglomerations count 67 % of the manufacturing undertakings of the area, Dakar and Abidjan having 44 %. Out of an approximate total of 470.000 salaried employees for the area, the Ivory Coast (194.000) and Senegal (110.000) account for almost 2/3.

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(1) Dakar, Abidjan, Cotonou, Bamako, Niamey, Lomé, Ouagadougou, Bobo-Dioulasso, Bouaké, Thiès.

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The concentration of consumers, money incomes and industrial undertakings on the Ivory Coast and in Senegal is also reflected in the dominating part played by these two countries in the total imports for the Western area : during 1964 and 1965, the Ivory Coast took just under 40 % and Senegal just over 25 %.

d) Availability of labour appears to present no particular problem thanks to local training - at least up to the level of the certificat d'aptitude professionnelle or the brevet industriel -. On the other hand, the higher one goes in the professional hierarchy, the more frequent are the claims on skilled foreign labour. Thus, on the Ivory Coast, 83 % of the executives and 58 % of the management are non-African salaried employees ; this percentage falls to 9 % for clerks and 2 % for skilled workers.

The area has considerable resources in raw materials; however few of them are of interest to industries aiming to replace imported goods with products manufactured locally (cotton, rubber, sugar cane, phosphates, limestone, clay, etc.). The possibilities for using local raw materials in factories responsible for manufacturing goods for export are greater and are already being exploited to some extent, for instance, in the field of fat products (palm and ground-nut oil), wood (peeled, laminated), and fish. But a large proportion of materials are exported in the raw state (coffee, cocoa, mineral products, etc.).

It would certainly be desirable for a higher proportion of raw materials to be exploited locally in the future ; but the realisation of such an aim presents technical problems and problems of price that require careful study.

Water for industrial use does not, except in a very few cases, present a major problem for industrialisation. Depending on circumstances, factories are connected to the distribution networks for drinking water (on payment of a fairly high rate : 30 to 50 F. per m3, sometimes with

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a scale of charges decreasing in proportion to the volume consumed) or are fed directly from underground water. This last procedure is not however to be recommended and in the industrial areas the whole of industry should eventually be fed from the networks.

Four-fifths of the electric power is still based on imported hydrocarbons ; power from hydro-electric installations does not exceed 52.000 kva out of a total of 239.000 kva. The hydro-electric potential which is considerable in certain states such as Mali offers little possibility of immediate exploitation on a large scale owing to poor siting. Only Dakar and Abidjan have large modern power stations ; everywhere else the conditions of production lead to high prices per kwh and more especially far too many industrial concerns produce their own electricity instead of joining the main network. The two refineries recently established at Dakar and Abidjan are capable of meeting the demand, while at the same time varying production to meet the needs of different types of user ; they have so far been obliged to have recourse to imported raw material, though research on hydrocarbons is being undertaken in some states.

B. Joint and concentrated industrial development

From the foregoing considerations it emerges that, individually, the states in the area are not of sufficient size economically to sustain a satisfactory degree of industrial development and that the separation of markets is calculated to prevent the states as a whole, including the two relatively advanced countries, from reaching the level of development they are aiming at.

Unless reorganisation of the markets is begun very soon, there is a danger of national antagonisms springing up and of a continuation of the present trend increasing the unevenness of development between states.

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No doubt, given the size and the fundamentally heterogeneous character of the area, it would be vain to hope that unification of markets would lead to an evening out of levels of development. Similarly, it would be unrealistic to suppose that all replacement industries would forthwith supply the entire markets of the area.

Geographic, demographic and economic limitations, which are of a permanent nature, will continue to influence the siting of production units, even within the framework of joint planning on a multinational scale. Furthermore, the minimum scale of the multinational market will vary from product to product.

As regards replacement industries, it will be most possible to site these inland when raw materials are available locally and the cost of transporting such materials is high.

It will be advisable as far as possible to avoid scattering undertakings geographically, in order to exploit and develop to the maximum the "external economies" attached to centres of growth. Each of the states in the area would then have a single main industrial centre, except for Senegal and the Ivory Coast which would have two, each centre to include both nationally and multinationally oriented undertakings.

A joint policy of industrialisation on a multinational scale and aiming at the development of centres of growth is the only policy which can benefit at once the whole West African area and each of the individual states. An important presupposition of such a policy is that the countries coordinate simultaneously their policies with regard to infrastructure and particularly with regard to the improvement of communications between centres. It might also involve setting up systems of compensation, should it prove necessary, for reasons of balance and equity, to allow the less favoured states to share in the comparative advantages, both natural and acquired, of the more favoured countries.

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C. The experts' proposals

1. The global prospects

After eliminating products which it would appear to be impossible, premature or inopportune to manufacture in the area, there remain 24 categories of product, and 31 sites proposed for the West African area.

All these projects together represent a total investment of 26,6 to 31,3 milliards of CFA francs (1), creating work for between 9.400 and 9.700 salaried employees (2). The projects would produce an addition to local added value of between 4,1 and 4,5 milliards of CFA francs and a saving in foreign currency of 434 to 726 million CFA francs (3).

Among the 31 sites of proposed undertakings, there are serious doubts concerning ten (4), realisation of these being subject to important prior conditions. These less certain projects represent investments of 5,6 to 6,6 milliards of CFA francs, a thousand jobs, 1,1 milliard CFA francs of local added value and a saving in foreign currency of only 36 million CFA francs per annum.

The sites proposed are inevitably unbalanced. The main centres of Dakar and Abidjan are together allotted 15 projects. The secondary centres of Bamako, Niamey and Cotonou-Lomé are each suitable for at least one project with a multinational market, and other projects are distributed among all the states and are located outside the development centres owing to the imperative need to site undertakings close to their source of supply.

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(1) depending on the equipment and capacities planned (cost of establishment and setting in operation only)

(2) estimate for 22 products, data not being available for two products (thread, fabric and sacks in hard fibre; parts for motor vehicles)

(3) estimate for 20 products, data not being available for the others (thread, fabric and sacks in hard fibre; parts for motor vehicles; sugar; and fertilizers)

(4) Glucose ; thread, fabric and sacks in hard fibre ; tyres for cars and lorries ; detergents ; agricultural and hand tools ; woodwork and ironmongery ; storm-lanterns ; parts for motor vehicles ; Kamea cement works.

Such imbalance, geographically, among the projects proposed is not however surprising since only those industries have been studied which produce goods capable of replacing imports and requiring a fairly wide market, extending in fact to several states. A complete - and of course a more balanced - picture of the industrialisation of each of the states in the area would take into account all the sectors of industry not touched on in this study.

2. The 24 products retained

(1) Margarine

Imports into the area have risen sharply since 1955 ; they amount to 1.088 t. in 1964 (of which 718 t. went to Senegal). The total market for the area has been estimated at 1.650 t. in 1970 and 2.800 t. in 1975, of which 1.100 t. and 1.800 t. respectively will go to Senegal.

Although an enterprise (1.200 t. output per annum) already exists in Abidjan, a new unit with an output of 1.000 t. could supply the Mauritania-Senegal-Mali group. The new enterprise would be more profitable if it were attached to an existing oil factory.

The actual total added value is some 63 million CFA francs but Senegal would suffer an appreciable fiscal loss (51 million F.CFA). This might however be improved as a result of indirect effects. Realisation of the project would not bring any saving in foreign currency, on the contrary it would involve a loss unless indirect effects compensated for it.

(2) Dairy produce

The market for the area is at present satisfactorily catered for by imports (in 1964 : 1.930 t. of milk, 18.420 t. of condensed milks, 1.257 t. of butter and 1.172 t. of cheese), by local production based on imported powdered milk and by milk production. The future market for dairy produce is likely to rise to 56.000 t. (in the equivalent of fresh milk) in 1970 and 74.000 t. in 1975 for the whole area ; the market for butter for the same years may be estimated at 1.650 t. and 1.900 t. ; and for cheese at 1.350 t. and 1.450 t.

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Local resources in milk, estimated at some 1,6 milliard litres per annum, exist mainly in the inland countries and trade is minimal ; it would therefore be worth attempting industrialisation, in spite of the difficulties presented (poor yield, irregular production during the year, difficulty of collection). Uncertainty as to possibilities and regularity of supply has led to the proposal that a beginning be made with one or two centres for processing local milk and that the operation be extended later on the basis of experience, if it seems indicated, to other centres. The most suitable locations are at Saint Louis, Bamako, Ouagadougou and Niamey.

A centre handling 5.000 litres a day would require an investment of 50 million F.CFA and would make possible a cost price per litre of pasteurised milk lower (-30 F.CFA) than that of imported full-cream milk. The actual total added value would be some 25 million CFA francs but the fiscal loss (2 million CFA francs) must be taken into account. The saving in foreign currency would amount to 13 million CFA francs.

(3) Tinned fish

Imports of fish into the area have been constant for ten years. They include a high proportion of tinned sardines (1.540 t. of sardines and 630 t. of other fish on average per annum, between 1962 and 1964). Tinned sardines are produced in Senegal and a factory is planned on the Ivory Coast (including the Volta market).

The Niger-Dahomey-Togo region offers a sufficiently large market (630 t. in 1970, 740 t. in 1975) to justify installation of a small factory for tinned sardines in oil.

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A capacity of 400 t. per annum semi-manufactured would involve an investment of 85 million F.CFA and profitability of 5,7 %, employment for 110 people and an actual total added value of 31 million F.CFA. Twice this capacity would require an investment of 137 million F.CFA with a gross profitability of 19 %, employment for 187 people and an actual total added value of 65 million F.CFA. The saving in foreign currency would amount to a maximum of 23 or 55 million F.CFA according to the capacity chosen. However, in order to achieve these results, taxation on imports would have to be raised by 20 %, imported "inputs" (notably tins) exempted and fresh fish available for purchase at 20 F.CFA per kg to factory. Additional measures for lowering the cost prices (packaging) and a joint policy for an export drive to the English-speaking countries would further increase the profitability of the project. In any case, it is essential that the project be conceived in close conjunction with the plans for the development of the fishing industry in Togo or Dahomey and in association with canning factories with adequate experience of operating in Africa.

(4) Glucose

The present market for the area is fed entirely by imports which amounted to 1.572 t. in 1964 and 780 t. in 1965. Estimates of glucose consumption depend on two factors, the production of preserves (which is increasing) and the proportion of glucose consumed by producers of preserves (which is falling). Assuming the present proportion of glucose to be maintained and estimating production of preserves at 6.000 t. for 1970, the market in glucose would be in the region of 1.200 t. in 1970.

The lowest acceptable production capacity amounts to 900 - 1.200 t. per annum ; to be profitable, it requires the proximity of a starch factory. The only starch factory in the area is situated in Togo, at Ganavé. At 900 t. per annum, the factory can be competitive only within an inadequate consumption area ; at 1.200 t. per annum, the doubtful nature of the market does not guarantee absorption of the whole of the output. In these circumstances, unless it is wished to postpone establishment of

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the factory pending improvement of the market, additional outlets should be sought outside the area, and especially the possibilities studied of selling to Ghana and Nigeria.

The undertaking would require an investment of 38 million F.CFA and would bring an actual total added value of 14 million F.CFA, without fiscal loss. The annual saving in foreign currency would be some 9 million F.CFA.

(5)(6)(7) Sugar

The eight countries studied produce no sugar at all and have up to now been supplied by imports within the framework of the sugar agreements of the Franc area ; purchases amounted to 140.000 t. of sugar in 1965.

When the future market of the area (excluding Mali (1) - 175.000 to 200.000 t. in 1970, 220.000 to 260.000 t. in 1975 - is compared with the possible surpluses of Congo-Brazzaville and Madagascar (some 150.000 t.), it must be concluded that it is not desirable that the production of the seven states in the area who are members of the Afro-Malagasy Common Organisation (whose members are linked by an agreement on sugar) exceed 60.000 t. in 1975. Consequently, it is only possible to envisage three projects :

- one for Mauritania and Senegal (at Gorgol-Noir or Richard Toll-Diovol) subject to further study ;

- one for the Ivory Coast and Upper Volta (Bandama or Banfora), preference going to the Banfora site owing to the more advanced state of studies of this project and to the economic inferiority of Upper Volta compared with its neighbour, which would in this way be to a very small extent made up.

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(1) Mali, which receives aid from China, will have at its disposal (Ségou) a capacity of 20.000 t. of sugar per annum. This country has not signed the OCAM (Afro-Malagasy Common Organisation) sugar agreement and aims at becoming self-supporting.

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- one for Niger, Dahomey and Togo, the choice between sites (Tillabéry or Mono) to be made on completion of current studies.

Three units producing 60.000 t. of sugar per annum would increase the national income of the area by 2 to 3 milliards F.CFA per annum, including secondary effects. The profitability of the undertakings and the other results they would have for the community could not be estimated on the basis of information at present available to the experts.

(8((9) Thread, fabric and sacks in hard fibre (jute or allied products

Leaving out of account the Senegal, Mauritania and Ivory Coast markets whose needs are or will be covered by existing undertakings or undertakings under construction, the five other states of the area represent a market of 6.300 t. in 1975 (imported full sacks deducted).

The minimum capacity of a factory being some 3.000 t. per annum, there would therefore be room for one or even two new units by 1975.

Any decision to establish a factory is however subject to completion of agronomic studies which have been undertaken to determine the real possibilities for local cultivation of "dah", since only factories using local fibres are of interest tothe community to which they would bring 6 to 7 times as much added value as they would if they used only imported fibres. It is therefore impossible at present to submit concrete proposals. Although the difficulties likely to arise in connection with transport in bulk and competition from synthetic fibres should not be under-estimated, it would appear that Mali and Niger stand to benefit from these factories.

(10) Fishing nets

Current statistics of imports for the area (100 to 110 t. per annum) are invalidated by the existence of illegal imports (notably Japanese products), covering at least half the market and coming from the neighbouring English-speaking countries where import tax is low or non-existent.

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Under present conditions, the future market has been estimated at 170 t. in 1970 and 250 t. in 1975 ; taxation agreements between the French- and English-speaking states would certainly double it.

A factory producing 150 t. per annum would require an investment of 185 million F.CFA yielding a profitability of only 1,2 % given no tax concessions, would create 87 jobs, and would increase national revenue by 95 million F.CFA and fiscal returns by 23 million F.CFA. The saving in foreign currency would amount to some 67 million F.CFA.

An undertaking producing 300 t. would require an investment of 340 million F.CFA with a profitability of 6,2 %, would create 160 jobs, and would produce an actual total added value of 193 million F.CFA and fiscal returns of 61 million F.CFA. The saving in foreign currency would amount to 144 million F.CFA. The first capacity would thus be profitable given reasonable tax concessions, the second would require none. It would be desirable for this factory to be associated with an established textile concern (at Dakar or Abidjan); this would increase profitability by spreading the fixed costs.

(11) Hides and skins (of sheep and goats)

Existing or projected capacities for tanning cattle-hides have directed attention to the possibility of tanning sheep and goat-skins. This industry would not replace imports; it would aim to employ local resources and to export outside the area. The E.E.C. market for these products is expanding and there are other possible outlets, notably in the EFTA countries.

The tanneries handling cattle-hides (Ouagadougou and Dakar) already tan a certain number of skins of smaller animals. There are in the area two projected cattle-hide tanneries finance for which is forthcoming - at Bamako and Kaedi - and they plan to handle sheep and goat-skins also.

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Apart from these possibilities and projects, it would appear that Niger is particularly suitable for the installation of a chromium tannery for the skins of small animals, with a capacity for handling 350.000 goat-skins and 100.000 sheep-skins; this would be in keeping with the supply, since the country's annual production amounts to about 1.925.000 goats and 525.000 sheep, and with the possibilities for disposal on outside markets, especially those of Western Europe.

The investment required by this undertaking, situated at Maradi, would be in the region of 155 million F.CFA. The undertaking would be profitable (12,3 %) and its competitiveness in markets outside the area would be guaranteed. Its realisation would bring in an actual total added value of 51 million F.CFA, without the state suffering any fiscal loss. In addition, various indirect effects might considerably improve the local added value. The saving in foreign currency would be some 30 million F.CFA.

(12) Tyres for touring cars and lorries (tyre-covers and inner tubes)

The market is at present entirely supplied by imports. In 1964, imports of tyre-covers amounted to 1.300 t. of light tyres and 3.300 t. of heavy tyres (290.000 units in all) in addition to the tyres on new imported vehicles. With a market of approximately 350.000 sets (tyre-cover and inner tube) (5.000 t.) in 1970 and 450.000 sets (6.000 t.) in 1975, not including the tyres on new vehicles, the area could accommodate a factory with a capacity of 100.000 heavy tyres, 200.000 light tyres, and the corresponding inner tubes. The best site would be on the Ivory Coast which produces rubber and where there is the largest market for tyres.

A factory of this kind would require an investment of 2,7 to 3,3 milliards F.CFA which would produce an annual gross profit of 9,5 %. Establishment of the factory would bring the community a large actual total added value (770 million F.CFA). At first sight there would appear to be no saving in foreign currency (negative figure : - 48 million F.CFA) but

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but intermediate consumption may compensate for this negative value. In particular the Ivory Coast would suffer a fiscal loss of 247 million F.CFA resulting from the reduction of imports. The projected undertaking would also be subject to technological hazards (present tendency towards new types of product ; increasing use of synthetic rubbers) ; only a specialised firm already established in the market could confirm the profit potential and take responsibility for realising the investment.

Of course, if it was decided to proceed with this manufacture, it would be advisable to combine it with the production of two-wheel tyres.

(13) Tyres for cycles and motor-cycles

The market for the area is at present almost entirely supplied by imports (except for local production based on semi-manufactured imported products and established in 1965). Imports in 1962-64 amounted to 1.310.000 inner tubes and 1.300.000 tyre-covers per annum, 2/3 of which went to the Ivory Coast and Upper Volta. The market is likely to amount to 1,5 to 1,7 million sets in 1970 and 1,7 to 2 million sets in 1975.

A production unit serving the market of the entire area could be installed now in the Ivory Coast. Tax concessions would be necessary at first but not after 1975, provided there was no competition, i.e. no other similar undertaking was established : In fact, a capacity of 750.000 sets per annum guarantees a return on investments of only 3,4 %, while a capacity of 2 million sets sends this figure up to 8,1 %.

The first capacity would require an investment of 500 million F.CFA, and would provide 127 jobs and an increase in national revenue of 132 million F.CFA ; the second capacity would require an investment of 1 milliard F.CFA but would provide 276 jobs and would increase national revenue by 332 million F.CFA. The annual saving in foreign currency

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would be 40 or 180 million F.CFA depending on the capacity chosen. The cooperation of an experienced producer would be necessary in establishing this factory.

(14)(15) Fertilizers

Present imports are comparatively restrained but are increasing rapidly : they rose from 8.000 t. in 1955 to 53.000 t. in 1964. The market could amount to 200.000 t. in 1970, if the rate of increase in consumption is maintained with improvement and speeding of rural development.

Copious resources in natural phosphate provide the area with its principal advantage and pretext for production of fertilizers.

Two projects for fertiliser factories have been elaborated in Senegal and the Ivory Coast ; it would appear that simultaneous realisation of these two plans would be in the area's best interests, bearing in mind that the reduction in the cost of distribution made possible by the existence of two factories outweighs the saving from large-scale production made possible by concentration in a single unit.

- the Dakar factory would produce 120.000 t. of compound fertilizers on a variety of formulas ; it would sell its output in Senegal itself and would export a part of it.

- the Abidjan factory would produce 12.000 t. of simple superphosphates, 20.000 t. of sulphate of ammonia and 30.000 t. of compound fertilizers ; it would sell its output in Ivory Coast and Upper Volta.

After 1970, if the sharp rise in the consumption of fertilizers continues, the two factories will have to plan for larger capacities.

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(16) Detergents

It is not possible to estimate the future market in detergents, since this is a new product not yet out of the launching stage, so that the past trends (21 % annual growth rate between 1958 and 1964) cannot be exterpolated. On the basis of present imports (3.000 t.), growth rates of 10 and 15 % would give a consumption of 5.500 and 7.200 t. in 1970. A spray drying tower (capacity 1 t./hr.) exists at Abidjan and another is planned in Senegal (0,5 t./hr.) ; together they represent an annual capacity of 9.000 t. when in continuous operation, and are likely to be able to supply the area up to 1970. However, if consumption developed sufficiently fast and demand was directed more towards local products, it might be possible to think of a third spray drying tower about 1975 in Togo or Dahomey.

A factory of this kind at Cotonou would require, for production of 1.000 t. per annum, an investment of 160 million F.CFA. It would have to face considerable expenditure on advertising in order to compete with imported products and even then could guarantee a gross profitability of only 5 %.

The actual total added value would be 34 million F.CFA. The only negative feature would be the effect on foreign currency (-10 million F.CFA) but here too intermediate consumption of goods and services (packaging, advertising) might improve the situation. The project involves large fiscal losses.

(17) Glassware (bottles)

In 1964 the area imported 7.200 t. of bottles (excluding movements of returned bottles between countries in the area) and 821 t. of other glassware. There is at present no local production. A glass factory with a capacity of 7.500 t. per annum, serving the whole area and working at full capacity, could be profitable. Market estimates,

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although uncertain, suggest an overall demand for glass receptacles amounting to 8 to 10.000 tons in 1970 or 1975.

The factory should be established on the Ivory Coast or possibly in Senegal where demand is highest ; a final decision on siting can only be taken after study of the respective qualities of the two countries' local resources in vitrifiable sand.

An undertaking producing 7.500 t. of glassware per annum, 4.000 t. to be exported within the area, would require an investment of 530 million F.CFA yielding a gross profit of 7 %.

The actual total added value accruing from this project would be 124 million F.CFA. There would be scarcely any effect on foreign currency (-7 million F.CFA) but this unfavourable aspect could be eliminated owing to the additional added value from intermediate purchases and especially from the extraction of local raw materials.

(18) Ceramic and earthenware manufactures

There are high figures for consumption of tiles (imports : 5.500 t. in 1964), sanitary equipment (840 t. imported in 1964), and earthenware crockery (500 t. imported in 1964). Discernible trends in future market estimates for the area are uncertain for tiles (5.500 t. in 1970), rising for sanitary equipment (1.600 t. in 1970), and falling for crockery but with a possibility of compensation through manufacture of low-priced goods. If the states give the new local production generous access to their markets, a factory could be planned with an annual output of 3.000 t. of tiles, 1.000 t. of sanitary equipment and 1.000 t. of crockery.

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Local resources in ceramic materials have been catalogued in Senegal, Ivory Coast, Upper Volta and Niger, but the preliminary studies show that only the first two locations offer an acceptable degree of profitability. The highest profitability would be obtained by siting in Dakar.

This establishment would require an investment of 600 million F.CFA, and would yield a gross capital return of 19 % without tax. It would bring an actual total added value of 252 million F.CFA without fiscal loss. The saving in foreign currency would be 147 million F.CFA per annum.

A few doubts remain to be resolved as regards availability of raw materials and their price to factory. It is not impossible that more exact data may alter the estimates so as to give the preference to siting on the Ivory Coast.

(19)(20)(21)(22) Cement

Consumption of cement in the area amounts at present to 550 to 600.000 t. It is likely to exceed 800.000 t. in 1970 and to amount to 1.150.000 t. in 1975.

Present installations have a capacity of a little more than 200.000 t. in Senegal (Bargny) and 45.000 t. in Niger (Malbaza), not including 300.000 t. of clinker crushing at Abidjan. There are plans for establishing new cement works in various states, but careful study of the estimated cost prices shows that only three of these would be viable at present and that the best distribution would be as follows :

- an increase of 100.000 t. at Bargny in Senegal.

- a cement works producing 50.000 t. at Hamea in Mali, realisation of this project depending on completion of the Gouina dam.

- establishment at Half-Assini on the Ivory Coast of a high capacity cement works, common to Ivory Coast and Ghana, and capable of producing 300.000 t. of clinker per annum which would exactly meet the needs of the crushing works at Abidjan.

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- creation of a cement works producing 100.000 t. at Aveta in Togo, provided that the doubts that still exist regarding the deposits of limestone are resolved.

The projects submitted by Mauritania and Upper Volta would not appear to merit attention in the medium term. The plan submitted by Mali for a cement works (50.000 t. per annum) at Hamea depends on the possible future construction of the Gouina dam which would provide it with a good outlet from the outset. It would then bring an addition to added value of 20 million F.CFA.

The added value would be 320 million F.CFA for Bargny, 290 million F.CFA for Hamea, 340 million F.CFA for Half-Assini and 450 million F.CFA for Aveta. The saving in foreign currency afforded by the three projects of Bargny, Hamea and Half-Assini are meagre : they would amount altogether to 170 million F.CFA. Creation of the unit at Aveta however have a negative effect from this point of view (- 246 million F.CFA) ; only further growth of the market would improve this situation.

(23) Iron rods for concrete, steel bars and sections.

The study was confined to small-scale smelting (using scrap-iron or metal billets) and rolling of iron or steel bars or sections. In 1964 the entire market of the area was supplied by imports, there being no local production ; they amounted to 33.000 t. of bars and 21.000 t. of sections. Future demand may be estimated, for 1970, at 43.500 t. of bars and 25.000 t. of sections and, for 1975, at 64.000 and 32.000 t. respectively. It is estimated that approximately 80 % of the bars and 65 to 70 % of the sections could be produced locally, that is atotal of 52.000 t. in 1970 and 62.000 t. in 1975.

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A rolling capacity of 35.000 t., using imported metal billets and working two and perhaps later three shifts, would appear reasonable. Studies of possible sites show the most economical to be a rolling mill to be established at Abidjan.

The required investment (1.500 million F.CFA) would show a very satisfactory profitability.

Realisation of the project would bring a local added value of 119 million F.CFA at the cost however of a fiscal loss of 106 million F.CFA for the Ivory Coast. The annual saving in foreign currency would amount to 447 million F.CFA.

(24) Bolts

The West African area imported in 1964 1.400 t. of assorted nuts and bolts. There is at present no local production in this sector. The future market is estimated at 1.650 t. in 1970 and 1.900 t. in 1975 ; this includes however 20 to 25 % of specialised goods which could not be manufactured locally.

An Abidjan enterprise is planning to extend production in 1969 to include a capacity of 500 t. of nuts and bolts ; there would seem to be an interest in planning an additional unit at Dakar to serve the Mauritania-Senegal-Mali market.

This new enterprise, having a capacity of 400 t., would require an investment of 106 million F.CFA. It would show substantial profitability if integrated with an enterprise already engaged in metal goods manufacture.

The actual total added value would be 33 million F.CFA. There would be an appreciable fiscal loss for Senegal (- 39 million F.CFA). The number of jobs created would be small : 28. The effect on the foreign currency situation would be negative (- 15 million F.CFA) but this loss might be compensated for by the indirect effects on the economy.

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(25) Agricultural and hand tools

Although any estimate of the future market in this field is very uncertain, on the basis of present imports (2.500 t. in 1964) it is possible to estimate future demand at 2.600 to 2.900 t. in 1970 and over 3.000 t. in 1975, but these tonnages represent a wide range of types and sizes. Detailed study would be needed to give a better picture of the structure of the demand and to determine which articles could be manufactured locally. Apart from a little artisan production, there is no local manufacture.

A local enterprise, to be sited at Abidjan owing to the geographical distribution of the demand, with a production programme of 900 to 1.000 t., would require an investment of 255 million F.CFA and would give a gross margin of 5 % barely enough to pay for the sum invested.

It is therefore essential to analyse the market in great detail before any decision is taken to establish an undertaking. The factory should furthermore be capable of integration into a larger undertaking engaging in other metal goods manufacture.

(26) Woodwork and ironmongery

In this field also, the future market is difficult to determine owing to the great variety of articles. Imports which supplied the entire market were about 1.900 t. in 1964 ; they could amount to 2.500 t. in 1970 if past trends continue.

A workshop sited in Abidjan, producing 1.600 t. of articles per annum, is worth considering ; with an investment of 440 million F.CFA which would give a gross margin of 7,5 % per annum, it would guarantee an actual total added value of 141 million F.CFA, a saving in foreign

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currency of some 38 million F.CFA and would provide work for 232 African salaried employees. If it were integrated with a workshop producing hand tools the profitability of the whole concern would be improved.

(27) Household goods in iron (storm-lanterns)

The market is entirely supplied by imports. Market trends are uncertain but it would appear that consumption of storm-lanterns, already considerable (470 t. in 1964), is like to continue to grow in the future.

Since the Ivory Coast constitutes the largest market, the projected factory should be established at Abidjan. The factory would produce 300 tons per annum of lamps on the present design but could also with advantage be integrated with a larger metal manufacturing concern. The project calls for an investment of 290 million F.CFA which would give a gross margin of 6,5 %. The actual total added value conferred by the project on the country concerned would be in the region of 75 million F.CFA. Account must be taken of the fiscal loss of 21 million for the Ivory Coast. The saving in foreign currency would amount to 28 million F.CFA. Employment would be provided for some hundred salaried employees.

(28) Refrigerators and air conditioners

All air conditioners and refrigerators are imported. The average number of items imported annually during the period 1963-65 was 6.600 air conditioners and 8.600 refrigerators, approximately half of which went to the Ivory Coast.

Future demand for articles of the classic design is likely to amount to 8.600 air conditioners and 11.700 refrigerators in 1970, and 10,700 air conditioners and 16.700 refrigerators in 1975. Manufacture of compression groups for cold production is technically impossible in

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Africa ; however, a unit could make the cabinets and constructions to hold them ; owing to the variety of designs, only half could be made locally.

Abidjan would be the most suitable location. A factory with a capacity of 5.000 air conditioners and 5.600 refrigerators per annum would require an investment of 324 million F.CFA.

The factory could begin production about 1970, given some temporary fiscal concessions at the outset. Working at cruising speed, it would eventually achieve a profitability of 7,8 % after tax and without the initial fiscal concessions.

Depending upon the size of unit chosen, the undertaking would provide 57 or 109 new jobs, would increase national revenue by 74 or 159 million F.CFA and would yield a saving in foreign currency of 18 or 51 million.

(29) Car batteries

Local production (Dakar) has up to now supplied only 10 % of the area's consumption (1.200 t. in 1964). On the basis of a very general estimate of the total number of cars, demand for batteries could exceed 1.700 t. in 1970 and 2.200 t. in 1975 for the whole area.

Since little is saved by large-scale production in this type of undertaking, a new manufacture started at Abidjan would have at its disposal a large national market already existing, and would enjoy an excellent location from the point of view of the cost of operation.

A workshop producing 45.000 batteries per annum would give an excellent rate of profitability : on 132 million F.CFA investment, the undertaking would show a gross margin in the region of 58 %, perhaps rather less if reductions are offered to big consumers and if a big publicity drive is undertaken.

The community would receive an actual total added value of 100 million F.CFA. The annual saving in foreign currency would amount

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to 49 million F.CFA. It has not been possible to estimate the exact effect on fiscal revenue but it seems unlikely to be adverse. The project would create jobs for 38 Africans.

(30) Dry batteries

Imports for the whole area amounted to 4.500 t. in 1964, 45 % of which went to the Ivory Coast alone. Overall demand, which is rising sharply, could reach 6 or 7.000 t. in 1970 and 9 or 10.000 t. in 1975. There is at present no production in the area.

Allowing that eight tenths of the demand (round batteries of 1,5 V and flat batteries with three elements of 4,5 V) could be met by local production, although theoretically there would be room for several units in the area, working a number of shifts has considerable advantages and it is therefore suggested that only one factory be established initially in a country having a good market, i.e. Senegal or Ivory Coast; Initial production on one shift would be 800 t., increasing with the development in demand and its accessibility to local production.

This undertaking would require an investment of 300 million F.CFA, giving the entrepreneur a gross margin of 12 % (working three shifts) and perhaps rather less at first.

Actual total added value would be considerable (178 million F.CFA) but would be realisable only at the cost of a loss of fiscal returns of 30 million F.CFA. The saving in foreign currency would be fairly small (18 million F.CFA). The number of jobs created would be in the region of 170.

(31) Spare parts for motor vehicles

It is impossible, for technical reasons, to consider the possibility of manufacturing engines, pumps and accessories for vehicles, but many other parts could be manufactured locally (and already are

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to some extent in Senegal) on the basis of imported raw materials or semi-finished products. The future market for parts of this kind depends on the increase in the total number of vehicles in the area and on the production programmes of the three existing assembly belts which could reach maximum development given "multi-make" assembly (without the addition of further belts) which would provide adequate markets for the subsidiary producers supplying parts.

The variety of customs regulations makes any exact study of the market impossible. Since estimates of the present total numbers of vehicles vary greatly, it is also impossible to predict their development with any degree of accuracy. Valid estimates of cost prices are likewise impossible to give with any certainty. However, whether it is a question of assembly (of limited interest economically) or manufacture of parts, commercial vehicles bring in a higher added value than private cars.

W E S T

SUMMARY OF

Ref.	Product to be manufactured	Capacity p.a.(1)	Location	Investment million CFA	Investment thousand UC
1	Margarine	1.000 t	Senegal	106	429
2	Dairy produce	1,8 mio l	Ouagadougou	50	205
3	Tinned fish	400 t	Lomé or Cotonou	85	344
		800 t		137	554
4	Glucose	1.200 t	Ganavé	38	154
5	Sugar	20.000 t	Richard Toll or Gorgol Noir	2.000 to 3.000	8.000 to 12.000
6		20.000 t	Banfora	2.000 to 3.000	8.000 to 12.000
7		20.000 t	Tilabery or Mono	2.000 to 3.000	8.000 to 12.000
8	Thread, fabric and sacks in hard fibre (jute or allied)	3.000 to 3.500 t	Ségou	500 to 800	2.000 to 3.200
9		3.000 to 3.500 t	Niamey or Maradi	500 to 800	2.000 to 3.200
10	Fishing nets	150 t	Abidjan	185	745
		300 t		340	1.375
11	Hides and skins	35.000 goats 100.000 sheep	Maradi	155	628
12	Tyres for cars and lorries	4.600 t	Ivory Coast	3.300	13.400
13	Tyres for cycles and motor cycles	750.000 s	Abidjan	506	2.049
		2.000.000 s		1.004	4.065
14	Fertilizers : compound	120.000 t	Dakar	2.500	10.000
15	various	62.000 t	Abidjan	1.000	4.000
16	Detergents	1.000 t	Lomé or Cotonou	160	650
17	Glassware (bottles)	7.500 t	Senegal or Ivory Coast	532	2.154
18	Ceramics	8.700 t (3)	Senegal or Ivory Coast	600	2.430
19	Cement	100.000 t	Bargny	1.260	5.100
20		50.000 t	Hamée	1.390	5.630
21		100.000 t	Avéta	2.010	8.149
22	Clinker	300.000 t	Half-Assini	2.280	9.230
23	Rods for concrete, steel bars and sections	35.000 t	Abidjan	1.533	6.206
24	Bolts	440 t	Dakar	106	429
25	Agricultural & hand tools	900 t	Abidjan	255	1.032
26	Woodwork and ironmongery	1.625 t	Abidjan	440	1.780
27	Storm-lanterns	300 t	Abidjan	290	1.175
28	Refrigerators and air conditioners	2.500 ac .2.800 r	Abidjan	218	883
		5.000 ac .5.600 r		324	1.312
29	Car batteries	675 t	Abidjan	132	534
30	Dry batteries	2.400 t	Dakar or Abidjan	295	1.194
31	Spare parts for motor vehicles	...	Dakar or Abidjan or Lomé or Cotonou	150 to 500	450 to 1.500

(1) unit : t - ton; l - litre; s - set (1 tyre cover and 1 inner tube)
(2) balance of actual local added value corresponding to the saving in foreign currency
(3) including 2.850 t tiles, 4.950 t sanitary equipment, 900 t crockery
Key to signs: - - estimate impossible; ... - information not obtained
A unit of currency corresponds to 246,853 F.CFA

The operating costs include technical depreciation of plant and buildings; they do not inclu
Profit : difference between turnover and operating costs. It therefore represents a gross
leaving a residue of (net) profit.

For the sake of uniformity, estimates and calculations have all been made in CFA francs, even
The official rate of exchange of the Mali franc is in parity with the CFA franc but it is not

ECONOMIC DATA

Operating costs million CFA	Operating costs thousand UC	Annual foreign currency saving M CFA	Annual foreign currency saving th.UC(2)	No.of new jobs	Investment per new job M CFA	Investment per new job th.UC	Added value actual total (4) M CFA	Added value actual total (4) th.UC	Profitability profit invest. %	Profitability profit t.over %
119	481	-28	-113	14	7,5	30	83	255	45,3	28,3
67	272	13	53	18	2,8	11	25	101	31,1	21,5
86	356	23	93	110	0,8	3,2	31	126	5,7	5,2
157	636	55	223	187	0,7	3,0	65	263	19,0	14,0
29	116	9	36	22	1,7	7	14	57	9	8,5
-	-	-	-	2.000	1 to 1,5	4 to 6	-	-	-	-
-	-	-	-	2.000	1 to 1,5	4 to 6	-	-	-	-
-	-	-	-	2.000	1 to 1,5	4 to 6	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
161	652	67	271	87	2,1	8,6	95	385	31,9	26,8
298	1.206	144	583	160	2,1	8,6	193	781	41,8	32,3
117	474	30	121	60	2,5	10	51	206	12,3	13,2
1.492	6.040	-48	-194	510	6,3	26,3	770	3.117	9,5	17,4
254	1.028	40	162	127	4,0	16,1	132	534	11,9	19,3
573	2.320	180	729	276	3,6	4,7	332	1.344	18,9	24,8
...	...	...	...	157	16	65	...	...	...	...
...	...	...	...	48	21	85	...	...	...	...
188	761	-10	-40	31	5,2	21,1	34	138	5,0	4,1
221	895	- 7	-28	102	5,2	21,1	124	502	7,0	14,3
259	1.049	147	595	280	2,1	8,5	262	1.020	19,0	30,6
382	1.547	6	24	37	34,1	138,1	320	1.296	15,7	51,8
430	1.740	20	81	188	7,4	21,9	290	1.174	7,9	20,4
589	2.385	-246	-999	213	9,4	38,1	340	1.377	6,0	20,5
813	3.291	144	583	262	8,7	35,2	450	1.822	6,5	18,1
1.113	4.506	119	482	322	4,8	19,4	447	1.810	14,8	16,1
44	179	-15	-61	28	3,4	14	33	134	15,1	21
136	551	19	77	134	1,9	7,7	81	329	5,1	6,7
327	1.324	38	154	232	1,9	7,7	141	571	7,5	9.2
108	437	28	113	100	2,9	11,7	75	304	6,5	15,0
205	834	18	73	57	3,6	14,6	74	300	16,5	15,2
372	1.506	61	247	109	3,0	12,0	159	644	32,7	22,4
98	397	49	193	58	2,3	9,3	100	405	58	44
498	2.016	18	73	168	1,8	7,3	178	721	11,9	6,6
-	-	-	-	-	-	-	-	-	-	-

(4) added value actual total - added value (classic concept)

fiscal and financial charges
margin which should cover financial amortization of loans, payment of tax and interest,

for Mali, where the unit of currency is the Mali franc.
convertible since Mali is not at present a member of the franc zone

II. CENTRAL AFRICAN ECONOMIC AND CUSTOMS UNION (UDEAC)

A. The general background

a) The U.D.E.A.C. was created on 8 December 1964 and came into force on 1st January 1966. It includes Cameroon, Congo-Brazzaville, Gabon, the Central African Republic and Chad ; it therefore forms a relatively coherent whole eminently suitable for a study of industrialization on a multinational scale. In fact, UDEAC constitutes on the one hand a single market, exchanges within it being completely free of taxes and restrictions, and uniformly protected against foreign trade by a common customs tariff. And on the other hand, it has set itself the aim of pursuing a common policy of industrialization, this industrial policy forming an essential criterion of the success of the Union. Standardization of the Investment Codes (and especially the introduction of procedures for approval by the Union of enterprises with a multinational function), and creation of a special tax on industry, called taxe unique (1), are the first two instruments to have been elaborated for the direction of industrial development. A third instrument is the establishment of a joint plan for industrial development, on which the General Secretariat of UDEAC is now working and to which the present study may make a substantial contribution.

b) Even taken as a whole, the market offered by UDEAC presents a somewhat restricted basis for an industrial development drive centred on internal consumption.

The population of the UDEAC countries barely exceeded 11 million in 1965 (13,7 million in 1975) distributed over a territory of some 2.092.000 km2.

The G.I.P. of the Union was in the region of 360 milliards F.CFA in 1965. However, excluding internal consumption, the money income -

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(1) Taxe unique : tax on production levied on all industrial products manufactured in any of the member countries and sold in one or more of the other member countries of the Union. The tax is levied on the manufacturer at a set or ad valorem rate, on the basis of the selling price ex factory of the taxed product. The tax benefits the country in which the products

which is the only factor to be taken into account in estimating the possibilities of establishing replacement industries - does not at present exceed 270 milliard F.CFA, or 24.500 F.CFA purchasing power on average per head of population.

This rather modest figure should be read in conjunction with the weak position occupied by the modern sector in the general economic activity of the Union ; the secondary sector represents only about 18 % of the G.I.P. and manufacturing industry only 9 %.

c) The joint market is more markedly restricted than the global figures suggest, owing to the heterogeneous character of the Union. In fact, the extent of UDEAC geographically, the difficulty and the high cost of transport, as well as the uneven distribution of population, modern economic enterprises and money incomes, make it impossible to regard the Union as a single market in all cases, even in the absence of customs barriers.

- Cameroon alone represents approximately two fifths of the total population of the Union, and Chad approximately 1/2 the rest.

Density of population differs appreciably between Cameroon, where it is relatively high (11 inh./km2), and the other countries where it varies between 1,8 and 2,6 inh./km2.

- Lastly, the degree of urbanisation also varies greatly : very high in Congo-Brazzaville (20 %) and very low in Chad (8 %).

- The share of member countries in the G.I.P. of UDEAC is also very unequal ; Cameroon alone is responsible for 46 % of the total, the proportion of the other countries varying between 11 and 16 %.

The inequalities are even more marked as regards the distribution of money income, given that the proportion of internal consumption in the G.I.P. is comparatively higher in the Central African Republic and Chad than in the other countries ; while the average money income over the whole of the Union is in the region of 24.500 F.CFA per head of population, it varies between 107.000 F.CFA in Gabon and 10.000 F.CFA

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- The cost of transport is often so high that it maintains a certain separation of the markets and sometimes prevents the establishment of industrial undertakings, even when demand over the whole of the Union exceeds the technical or economic "threshold" for a modern production unit and therefore theoretically justifies installation of such a unit.

The cost of transport has a very great influence on the choice of industrial sites for all products dependent on the cost of transport. Transport costs have a double effect : firstly, in bringing raw materials and semi-manufactures imported from overseas from the port of arrival to the place of manufacture ; and secondly, in sending the finished products to the various markets. The bringing in of raw materials is important in that it is not generally possible to guarantee the competitiveness of undertakings established in the inland states when they process a high proportion of imported raw materials. On the other hand, the differences in the cost of transporting the finished products to the various consumption centres are comparatively unimportant, regardless of the siting within the area as a whole.

Inland in the Union, prices are essentially a function of the cost of transport between the ports and the consumption centres. Furthermore, the cost of shipping along the coast between the three maritime ports (Douala, Libreville and Pointe-Noire) is very high and a locally manufactured product that can be sold at prices competing with imports in one of the three ports is handicapped in the hinterland of the other two ports by a high additional cost that must be imputed to the transport along the coast.

- In these conditions, it is not surprising that the industrial concerns already established in UDEAC or planned, tend to be concentrated

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mainly in some ten centres or regions (1). These industrial centres contain 62 % of the existing enterprises and almost 9/10ths of the labour force of manufacturing industry. Cameroon alone, where industrialisation is most advanced, counts more than half of the 35.000 salaried employees of the manufacturing sector of UDEAC.

The dominating position of Cameroon and especially of the centre of Douala is also reflected in its share of the total imports of UDEAC : more than 40 % in recent years.

These considerations of distance and cost of transport on the one hand, and of distribution of population and purchasing power on the other, lead to a division of UDEAC into a number of sub-markets, some of which cut across national frontiers, viz : the region of Central and South East Cameroon (including West Cameroon) ; the region of North Cameroon and South and South East Chad ; The Central African Republic ; Congo-Brazzaville ; Gabon.

d) The present and future labour force available in UDEAC is quantitatively adequate and the continued development of the modern sectors of the economy, and especially of manufacturing industry, are in no danger of encountering a bottle-neck in this direction. There is however in all the countries of UDEAC a qualitative deficiency, both present and future : the shortage of skilled labour is general ; but it is, generally and proportionately, greater in the inland states. If present development plans are adhered to as regards technical education and vocational training and if, at the same time, training is given in industry, the demand for skilled labour could be met more or less completely

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(1) Douala-Edea, Yaoundé, Libreville, Port-Gentil, Pointe-Noire, Brazzaville, Bangui, Fort-Lamy, the Maroua-Fort Archambault region and the Niari region.

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out of local resources by 1970. But management personnel, technicians, and middle and higher grade executives will still to a large extent have to be recruited outside the area up to 1975 and perhaps longer.

The supply of raw materials for industry in UDEAC can already be guaranteed in a certain number of cases by local production in agriculture, fishing, stock-rearing and forestry. However, supply of its own needs in industrial materials and semi-manufactures for further processing is rather poor owing to the low level of internal demand and of industrialisation. As regards the industrial projects submitted in this study, certain undertakings could or should employ local raw materials. This is so in the case of the manufacture of tomato purée, fruit juices, malt, tyres, chemical and ceramic products, articles in glass and asbestos cement, electric batteries, car batteries and rods for concrete (1). Other undertakings however are supplied principally with imported materials, either because the local economy is not in a position to provide them, or because the quality or regularity of supply require it.

The provision of water for industrial uses presents almost no problems : for most undertakings it can be assured by the existing networks, but undertakings consuming large quantities of water must provide their own supply.

The sources of power for UDEAC are oil products, natural gas and electric power. Oil products may be provided as early as 1968 by the Port-Gentil refinery and subsequent increases in consumption catered for by creating additional refining capacities. Deposits of natural gas in Cameroon and Gabon may play a part, either as a source of industrial raw materials, or as a direct source of power within the framework of the

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(1) recovery materials - at least at first - for car batteries and rods for concrete.

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regional development of the areas where it is mined, but only for certain industries. The supply of electrical power is assured at least until 1970 in the industrial centres and the development plans of the various countries provide adequate programmes for expansion. Future supplies should be assured, either by making full use of the power from existing hydro-electric stations (Edea), or by establishing new power stations (Bouenza, Kinguele), or by increasing the output of existing thermal power stations. Industries established in the towns and consuming large amounts of power, and all industries established in the bush and not in the industrial centres will be obliged to find all or part of their supply by their own means.

B. Possibilities for joint industrialisation

The drawing up and implementing of a joint programme for industrialisation within UDEAC would appear to represent the touchstone of success of the economic and customs Union. It is essential, both for economic and for political reasons, that UDEAC should succeed in enabling all the member states to share as evenly as possible in the industrial development of the Union.

Now, the coastal states have an initial advantage over the others in several respects : from the point of view of transport, thanks to the proximity of the sea and to the existence of a denser network of shorter, better and cheaper lines of communication ; from the point of view of money income and the drawing power of established growth centres.

The imbalance working to the disadvantage of the inland states is particularly pronounced where the manufacturing process depends on the handling of raw materials and semi-manufactures imported by sea. The experts have therefore taken the hypothesis, firstly, that the inland states should specialise in manufactures dealing in the first instance

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with local raw materials and, secondly, that the coastal states should as far as possible - through a joint policy for the siting of industries within UDEAC - forego such manufactures even if, from an absolute point of view, they could be produced equally advantageously in those countries.

Decisions of a political nature which properly belong to the UDEAC authorities and which therefore fall outside the sphere of an economic study, could to a certain extent redress the imbalance which inevitably vitiates the geographical distribution of the projects retained by the experts.

C. The experts' proposals

1. The global prospects

The experts' study does not include about fifty existing projects which have been studied by serious promoters and are assured or have a good chance of finding financial backing ; some of these projects are even on the point of realisation.

It is obvious that these very numerous projects not included in the experts' proposals must be taken into consideration in forming an exact idea of the balance of an industrial development programme covering the whole of UDEAC.

On the other hand, owing to the obstacles that still stand in the way of cooperation between UDEAC and Congo-Kinshasa on the industrial plane, projects which could only be considered if these two markets were combined have not been retained either except in one case.

Successive selections made for UDEAC from jointly listed products according to the method outlined in the first part have finally eliminated sixty-two of the eighty products on the original joint list considered by the three teams of experts.

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However, following more detailed studies, the possibilities presented by the UDEAC market as a whole or by a number of part markets have made it possible to retain eighteen manufactures and nineteen sites or enterprises.

Realisation of the eighteen or nineteen projects would require investments of between 11,5 and 14,7 milliard F.CFA depending upon the installations and capacities chosen (1), and would provide work for 1.950 to 2.400 people, nine tenths of whom would be recruited locally. The local added value afforded by realisation of all these enterprises may be estimated at a figure between 2,2 and 3,5 milliard F.CFA and the annual saving in foreign currency between 2,3 and 3,9 milliard F.CFA per annum with full working. An estimate, of necessity very approximate, of the "local product" afforded by the 19 projects amounts to some 3,5 to 5 milliard F.CFA depending on the installations and capacities chosen.

As regards the possible timetable of realisation, it must be noted that twelve projects would appear capable of realisation by 1970, provided the preliminary conditions (promoter, personnel, finance, administration) are fulfilled, since the market will be able to absorb the estimated volume of production. Five projects (tomato purée, paper bags, malt, tins for preserved foods, rolled steel) can be realised only between 1970 and 1975. Two projects (electrical steel works and chemical products) cannot be considered until after 1975.

Five projects are still relatively uncertain since they depend for their realisation on important prior conditions which are far from being fulfilled, either because the necessary elements of production - raw materials or power - remain to be guaranteed (malt, tomatoes, fruit, fertilizers), or because the enterprises using the goods produced are yet to be established (tins for preserved foods). These five projects which are markedly more uncertain represent a local added value of 700 to 1.300

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(1) cost of establishment and setting in operation of the proposed installations only. Investments in infrastructure required in certain cases and which can only rarely be estimated with even a minimum of precision, are not included in these figures.

million F.CFA for an investment of some 3,5 to 4,8 milliard F.CFA. These projects would provide work for some 500 salaried employees. They would give a saving in foreign currency amounting to 1,1 or even 1,7 milliard F.CFA.

The geographical distribution of the projects retained shows a certain imbalance in favour of the coastal states. Fourteen projects are proposed for the coastal states : eight for Cameroon (six of which at Douala), three in Congo-Brazzaville (two of which at Pointe-Noire), three in Gabon (Libreville). Five projects go to the inland states : three to Chad and two to the Central African Republic.

The replacement of present imports by the local productions planned would not involve any fiscal deficit (1) in 8 out of the 19 projects since these productions would be replacing imports of intermediate products (bottles, malt, fertilizers) which enter UDEAC duty free. For the other projects there would be a fiscal deficit estimated at between 900 and 1.250 million F.CFA. The fixing by UDEAC of taxe unique rates in connection with the products concerned might to some extent offset this loss ; but it must be borne in mind that the gross profits of the undertakings will probably be modest at the outset and will scarcely allow of a degree of taxation (taxe unique or tax on profits) capable of compensating for the fiscal loss on imports.

2. The 18 products retained

(1) Tinned tomatoes (purée and juice)

Local demand for tinned tomatoes is completely met by imports. Imports of tomato purée amount at present to approximately 2.000 t. for

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(1) the indirect effects on the budget of the demands made by the proposed undertakings on labour, local materials and services could not be estimated. They are not however likely to be negligable, especially in the case of the larger projects.

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the whole of the UDEAC and show a regular growth rate (1955-64) of a little over 10 % per annum. On the basis of this figure, future requirements can be estimated at 3.700 t. in 1970 and 6.000 t. in 1975. One and perhaps eventually two factories, sited near the tomato-growing areas, may be considered.

Unfortunately, studies of tomato production do not at present make it possible to say exactly where this production will be located. Three possible locations were considered by the experts : the Central African Republic, South West Cameroon and the Chad-North Cameroon region. The two latter locations would seem to be suitable but would give only a very low margin of profitability scarcely likely to attract an investor. Nor does the project appear to be of great benefit to the community since it would create little added value (between 12,7 and 54,4 million F.CFA) and would require a large fiscal sacrifice (some hundred million F.CFA) without any possibility of compensation through application of taxe unique.

However the project cannot be rejected until the results of current agronomic studies are known ; if these were favourable, they would very greatly alter the data in the case and might show an adequate degree of profitability.

(2) Concentrated fruit juices

In spite of the restricted market (300 t. in 1964), the very high growth in consumption (25 % per annum in recent years) opens up reasonably interesting prospects. The experts therefore thought it useful to consider a project for the manufacture of concentrated fruit juices ; however, no location can be determined with any certainty at the present stage, since the national development plans in this field have not proceeded beyond intentions and no plans have been drawn up for fruit plantations, especially citrus fruit. Research stations are reported just now to have succeeded in establishing which types are of interest and local agricultural departments are endeavouring to find suitable areas. A factory would necessarily have to be sited close

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to the plantations supplying it and its location therefore remains completely hypothetical. However, as Chad would appear to have some future in this field and as it could in this way find an opportunity of varying its agricultural production and at the same time building up its industrial sector, the survey has retained a hypothetical installation in that country.

With a capacity of 550 t. (packed) and under conditions of working which at present seem most likely to obtain, the profitability would be marginal. The project has therefore no chance of attracting an investor. But here again, more favourable conditions of working, perhaps for instance through supplementary out-of-season work, processing of a greater variety of fruit, or lower prices "to factory", could afford a measure of profitability and studies of these possibilities are essential.

(3)(4) Malt

UDEAC requirements in malt are at present met entirely by imports. Two thirds or three quarters of the 8 to 9.000 t. imported go to Cameroon, whose breweries have a capacity representing 70 % of the total capacity of UDEAC. As beer consumption is rising, the market for malt is growing by 12 to 16 % per annum. Requirements for malt can be expected to be approximately 14.200 t. in 1970 and 20.300 t. in 1975.

Local manufacture of malt presupposes resolution of the problem of local cultivation of barley for brewing of a sufficiently high quality. It would therefore first be necessary for the experimental cultivation of barley undertaken in Cameroon and Chad to be extended to cover barley for brewing. In the meantime, the malt-house could use imported barley.

There are two possibilities: firstly, a malt-house producing 8.000 t. (1970) to 12.000 t. (1975) situated at Douala and secondly, a small malt-house to supply the inland states, probably at Fort-Lamy.

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When the malt is made from locally produced barley, the saving in foreign currency on the Douala malt-house would be approximately 267 million F.CFA (for a production of 8.000 t. of malt) and approximately 408 million F.CFA (for a production of 12.000 t. of malt). The corresponding figure for the Fort-Lamy malt-house would be 40 million F.CFA. The establishment of the malt-house will have little effect in terms of employment but considerable effects on the agriculture supplying it with barley. The profitability of the projects will only be ensured if barley can be obtained at sufficiently low prices. The added value accruing from the two malt-houses varies around a hundred million F.CFA in total.

(5) Paper packaging

The demand for paper bags is at present reduced but it could be increased appreciably by the new undertakings such as cement works and flour mills which are planned. Thus by 1970 the demand could amount to 6,35 million bags, 35 % of them for Cameroon alone.

Libreville, where a factory producing pulp for paper is to be established, might be the most suitable location for a factory with the aim of possible future amalgamation.

For an undertaking with a capacity of 3.000 bags an hour, which would make it possible eventually to manufacture the quantities planned working a single shift, the profitability of the capital invested (177 million F.CFA) would be approximately 36 %.

Even more favourable conditions would result from an increase in demand, from an extension of the production programme to include manufacture of boxes and from the use of local, cheaper raw materials. As the demand for paper packaging in UDEAC could increase by 20 to 25.000 t. per annum between now and 1975, a market of this size would be of increasing interest to any paper manufacturer and study of the possibility of local paper manufacture, especially paper for packaging, should be encouraged.

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The added value would amount to 77,8 million F.CFA. The saving in foreign currency would be appreciable : 94 million F.CFA if the factory used imported materials and 308 million F.CFA if it used raw materials of local origin.

(6) Tyres for cycles and motorcycles

At present the UDEAC market in inner tubes and tyre covers for cycles and motor cycles is entirely supplied by imports. The total tonnage of these imports amounts to approximately 550 t., representing approximately half a million inner tubes and 500 to 600.000 tyre covers, to which must be added 30 to 35.000 items in both categories at present imported on cycles. Approximately half these imports go to Cameroon.

The annual growth rates of imports have been in the region of 4 to 6 % in Cameroon and 15 to 20 % in the other countries of the area taken together. Allowing rates of 4 % for Cameroon and 10 % for the other countries, estimated imports amount to 750 t. for 1970 (800.000 inner tubes and 900.000 tyre covers) and approximately 1.000 t. for 1975 (1,05 million inner tubes and 1,2 million tyre covers), the proportion for Cameroon falling to about a third of the total.

These estimates justify starting local production. The factory could be established at Bangui.

The profitability of the undertaking would appear to be well ensured : 28 % profitability on capital for a capacity of 750 t. ; 38 % for a capacity of 1.000 t.

The added value would amount to 187,2 or 254,4 million F.CFA depending on the capacity chosen. Fiscal revenue from local production exceeds that on imports. The saving in foreign currency would be appreciable (107 or 153 million F.CFA depending on the capacity) ; they would be even greater if other local raw materials besides rubber (woven cotton for example) could be used. The effect on employment (122 to 164 people) would be appreciable at Bangui.

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The experts emphasize the importance of finding an experienced promotor who is also well established in the UDEAC market.

(7) Chemical products

The manufacture of base chemicals falls, strictly speaking, outside the scope of this study. The volume of imports of chemical products into UDEAC and the estimated requirements of the projected industrial undertakings have however prompted the experts to examine the possibilities for certain of these products.

The consistency of present imports and future needs have led to consideration of a factory producing chlorine based chemicals. In considering an installation of this type, it was necessary to take as a basis a minimum capacity determined by technology and by the interdependence of the various manufactures (1), and then to examine whether outlets could be found during the coming years for an output of this size. It speedily emerged that the UDEAC market would be insufficient even in 1975 and that the project is, under any circumstances, only realisable if part of the production can be exported to neighbouring countries.

The estimates - which are necessarily very approximate - suggest that the markets of UDEAC, Congo-Kinshasa and Nigeria would, after 1975, provide adequate outlets for the factory considered by the experts(2). The best site would appear to be Loutété (Niari valley) in Congo-Brazzaville.

The investment required would be considerable. For the factory alone, 4,5 milliard F.CFA must be allowed, to which must be added investments of a far-reaching nature in the regional infrastructure.

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(1) annual capacities :

calcium carbide	8.600 T.	Chloride of lime	5.750 T.
caustic soda	10.600 T.	sodium hypochlorate	3.800 T.
CPV in suspension	6.000 T.	sulphuric acid (78%)	3.850 T.
DDT	3.000 T.	dichlorobenzine	2.250 T.

(2) except in the case of calcium carbide, production of which should be limited to 4.000 T. per annum.

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Profitability is fairly low and is probably not sufficient to attract private investors. A detailed study might bring out the possibilities of improving this position.

The economic effects in general are proportionate to the dimensions of the project. The added value amounts to 430,5 million F.CFA. The local needs of the factory in elements of production and services may be estimated at approximately 765 million F.CFA, the saving in foreign currency at 1 milliard F.CFA, new jobs at 430, representing a total wage of 175 million F.CFA going to local markets.

On the other hand, the direct effects of the project on the budget would be comparatively slight : while there is no fiscal loss on import tax, it is not possible, given the poor profitability, to count on high revenue from taxes on production or profits.

It should also be strongly emphasized that a project of this complexity requires much more thorough study. The above data are subject to correction and in no way form a basis for a definitive decision on the possibilities in UDEAC for the chemical industry considered.

(8) Nitrate fertilisers

In recent years the drive to modernise the agricultural sector has considerably increased consumption of fertilizers in UDEAC, especially in Cameroon which is at present the biggest user of fertilisers (75 to 80 %) and, with current agricultural programmes, will remain so in the future. Given this development, it seems likely that the level of 50.000 t. of nitrate fertilisers - which would form a basis for local production - will soon be reached.

Demand for nitrate fertilisers has a clear lead (77 % of the total). The need for phosphate fertilisers is minimal and could be met by a well placed African producer (Senegal or Togo) while the need for potassium fertilisers, which is greater, would provide an outlet locally

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for the potassium from Holle which is shortly to be exploited. It would therefore only appear possible to undertake manufacture of nitrate fertilizers (ammonium sulphate), the chief market being in Cameroon.

Pending more certain information on the location and size of gas deposits and details of its cost, the installation has been reserved for Cameroon. The factory would function on the basis of imported raw materials (sulphur and ammonia).

The profitability estimated for the two capacities considered is adequate in both cases. For a capacity of 65.000 t. and an investment of 1.674 million F.CFA, profitability would be approximately 18 %. For a capacity of 125.000 t. and an investment of 2.642 million F.CFA, it would amount to 28 %.

The added value would amount to 491 and 1.024 million F.CFA respectively for these two capacities. There would be a large saving in foreign currency : 418 and 867 million F.CFA, depending on the capacity chosen. No fiscal deficit is envisaged.

The maintenance and development of the drive towards modernisation of agriculture with the encouragement of increasing use of fertilizers, research into means of reducing the cost of transport especially along the coast, and of reducing the cost price of fertilizers to farmers (which could no doubt be obtained by the high gross margin and light taxation), constitute particularly important additional measures for increasing the demand for fertilizers and hastening the establishment of local production.

(9) Glassware (bottles)

At present, the requirements of UDEAC countries in glassware are met entirely by imports. Since the largest consumer is the drinks industry, the project studied is confined to the manufacture of bottles.

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The total requirements of the drinks industry over the whole of UDEAC may be estimated at 10 million new bottles in 1970, representing a production capacity of 20 tons a day, or 7.000 t. per annum, with a 20 % reject rate.

There are several projects for establishment of a bottle factory but they have not so far got to the point of forming full investment dossiers.

The profitability of the undertaking would be so marginal that it would probably be necessary to envisage the introduction of a protective tariff. Such a measure would, however, be difficult to implement, given that the large undertakings in the drinks industry are able to import their bottles customs free under the terms of the Investment Codes or taxe unique.

Estimates made for two sites, Douala and Port-Gentil, give very similar results as to costs and financial returns for the two places, the low prices of natural gas being offset at Port-Gentil by decidedly higher prices for electricity.

The study should therefore be continued on the basis of more precise data, especially on raw materials (sand, limestone). If further study does not show any great difference in price as between the two installations, the cost of transport should turn the scales in favour of Douala.

The added value from the bottle factory would be in the region of 110 million F.CFA and the saving in foreign currency some 87 million F.CFA.

(10) Ceramic manufactures (wall tiles)

Products for large-scale building (bricks, rough masonry, tiles, pipes) are already manufactured in UDEAC countries by artisans

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and undertakings using equipment which is often primitive ; but modern industries are being established. However, more refined ceramic products, in particular earthenware tiles for covering floors and walls, are not yet manufactured locally.

Imports of earthenware tiles for wall covering (some thousand tons at present) are rapidly expanding, those of tiles for floor covering and sanitary equipment are stationary, and those of crockery are decreasing. It therefore seemed advisable to confine present studies to the possibility of manufacturing wall tiles.

On the basis of a growth in the rate of local consumption of 10 % per annum, the requirements of UDEAC would be 1.700 t. in 1970 and 2.750 t. in 1975, 60 % of which would go to Cameroon. The first of these figures corresponds roughly to the minimum technical threshold required for undertaking this manufacture.

Cameroon being by far the largest consumer, the factory should be installed in that country provided raw materials are available there. They are almost certain to exist there but research in this field is not yet sufficiently advanced.

The size of the enterprise - 1.500 or 3.000 tons depending on circumstances - has a very great effect on the profitability which rises from 9,6 % to 35 %. The first rate would appear insufficient to attract an investor, and it will therefore be necessary to wait until outlets exceed 2.000 t. in order to start manufacturing with an enterprise having a capacity of 3.000 t., working initially at two-thirds capacity. On the basis of 2.000 t. profitability should be satisfactory.

It should also be possible, on the basis of production at a level of 2.000 t., to operate, by instituting a taxe unique, a fiscal levy (18 or 36 million) that will partly compensate for the loss of entry dues following on the reduction in imports (45 or 90 million depending on the capacity chosen).

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The added value rises from 80 to 168,5 million F.CFA. There will be additional employment for 89 to 128 people. The saving in foreign currency will amount to 46,5 or 115,6 million F.CFA, depending on capacity.

(11) Pipes in asbestos-cement

Present requirements are covered entirely by imports which in recent years have fluctuated between 900 and 1.300 t. consisting mainly of pipes.

A factory manufacturing roofing materials (corrugated sheets) has a minimum capacity of 5.000 t. ; the very small market makes it advisable to abandon this type of factory.

It is possible however to envisage small and profitable installations for the production of low-pressure pipes. The experts' study therefore relates toa factory with a production capacity of 700 t. per annum. This type of factory would find outlets in part only of the UDEAC market.

The suggested location in Chad is due to the fact that the inland states appear to be larger consumers of articles in asbestos-cement and that the factory should be near a cement works. The outlets for the factory would be in North Cameroon, South Chad and possibly even as far as Bangui.

The profitability of the concern would appear to be excellent. The fiscal deficit due to the reduction of import tax would be appoximately 10 million F.CFA, which could probably be recovered to a large extent through taxe unique, without endangering the profitability of the enterprise.

Neither the added value (32 million F.CFA) nor the saving in foreign currency (9 million F.CFA) are very large.

(12) Iron rods for concrete, steel bars and sections

Requirements are covered entirely by imports. Imported goods which it is at present possible to consider manufacturing in UDEAC may be estimated at some 18.000 t. per annum. With growth rates of 5 to 5,5 % per annum, a conservative estimate of demand yields a figure of 26.000 t. of goods in rolled steel for 1970, and 34 to 35.000 t. for 1975.

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A rolling mill with a capacity of 35.000 t. of rolled steel per annum, using iron and steel scrap recoverable locally or imported, would therefore serve the market estimated for 1975. Douala would appear to be the best site.

Four industrial combinations are possible, depending on whether production amounts to 20.000 or 35.000 t. of rolled steel and is based on an adjoining steel works or on imported steel. The estimates show that installation of a rolling mill producing 20.000 t. would be barely, if at all, profitable. The profitability of a mill producing 35.000 t. would be 11 % if it used imported ingots but only 7 % if the ingots were supplied by an adjoining steel works.

The results economically depend on the size of the project. The added value may be estimated according to the type and capacity of the combination chosen at a figure between 190 and 516 million F.CFA, the saving in foreign currency varying between 5 and 350 million F.CFA, and the employment provided between 250 and 450 jobs.

The fiscal loss (between 225 and 400 million F.CFA) could probably not be offset by taxes on production since the initial gross profit would be low.

It must be emphasized that study of this project has been able to provide only a provisional guide and that it has had to rely on hypotheses and data that require clarification and precision. More advanced studies might make it possible to envisage a more favourable project. Present information does not, therefore, allow of a definitive decision as to the possibilities open to a smelting combination in UDEAC.

(13) Steel cables

Imports cover all present needs (approximately 1.700 t. per annum, seven tenths of which go to Gabon) and there is at present no project for establishing local manufacture.

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Most of the cables are used in forestry. It would therefore appear reasonable to estimate development roughly parallel to consumption of cables and forestry production, which would give, for the types and qualities of cable capable of manufacture in a local factory, a market of 1.650 t. in 1970 and 2.000 t. in 1975.

Two projects for cable works with respective capacities of 1.500 and 2.500 t. (working two shifts) have been studied. Installation at Libreville, the centre of the largest market, has been retained, so as to enjoy the most favourable transport conditions.

Deducting a taxe unique equivalent to the deficit from import tax, profitability would be 11 or 14 % depending on the capacity of the enterprise.

The general economic effect would be fairly considerable. The added value, depending on the capacity chosen, would be 128 or 219 million F.CFA, the annual saving in foreign currency 140 or 240 million F.CFA, the number of new jobs 60 or 105 (of which 35 to 40 % for skilled workers).

(14) Bolts

At present, requirements in bolts of all kinds are covered exclusively by imports. There is no project in this connection.

A precise estimate of the market in bolts could not be made but a conservative estimate puts present demand for simple wood screws - the only type that the project is concerned with - at 70 tons per annum, 85 tons in 1970 and 100 tons in 1975.

A factory with a capacity of 100 t. (in two shifts), might be envisaged if it could be attached to an enterprise producing machine thread such as the one at Douala or Pointe-Noire.

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Conditions of manufacture are more or less the same in these two towns but Point-Noire would seem to be better placed as regards transport of the finished product ; that site has therefore been retained.

The profitability of the investment would be in the region of 10 to 11 %.

The effect on economic growth would be limited. The added value (19 million F.CFA), the saving in foreign currency (20 million F.CFA) and the number of new jobs provided (32 people) would be fairly small.

(15) Woodwork and ironmongery

The market for these goods is extremely varied but statistics give only global data. Information gathered from importer-distributors and the results of a similar inquiry undertaken on the Ivory Coast have made it possible to form an idea of the market, of its determining factors, and therefore of its probable development.

Local manufacture could only be considered in the case of standard articles, relatively simple from a technological point of view.

In spite of the slight advantage of installation on the coast, it would appear desirable, in order to build up the industrial sector of one of the inland countries, to establish the factory in the Central African Republic.

With a production capacity of 650 t. of metal work and ironmongery, the factory would show a good profit. This high degree of profitability would make it possible both to lower the unit selling prices (compared with those forming the basis of calculation) and to levy a taxe unique, thereby recovering at least in part the fiscal losses resulting from the replacement of imports by local products.

The general economic effects are appreciable, both in respect of added value (121 to 133 million F.CFA, depending on whether the

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enterprise is sited at Bangui or Pointe-Noire) and the saving in foreign currency (more than 70 million F.CFA). The undertaking would employ 116 salaried employees.

(16) Tins for preserved foods

At present, UDEAC imports all its tins for preserved foods (8 to 10 million units per annum). Two projects for meat- (Fort-Archambault in Chad) and fish-canning (Pointe-Noire in Congo) have provided for the manufacture of tins in adjoining factories. These would meet the needs of the enterprises concerned. They could also to a large extent supply the small canneries of the two countries concerned and of the Central African Republic.

It remains, however, to provide for the establishment of a factory producing tins for preserved foods for Cameroon and Gabon, mainly with a view to meeting the needs of two undertakings which are still at the project stage (pineapples and tomato purée).

The volume of the market to be supplied therefore depends essentially on the planning and realisation of these two projected factories. These are obviously important provisos.

The best site would be Douala, since the factory would be supplying the Cameroon market almost exclusively.

With a volume of production of 23 million tins, the gross profit margin would be fairly small but adequate to ensure the profitability of the factory without protection against imports. After deduction of the sums required for the repayment of capital, only modest fiscal returns can be expected. The annual saving in foreign currency obtained by meeting demand from local production would be approximately 58 million F.CFA, allowing for the fact that all raw materials would have to be imported. The added value would amount to 59,6 million F.CFA.

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(17) Bottle-tops

In the absence of sufficiently detailed statistics of present imports, the annual requirements of UDEAC have been estimated at 135 or 140 million units per annum, 70 % of which go to Cameroon.

The expansion of the drinks industry which absorbs the production of bottle-tops makes it possible to foresee a rapid increase in demand : 220 million units for 1970 and 330 million for 1975.

The profitability of a bottle-top factory in UDEAC would be assured only on two conditions : first, that the undertaking have a sufficiently low technical capacity to make full use of the capital invested and, second, that it be integrated with an existing metal processing enterprise, thus reducing both the required investment and the running costs.

Location at Douala would offer both the most favourable conditions for integration of the enterprise and access to the large market in Cameroon (70 % of demand).

An installation producing 140 million bottle-tops per shift would make it possible, through full use of working time, to rise to a production of 220 or 330 million bottle-tops.

Profitability, low for the first level of production, would rise to 17 % for the second level.

The added value is small (22,4 to 36 million F.CFA, depending on the level of production). The saving in foreign currency would be 21 and 34 million F.CFA respectively. The number of jobs provided would be comparatively small (22 to 37).

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(18) Car batteries

Imports of car batteries amounted to approximately 650 t. in 1963-64 for the whole of UDEAC. There is at present no local manufacture.

A production unit of 600 t. (50.000 units of 12 kg each) per annum would be justified as from 1970.

The supply of raw materials is the only factor affecting the choice of location. The factory should therefore be established in an area where lead waste is likely to be available and where the cost of transport for the supply of imported raw materials will not be too high ; this is the case at Douala and in the Pointe-Noire - Brazzaville area. Calculations have been made for Pointe-Noire.

The profitability of the operation would appear excellent (61 %) and would make it possible to compensate fully for the loss of customs duty entailed by the reduction in imports.

The added value would amount to 111 million F.CFA. The saving in foreign currency, some hundred million F.CFA, would be appreciable. The effect on employment (70 people) is not inconsiderable.

There should however be further studies to determine more exactly the local conditions of supply of waste lead and also the most-used types of batteries, to which production could be limited.

(19) Dry batteries

Production of standard round batteries of 1,5 volts, which form a high proportion of the consumption, could be undertaken since present imports (600 t.) cannot fail to rise rapidly if trends since

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1960 (+ 14 % per annum) are maintained. Taking however an annual growth rate of only 7 % in order to allow for certain factors slowing up demand, future requirements for standard items would be 1.500 t. in 1970 and 2.100 t. in 1975. The numbers of batteries that can be manufactured locally would appear to be in the region of 15 million by 1970, and this corresponds to the production threshold set by technical requirements.

Two hypothetical capacities have been studied (600 and 1.200 t.) for the project, the factory being sited at Gabon owing to the existence locally of manganese dioxide. Since the cost of transporting this commodity is low, it would no doubt have been possible to consider a site inland but the UDEAC authorities have already in principle allocated a production of this kind to that country, even though the main consumer market is elsewhere.

The profitability of the project would appear to be very good (26 % and 48 % depending on the capacity chosen).

The added value would be some hundred million F.CFA for the 600 t. capacity and two hundred million F.CFA for the 1.200 t. capacity. The saving in foreign currency would amount to 37 and 86 million F.CFA respectively.

However, the immediate effect on employment would be slight since the manufacture of batteries requires highly skilled personnel which would in the first place have to be to a large extent recruited overseas. A taxe unique of 10 % would partly compensate for the deficit resulting from the replacement of imports.

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SUMMARY OF

Ref.	Product to be manufactured	Capacity p.a.(1)	Location	Investment million CFA	Investment thousand UC
1	Tomato purée	1.860 t	S.W. Cameroon or	288,0	1.152
		1.860 t	Chad-North Cameroon or	345,5	1.382
		1.860 t	Central African Republic	314,0	1.256
2	Concentrated fruit juices	550 t	Chad	328,7	1.315
3	Malt (imported barley)	8.000 t	Douala	424,1	1.697
		12.000 t	Douala	551,4	2.206
	Malt (locally prod.barley)	8.000 t	Douala	424,1	1.697
		12.000 t	Douala	551,4	2.206
4	Malt (locally prod.barley)	3.000 t	Fort-Lamy	217,8	871
5	Paper packagings	6,35 mio.	Libreville	177,4	710
6	Tyres for cycles	700 t	Bangui	555,1	2.220
		1.000 t	Bangui	582,8	2.331
7	Chemical products	-	Loutété	4.505,8	18.023
8	Nitrate fertilisers	65.000 t	Douala	1.674,0	6.696
		125.000 t	Douala	2.642,0	10.568
9	Glassware (bottles)	7.000 t	Douala or	411,2	1.645
		7.000 t	Fort Gentil	437,5	1.750
10	Ceramic manufactures (wall tiles)	1.500 t	Yaoundé	230,0	920
		3.000 t	Yaoundé	290,0	1.160
11	Pipes in asbestos cement	700 t	Chad	142,4	570
12	Rods for concrete,sections (imported steel)	20.000 t	Douala	1.688,1	6.752
		35.000 t	Douala	2.076,9	8.308
	Rods for concrete,sections (annexe to factory)	35.000 t	Douala	3.126,4	12.506
13	Steel cables	1.500 t	Libreville	259,0	1.036
		2.500 t	Libreville	405,6	1.523
14	Bolts	100 t	Pointe-Noire	43,5	174
15	Woodwork and ironmongery	650 t	Bangui or	229,0	916
		650 t	Pointe-Noire	212,0	848
16	Tins for preserved foods	23 mio u.	Douala	183,0	732
17	Bottle tops	220 mio u.	Douala	60,1	240
		330 mio u.	Douala	70,7	283
18	Car batteries	50.000 u.	Pointe-Noire	134,7	539
19	Dry batteries	600 t	Libreville	188,1	752
		1.200 t	Libreville	286,6	1.146

(1) unit : t - ton; u - unit

Key to signs : ... - information not obtained; - - estimate impossible

ECONOMIC DATA

Operating costs million CFA	thousand UC	Annual foreign currency saving M CFA	th.UC	No.of new jobs	Investment per new job M CFA	th.UC	Added value(2) mio. CFA	thou. UC	Profitability profit/invest. %	profit t.over %
246,7	987	81,0	324	126	7,0	28	54,4	218	12	12
287,2	1.149	56,0	224	126	8,3	33	12,7	051	negat.	negat.
263,1	1.052	68,0	272	126	7,6	30	31,8	127	5	6
154,9	620	...	...	58	5,6	23	...	...	0	...
296,3	1.185	27,0	108	30	14,1	57	58,3	233	7	9
438,0	1.752	48,0	192	33	16,7	67	78,5	314	9	10
296,3	1.185	267,0	1.068	30	14,1	57	58,3	233	7	9
438,0	1.752	408,0	1.632	33	16,7	67	78,5	314	9	10
108,9	736	93,2	373	16	15,5	62	30,7	123	7	13
243,2	972	94,1	377	24	7,4	30	77,8	311	36	21
224,1	896	106,9	428	122	4,5	18	187,2	749	28	41
280,1	1.120	152,7	611	164	3,5	14	254,4	1.018	38	44
1.548,5	6.194	977,2	3.909	472	9,5	38	430,5	1.722	5	12
767,0	3.068	418,0	1.672	138	12,1	48	491,5	1.966	18	28
1.329,0	5.316	867,0	3.468	188	14,0	56	1.023,7	4.095	27	35
207,3	829	110,0	440	154	2,6	11	87,3	349	6	10
203,3	813	110,0	440	154	2,8	11	86,0	344	5	10
104,8	419	46,5	186	89	2,6	10	72,9	292	10	17
153,0	612	115,6	462	128	2,2	9	168,5	674	35	40
41,5	166	9,0	36	18	7,9	32	32,1	128	15	34
911,9	3.648	5,1	20	253	6,6	27	191,3	765	2	3
1.409,6	5.639	85,0	340	330	6,2	25	431,2	1.725	11	14
1.416,2	5.665	349,7	1.399	452	6,9	28	516,1	2.065	7	14
143,5	574	140,3	562	64	4,0	16	127,7	51	37	40
227,0	908	239,9	960	107	3,7	15	219,0	87	43	43
15,9	64	20,3	81	32	1,3	5	18,7	7	32	47
146,1	585	72,0	288	116	1,9	8	121,4	48	33	34
146,0	584	71,0	284	116	1,8	7	133,3	53	37	35
190,2	761	58,0	232	88	2,0	8	59,5	238	9	8
94,0	276	20,5	82	32	1,8	8	22,4	90	8	5
135,5	542	34,2	137	51	1,3	6	35,9	144	17	8
127,4	510	100,0	400	70	1,9	8	111,0	444	61	39
140,7	563	37,0	148	62	3,0	12	92,9	372	26	25
241,1	965	86,0	344	94	3,0	12	195,8	783	48	36

(2) added value - classic concept of remuneration for elements of production used by the enterprise (wages and salaries, profits, interest and rents paid, etc.)

III. THE DEMOCRATIC REPUBLIC OF THE CONGO

A. The general background

a) Industrial expansion has been concentrated in two centres : Katanga and the Lower Congo - Kinshasa region.

In Katanga, the incentive came from the necessity of processing locally the products of the mining area which had then to be transported more than two thousand kilometres to the ports from which they were exported. The original metal industry led to the establishment of complementary industries, some feeding it (dams, chemical industry, repair shops, cement works and coal mines) and others fed by it (semi-manufactures in copper). A fairly dense transport network has been set up. Secondary industries have been gradually created to meet the growing purchasing power of the people.

Another growth centre has developed in the region of Kinshasa and the Lower Congo, at the point where the Matadi-Kinshasa railway, the main link with the Congo, joins the navigable tributaries. The warehousing of goods and products at this break in transit has led to considerable industrial expansion.

The so-called "open door" policy imposed on the colonial government by international treaties and forbidding the setting up of preferential customs tariffs, has speeded the expansion of manufacturing industry. In effect, since Belgium suffered in this colonial market from severe competition from foreign goods, she could only counter this by creating in the Congo a national industry which would be able to benefit from protective tariffs.

After the second world war, a policy of industrial decentralisation was initiated for the benefit of the inland regions. This policy applied, with a few exceptions, to products most liable to suffer from the cost of transport.

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When independence came, these secondary industrial centres were still embryonic and their development has not been continued.

The development of the two industrial centres of Lower Congo and Upper Katanga has caused a serious regional imbalance in the Congolese economy. Broadly speaking, the former provinces of Kinshasa and Katanga, which contain only a little over a third of the population of the Congo, have witnessed the development within their frontiers of three quarters of the most advanced economic enterprises, directed in the main towards the home market, eight tenths of the manufacturing industry, and three quarters of the mining industry. Statistics of trade, transport and the distribution of the European population all emphatically bear this out.

The definite character of the development in the various regions of the Congo has led to asymmetrical economic relations between the North and the South. Industry in the Northern regions is directed solely towards export and they are increasingly dependent, geographically and economically, on the South, especially the Kinshasa region. This imbalance in the favour of the Kinshasa region has become even more serious in recent years and has even set in motion a strong movement of population towards the capital. The disadvantages of the over-population and chaotic development of the Kinshasa agglomeration are obvious. In present conditions, this phenomenon of movement of population has become cumulative and threatens to be irreversible : since independence, most of the new industrial investments have chosen Kinshasa as a site and the attraction of the capital for rural population is continually strengthened and is gradually emptying the countryside. Now, local interests which have remained vital find it difficult to bear such flagrant inequalities in development and the state of dependence in which the Northern and Eastern regions are stagnating. This situation has no doubt provided fertile ground for rural rebellion and the only way to counter it is to attack the root of the evil by putting into operation a more balanced policy for growth. In other words, it would

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be advisable to think out and apply a policy of decentralisation of development, especially industrial development, so as to limit the excessive growth of Kinshasa and mitigate the centrifugal trends.

In this connection, it is not inapposite to remark that the establishment of an ironworks at Kinshasa as part of the Inga project would threaten to aggravate seriously and perhaps irreversibly the excessive growth, relatively, of that agglomeration and the imbalances emphasized above, especially in the allocation of public capital.

b) Within this perspective, directed to the revitalisation of the less-favoured regions, the creation at Kisangani of a new growth centre to include a number of profitable industrial enterprises, would appear to be a priority measure and one capable, in its turn, of entailing a fresh impetus in the agricultural economy of the Northern and Eastern regions.

The situation of Kisangani, at a necessary break in transit at the end of an excellent, low freight stretch of river of 1.700 km., offers considerable advantages from the point of view of transport, since this town - in the Congo and even in the whole of Africa - is at the furthest point from the coast accessible at the least cost in transport. Conversely, enterprises established there would have available an extremely extensive market. The completion of the road linking Kisangani to Bukavu and the replacement of the projected rail extension Aketi-Bumba by two roads linking Kisangani to Buta and Isiro will increase the radial links already centred on Kisangani.

The new industrial centre in the Eastern regions should be conceived in national terms. Apart from the enterprises to be established there serving outlets in the North and East only, it is most important that others of an interregional character should be established, depending on the rest of the country both for their outlets and for their supplies.

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Only in these conditions can the centre really function as an integrating force, economically and politically.

The agricultural products of the Eastern Province and of Kivu can contribute decisively to the industrial expansion of Kisangani, since they pass through that town and most of them could be processed there. Cotton from Uele and the rubber produced in the south of the Eastern province will play a particularly important part in this connection.

c) Location of a proportion of the projected new industries in a third industrial centre to be created at Kisangani will obviously meet with considerable difficulties. The experts are not unaware of the considerable objections, both economic and political, that may be raised by their progpamme and suggestions for future industrial development.

Private capital, especially, will not willingly be directed to the new locations, since it would have for some time to count on a cost price higher than the marginal cost of production in industrial expansions in present industrial areas. In order to encourage the Kisangani centre it would be incumbent on the public authorities not only to undertake work on the infrastructure and rural development schemes and a fresh impetus to agriculture in the region where the new industries are to be established, but also to take a series of measures to attract private capital to the new industrial centre.

In addition, the continual insecurity of the eastern regions and the political and administrative concentration on Kinshasa, which cause it to be chosen as a site by industrialists concerned about their contact with governmental and administrative procedure, likewise constitute serious obstacles depending on political decisions and administrative organisation.

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B. The experts' proposals

1) The global prospects

The Congo has been studied mainly as a whole. However, in the case of the estern region of Kivu, it has also been considered as part of the multinational market of the Great Lakes, together with Rwanda and Burundi. On the other hand, no market links have been considered between Congo and UDEAC. It should be noted in this connection that there is in the Congo a project for a chemical complex to be established in Lower Congo depending on the construction of the Inga dam. This complex would be obliged to dispose of a part of its production in neighbouring markets, UDEAC in particular. However there is a similar project in that area, which plans to dispose of some of its products in Congo-Kinshasa. Here, therefore, there are grounds for multinational coordination requiring the initiative of the governments concerned.

The 15 projects dealt with below relate to the Congo market only. They have been selected from a joint list drawn up for EAMA as a whole, in accordance with the criteria set out in part one.

The proposals for new industrial undertakings have been divided between two locations. That of Kinshasa, at the heart of an industrial centre already functioning, has been chosen in all cases requiring the proximity of certain elements of production already produced or about to be produced in Lower Congo, and of the port of Matadi. Location at Kisangani aims at better spatial organisation of the Congolese economy by creating a centre of development in regions hitherto less favoured.

The proposed investment for all of the projects would amount, depending on the capacities chosen, to a minimum 2,5 milliard F.B. or a maximum 3,6 milliard F.B. At Kinshasa, investments would be between 650 and 875 million F.B. and at Kisangani, between 1.840 and 2.720 million F.B.

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Local added value might amount to (in million F.B.) :

	Minimum	maximum
at Kinshasa	224	355
at Kisangani	643	1.081
Total	867	1.436

The number of jobs created would amount to :

	minimum	maximum
at Kinshasa	578	842
at Kisangani	3.004	4.724
Total	3.582	5.566

The Congolese economy would enjoy a saving in foreign currency of between 737 and 1.320 million F.B.

If economic or political reasons prevented adoption of the proposals for decentralisation in favour of Kisangani, it goes without saying that most of the industrial projects which have provisionally been sited at Kisangani would not be unsuitable for Kinshasa : those enterprises whose viability has been established for Kisangani, would have every chance of being at least equally profitable at Kinshasa where they would benefit in addition from a broad network of external economies.

2) The 15 products retained

(1) Tinned fish

This dossier takes up a project for preserving and processing fish that Messrs. Pemarco plan to realize at Banana. The project concerns a large factory capable of handling 10.000 t. of surface fish per annum and producing, in addition to 1.390 t. of fresh fish, 3.900 t. of tinned fish, 200 t. of flour and 50 t. of oil.

The project would help to vary food production and to make up the serious lack of protein in the Congolese diet. It would bring an added value of 85 million F.B., would provide an annual saving in foreign currency of some 90 million F.B. and give employment to about a hundred salaried employees.

If the fish canning factory were supplied by the present producer of metal packagings at Kinshasa, the latter would double production and this would be bound to affect favourably the prices to other users of tins for preserved foods.

(2) Cotton fabrics

Enterprises at present established in the Congo have a total capacity of 70 million m2, shortly to increase to 85 million m2. Estimates of demand put the market at 120 or 130 million m2 in 1975. There would therefore appear to be large outlets for greater local production.

However, the present structure of demand assumes that approximately 15 % of cotton fabrics, made from finer thread and impossible to manufacture with local cotton, are imported. The development of taste will no doubt tend to increase this percentage. If it was possible, by appropriate protective measures, to reserve a more or less constant proportion of the country's consumption for home production, establishment of a new unit could be considered.

The production programme of the projected enterprise should include fabrics of a quality approximating as closely as possible to that of the imports not at present replaceable (especially wax prints). Given these two conditions, the outlets available to a new local production would amount to 25 million m2 in 1975.

The Kisangani site offers a vast outlet area capable of absorbing almost 25 million m2 of cotton fabrics and having at present no established production.

A comprehensive factory (spinning, weaving and printing) with a capacity of 25 million m2 per annum could count on a gross profitability of 27 %, giving a comfortable net profit (11 %), with allowance made for 16 % financial and tax charges, and making it possible

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to use part of it to render profitable the blanket factory also planned for Kisangani, which would have a low rate of profit but high social utility.

The most important justification of the project is, however, its interest for the community : 511 million F.B. added value, 570 million F.B. saving in foreign currency, 2.137 jobs. And in addition, the part played by the enterprise in giving fresh impetus to the cotton economy of Uele and, more generally, in reviving the hinterland of Kisangani, is vital. But this is also the aspect of the problem which holds the most uncertainty - as regards supplies for the factory - and which assumes a whole series of measures accompanying it in the agricultural sphere.

(3) Hosiery

In the absence of exact statistical data, demand for 1975 has been estimated at some 1.850 t. taking into account the combined effect of population growth and urbanisation. The hosiery industry in the Congo counts six factories producing 1.100 t. of varied articles. Bearing in mind that 60 % of imports consist of goods that it is not possible to produce locally, the outlet available would be 450 t.

An enterprise with this capacity, established at Kisangani, would contribute to the success of the industrial centre there and would have at its disposal a large regional market.

The project is of considerable social interest. The added value would be 54 million F.B. per annum, the saving in foreign currency 47 million F.B. - which would make it possible to recover in under a year the part of the investment paid in foreign currency - and the number of jobs fairly high (249 units) in relation to the investment.

As regards private profitability, the gross profit would be 26 % and this would no doubt allow of reductions in prices which in turn would increase the competitiveness of the concern or extend its market.

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(4) Cotton blankets

With an estimated demand for 4,85 million blankets in 1975, local production capacity (including extensions under construction and a definite project in Rwanda) amounts to 3,85 million blankets. There remains therefore an outlet for approximately 1 million blankets.

The project would be sited at Kisangani, in relation to the cotton economy of the region and the other textile installations in that town.

The inclusion of the project in a general programme of agricultural development and creation of a new industrial centre lends it a special interest. The local added value would be 50 million F.B., the saving in foreign currency would amount to 51 million F.B. per annum and the factory would give employment to 238 people.

Private profitability, however, is very low (3 %). It would therefore be necessary for the mutual influences interacting in an industrial centre gradually to establish external economies, for the profitability of the enterprise to improve to any great extent within a given time. The high net profit accruing from the manufacture of cotton fabrics might, for instance, serve to render profitable the blanket factory.

(5) Paper and cardboard

Present imports of paper pulp are small, those of paper and cardboard, both raw and processed, are appreciable (24.000 t. in 1959, 13.000 t. in 1965) but requirements exceed the latter figure, since imports are at present limited by the foreign exchange regulations. Estimates for 1975 vary between 41.500 t. and 55.200 t.

At least half of the paper and cardboard consumed could be produced locally. The experts have therefore considered a processing unit handling 12.000 t. and planned to increase capacity to 20.000 t. in 1975. This enterprise should be established in the Lower Congo region, if possible in the proximity of forestry development.

Examination of the problem shows that establishment of a paper industry in the Congo must pass through a number of phases. The first need is to develop industries processing paper and cardboard. A paper industry can be established when paper consumption reaches a sufficient level. In the initial phase, the factory could use imported pulp but it should later use a mixture of imported and locally produced pulps when the market is large enough for the latter to be produced in the Congo economically.

The establishment of a factory producing paper pulp depends on the possibility of exploiting sufficiently large areas of forest plantations where the wood is homogenous and suitable for making into paper pulp.

The project for manufacturing paper and cardboard boxes therefore constitutes a necessary stage in the establishment of/a paper industry integrated at all levels. As such it is justified, in spite of a low degree of gross profitability (9 % for a capacity of 20.000 t.). On the other hand, the contribution of 86 million F.B. added value to the Congolese economy is appreciable. The saving in foreign currency would amount to 44 million F.B. The undertaking would employ 114 to 151 salaried employees.

(6) Tyres for cars and lorries

In 1957-59, average imports of tyres amounted to 177.000 units per annum (not including tyres on imported vehicles). According to current estimates the market would amount to 200.000 units per annum in 1975.

It would be possible to consider a production programme based on the twenty tyre specifications that together make up 80 % of the country's consumption. These outlets would take 160.000 tyres per annum.

A factory established at Kisangani would be close to the hevea plantations supplying natural rubber. It could also count on

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orders from the factory assembling motor lorries, establishment of which is also recommended in this area.

With a theoretical production capacity of 670 tyres and 670 inner tubes a day working three shifts - a low output compared with industrialised countries -, the enterprise would have a low gross profitability (7 %).

On the other hand, the local added value (85 million F.B.) and the saving in foreign currency (48 million F.B.) would be appreciable. Employment would be provided for 308 people.

(7) Tyres for cycles and motorcycles

It has been estimated that consumption of tyres will amount to 900.000 units and that of inner tubes to 1.300.000 units per annum in 1975.

An enterprise at Kinshasa at present produces 350.000 tyres and 1.500.000 inner tubes.

Comparison of existing capacity with estimated demand shows that there would be an outlet for 550.000 tyres but that present local production would be adequate to meet the demand for inner tubes. For commercial and technical reasons, the surplus capacity of the Kinshasa enterprise should not prevent a new factory from producing inner tubes as well as the corresponding tyres.

A factory established at Kisangani would have in close proximity both the source of supply of natural rubber and ample outlets. The manufacture of cycles alone, which is also proposed for Kisangani, would absorb 200.000 tyres and 200.000 inner tubes.

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The factory would be equipped to produce the three types of tyre used in the Congo. The investment would have a profitability of 12,5 % for a capacity of 585.000 tyres with inner tubes (500 t. per annum) and 24 % for a capacity of 1.170.000 tyres with inner tubes (1.000 t. per annum). The local added value would be 55 million F.B. and the number of jobs provided would amount to 156.

The interest of the project for the community lies mainly in the effects of linking this factory with the project for cycle manufacture and with local use of part of the rubber from the plantations in the region.

(8) Synthetic fabrics

The market for all synthetic fabrics has been estimated at some 34 million m2 in 1975. There is at present no local production of synthetic fabrics but a number of textile firms in Kinshasa are planning production in the near future to a capacity of 2 million m2 per annum. In spite of the great variety of synthetic fabrics, further research makes it possible to mark out three main categories which together represent 30 to 50 % of the market, potential outlets for which may be estimated at between 10 and 16 million m2 in 1975.

In these conditions, an enterprise with a capacity of 16 million m2 per annum and requiring a high investment (almost 400 million F.B.) could be established at Kisangani. It would unfortunately have only a low gross profitability (12 %).

On the other hand, the project would be of advantage to the development of the proposed industrial centre at Kisangani. The local added value would be 97 million F.B. and the saving in foreign currency 107 million F.B. The undertaking would employ 564 salaried employees.

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(9) Detergents

The Congo's needs may be estimated at 2.500 t. in 1975. There is as yet no local production in this sector.

Location of the projected undertaking at Kinshasa would give it easy access to the by-products of the Moanda oil refinery and possibly in the future to those of the chemical complex to be established in Lower Congo, in connection with the group of projects depending on the coming into operation of the Inga dam.

A factory of 3.000 t. working at full capacity would have excellent profitability (45 % gross), making it possible later to reduce the ex factory selling price of the production in order to improve the competitiveness of the product or to extend the market.

Local added value would be between 40 and 52 million F.B. The annual saving in foreign currency would be 20,5 million F.B. making it possible to recover in two years the part of the investment made in foreign currency. Estimated employment would be low (49 people).

(10) Movable equipment in metal

The potential volume of outlets on which a new local production, set up in addition to the three existing factories, could count has been estimated at 1.700 t. in 1975.

The project should be sited at Kisangani. The growth in demand in coming years will, in fact, come mainly from enterprises inland requiring to re-equip and remoteness will naturally protect and favour Kisangani.

The general economic features of the project are particularly well adapted to the special problems of the Kisangani region. Local added value would be 54 million F.B. and the saving in foreign currency 34 million F.B., making it possible to recover in just over a year the part of the investment made in foreign currency. A large number of jobs would be created (264), especially in relation to the investment made.

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The gross rate of profitability is very high (60 %) and this would no doubt make possible a reduction in the selling price in order to maintain competitiveness against imported products.

(11) Central workshop

The aim of this project would be to contribute to the best possible division of labour within the projected industrial centre at Kisangani. The creation of a central workshop for maintenance and repairs to equipment would relieve the various enterprises in the centre from the necessity of diverting important resources to the installation of their own workshops.

The private profitability of this concern is uncertain. But this type of investment must be evaluated in terms of the social benefits it brings, as an integrating element and as a catalyst for external economies within an industrial network, and not in terms of private profitability. At this level, the concern is profitable so long as the cost price of parts manufactured locally remains lower than the price of foreign products plus the cost of transport and, more important, the cost of having the plant out of commission during the time it is idle.

(12) Electric bulbs

Requirements may amount to 3,7 million units per annum about 1975. These outlets are not fed by local production, either in the Congo or in neighbouring countries, and the whole range of specifications could be produced by the projected enterprise.

Kinshasa would appear to be the most suitable site owing to the proximity of the chief markets to be supplied and to the comparatively low cost of transporting the raw materials which all have to be imported.

The project would only be profitable if the enterprise had a capacity of 4,7 million bulbs per annum and could work at full capacity, and this means that rather more than a million bulbs would have to be disposed of in the Central African and West African markets.

(13) Goods trucks

A conservative estimate of future outlets amounts to 530 trucks per annum, the production to replace imports which at present cover all requirements.

The site chosen would be Kinshasa, in order to reduce the cost of transporting the raw materials, the greater part of which are imported, and to give the enterprise an advantageous position in the event of a national ironworks being established in the Lower Congo. Disposal of the trucks from Kinshasa likewise presents no problems.

A unit is envisaged capable of assembling the trucks, many of the parts being manufactured in the foundry, forge and workshop attached to the main workshops.

The project has interesting features economically. As regards private profitability, a capacity of 500 trucks offers a gross profit rate of 53 %.

As far as the community is concerned, the project would be equally interesting. Local added value would be 114 million F.B., the saving in foreign currency 161 million F.B. - which would make it possible to recover in less than a year the part of the investment made in foreign currency - and the number of jobs created 474. Finally, the low threshold from which the profitability of the concern is guaranteed would make it reasonably invulnerable to any possible fluctuations in orders.

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(14) Assembly of lorries and buses

The Congo imported an average of 4.200 lorries per annum from 1953 to 1959. Assuming that the total number of lorries in the country, at present much diminished, recovers its former level (31.000 lorries) in the next five years and that imports continue to grow up to 1975, annual needs owing to depreciation may be estimated at between 4.900 and 6.600 vehicles per annum.

There are already two assembly belts for lorries, which however only perform the most elementary functions and furnish little added value locally. However, new assembly installations capable of producing 300 lorries per annum and incorporating 30 % local added value are shortly to be established, constituting the first beginnings of the Congo motor industry.

Within the specifications of the production programme, the undertaking envisaged by the experts could be sure of supplying half the remaining free outlets (between 4.600 and 6.300 lorries per annum).

As far as buses are concerned, estimates for 1975 put annual requirements for town and country buses at 300 units.

A lorry and bus factory situated at Kisangani would be well placed to serve the markets of Uele, the Great Lakes region and Katanga. It could be supplied locally in tyres from the projected tyre factory.

With a capacity of 1.000 lorries per annum, the profitability of the assembly belt would be excellent (46 %). This exceptionally high rate of profit would make it possible to guarantee the profitability of an assembly belt producing 150 buses per annum, to be integrated with the undertaking.

Added value from the production of lorries alone would be 75 million F.B. per annum, and the number of jobs created 157. The saving in foreign currency, however, would be low.

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(15) Manufacture of parts and cycle assembly

Demand for bicycles is estimated at 190.000 in 1975 for the Congo alone. Possibilities of export to Burundi and Rwanda are uncertain but their eventuality adds a margin of security to the project.

A factory at Kinshasa already supplies 96.000 cycles per annum ; with the aid of a small additional investment, its capacity could be increased to 120.000 cycles per annum. A few small assembly shops supply peripheral demand.

The projected installation proposed for Kisangani could count on total sales varying between 90.000 and 110.000 cycles per annum. This figure includes all the free outlets in the Congolese market (70.000 cycles), exports to Burundi and Rwanda up to the 1959 demand figure (20.000 cycles) and if possible some exports to other neighbouring markets.

The factory would provide a local added value of 52 million F.B., would bring the country some 25 million F.B. in saving in foreign currency, and would create 421 new jobs. The gross rate of profitability of the investment would be 18 %.

DEMOCRATIC REPUBL

SUMMARY OF

Ref.	Product to be Manufactured	Capacity p.a.	Location	Investment MFB	Investment thUC
1	Tinned fish	3.900 T (1)	Banana	55	1.100
2	Cotton fabrics	12 Mio m2	Kisangani	623	12.460
		25 Mio m2		1.118	22.360
3	Hosiery	200 T	Kisangani	42	840
		400 T	Kisangani	77	1.540
4	Cotton blankets	500.000	Kisangani	84	1.680
		1 million		153	3.060
5	Paper and cardboard	12.000 T	Lower Congo	354	7.080
		20.000 T		494	9.880
6	Tyres for cars and lorries (2)	2.000 T	Kisangani	371	7.420
7	Tyres for cycles (2)	500 T	Kisangani	76	1.520
		1.000 T		118	2.360
8	Synthetic fabrics	16 Mio m2	Kisangani	372	7.440
		24 Mio m2		533	10.660
9	Detergents A	2.000 T	Kinshasa	39	780
		3.000 T		50	1.000
	Detergents B (a)	2.000 T	Kinshasa	39	780
		3.000 T		50	1.000
10	Movable equipment in metal	1.300 T	Kisangani	58,5	1.170
11	Central workshop	-	Kisangani	20 to 25	400 to 5
12	Electric bulbs	4.700.000	Kinshasa	39	780
		9.400.000		65	1.300
13	Railway plant : trucks	250 trucks	Kinshasa	158	3.160
		500 trucks		212	4.240
14	Lorries - buses	1.000	Kisangani	103	2.060
15	Bicycles	40.000	Kisangani	89	1.780
		100.000		162	3.240

(a) Where the cost price of the product is 25 % lower than for A
(1) not including 1.390 T of fresh fish, 200 T of flour, 50 T of oil
(2) tyre cover and inner tube
(3) local added value - annual cost of operating (including local raw materials) . 80 %

ECONOMIC DATA

Operating costs MFB	Operating costs thUC	Annual foreign currency saving MFB	Annual foreign currency saving thUC	No.of new jobs	Investment per new job MFB	Investment per new job thUC	Local added value(3) MFB	Local added value(3) thUC	Profitability profit invest. %	Profitability profit t.over %
75	1.500	89,7	1.794	90	1,63	33	85,3	1.706	40,5	22,8
188	3.760	264	5.280	1.192	0,52	10,4	242	4.840	19,5	39
345	6.900	570	11.400	2.137	0,52	10,4	511	10.220	27	47
24	480	20	400	129	0,32	6,4	26,5	530	20	25
44	880	46	92	249	0,31	6,2	54	1.080	26	31
30	600	24	480	122	0,69	13,8	24	480	0	0
55	1.100	51	1.020	238	0,64	12,8	50	1.000	3	8
140	2.800	20	400	114	3,10	62	49	980	4,5	10
217	4.340	44	880	151	3,30	66	86	1.720	9	17
157	3.140	48	960	308	1,20	24	85	1.700	7	13
29	580	19,5	390	84	0,90	18	26,6	532	12,5	25
50	100	42	840	156	0,71	14,2	55,4	110,8	24	36
366	7.320	107	2.140	564	0,66	13,2	97	1.940	12	11
539	10.780	162	3.240	794	0,67	13,4	148	2.960	14	12
27	540	13	260	41	0,95	19	36	720	34	34
38	760	20,5	410	49	1	20	52	1.040	45	37
27	540	5	100	41	0,95	19	28	560	9	11
38	760	8,5	170	49	1	20	40	800	14	16
59	1.180	34	680	264	0,25	5	51	1.020	76	43
-	-	-	-	-	-	-	-	-	-	-
25	500	8,2	164	44	0,89	17,8	7,61	152,2	8	12
46	920	19,4	388	78	0,84	16,8	17,5	350	16	19
102	2.040	75	1.500	289	0,55	11,00	53,8	1.078	30	32
187	3.740	161	3.220	474	0,45	9,00	114	2.280	53	60
188	3.760	9	180	157	0,65	1,30	75	1.500	46	18
51	1.020	8	160	184	0,485	9,60	18	360	4	6
115	2.300	23	460	421	0,386	7,50	52	1.040	18	20

MFB - million Belgian francs
thUC - thousand units of currency
Key to signs : - - estimate impossible

ross profit

IV. LAKE REGION (KIVU-RUANDA-BURUNDI)

A. General

The geographical area of an industrialisation programme does not necessarily coincide with that shown in the national development plans in the case of small countries such as Ruanda and Burundi , which are further handicapped by their geographical situation and their endowment with production fact - ors. In such conditions no real industrialisation programme can be considered unless national front - iers are disregarded from the outset.

Despite the deterioration in cooperation between Ruanda and Burundi, a survey which looks ten years ahead may justifiably assume a measure of fut - ure collaboration between these countries, which geographically, historically and economically are alike to an extent unique in Africa. Eastern Congo,(1) whose geography, population and economy have much in common with Ruanda and Burundi, is by nature bound up with this regional industrialisation project, which depends for its success on the Eastern Congo's res - ources and market being opened to it.

A basic feature of Ruanda and Burundi is their exceptional population density, which amounts to 100 and 120 inhabitants per sq. km respectively, while in the adjoining countries density ranges from 10 to 30 inhabitants per sq. k. Further ,

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(1) The frontiers of Kivu are regarded here as being those of the former province, less the district of Maniema.

the rate of increase of this population is among the world's highest (3% p.a. - i.e. population is doubled in 23 years).

The balance between population and the means of agricultural and pastoral subsistence is highly precarious. It is understandable, therefore, that the subsistence economy imposes a heavy burden on the national product of the two countries : 53% of the GNP in 1959, to day no doubt more.

Barriers between regions and international isolation also act as checks on the take-off of the monetary economy. As the two countries lie 1,200 km from the nearest seaport, their terms of exchange are heavily weighted by transport costs, which at present are said to absorb some 20% of their meagre foreign exchange reserves.

Hitherto coffee has been the motive elem - ent in currency expansion, which thus depends closely on a particularly vulnerable single crop, and one which is sold almost exclusively in one foreign market - the USA. Since independence this situation has not changed, but stagnation prevails in the production of coffee, with intermittent heavy falls in price. Alternative production for export is limited.

The smallness of the market(in 1964 per capita imports into Ruanda and Burundi were 4 and 5.4 US. dollars respectively) explains why the substitution of national industrial products for imports has been limited to a few bulky products, or products the demand for which is highly elastic in relation to income and to price. An industrial nucleus has been developed at Bujumbura.

Within the economic union formed by the Congo, Ruanda and Burundi from 1925 to 1960 the Congolese economy exercised a kind of dominating influence over the two trusteeship territories. As the industries of the Congo enjoyed tariff protection and preferential transport rates, they were able to regulate the market of the two neighbouring territories at will. In the absence of any factors favouring the siting of industries in Ruanda and Burundi, economic and monetary integration mainly benefited the industries of the Congo.

In the trusteeship territories, which the Trusteeship Power always regarded as an entity with a common capital in Bujumbura, this was the centre which enjoyed a privileged position in the embryonic industrial development carried out in the territories.

The independence of the three countries brought this system to an end. This explosion had baneful consequences in the economic field : a deterioration in the terms of exchange of the Ruanda producer caused by the rise in transport costs (owing to the radical realignment towards the East of import and export trade since 1964) ; insufficient use of hydroelectric energy potential (Mururu), and industrial potential (Bujumbura) and transport installations (port of Bujumbura).

Such wastage is regrettable, in view of the shortage of capital resources in the region , and unnecessary, because of the possibility of reconciling interdependence in exploiting common resources, particularly in efforts to industrialise, with the economic independence which the three countries appear to be seeking. To do this, interdependence must be organised by common agreement.

B. Principles of a concerted industrial policy

In the Lake region an industrialisation policy is conceivable only as part of a development policy with priority targets. Such priority targets are agricultural (food and cash crops) and in the

nature of things decisions on agriculture must remain the concern of the national authorities.

A development based entirely on an increase in the national agricultural product would be limited and, above all, extremely slow. It would provide no incentives to industrialisation, since the national markets are too small and local resources too limited. Each country should therefore limit its objective to establishing a balance between population and subsistence, achieving the export ceiling fixed inter alia by transport costs and international quota arrangements and limiting industrialisation to a few projects, mainly marginal and financed by international aid.

On the other hand, industrialisation might have a motive role to play if it were organised regionally and integrated so as to both precede and follow the priority agricultural development, so as to speed up that development and maximise its effects. The industrialisation region of the Great Lakes - where the demand for intermediate products for agriculture is considerable, possibilities of diversifying processed agricultural exports very great, natural resources relatively abundant and the potential consumer market (10 million inhabitants) large by African standards and geographically highly concentrated - would thus become the complementary element to the national development effort.

The geographical structure of the region and the siting of natural resources appear to be particularly well adapted to a coordination of economic policies and investments. The towns of Bujumbura, Kigali, Goma and Bukavu form the framework of a perimeter which could become the basis of a "pole region" with four operational bases.

A population of some 5 million inhabitants is concentrated within this perimeter and the urban population of the four towns is 100,000, thus constituting a remarkable concentration in a region which is predominantly rural in economy and a key factor in the industrial take-off.

From the transport point of view the proposed "pole region" appears also to be favoured by the existence

of high-grade or potentially high-grade arterial roads and a generally adequate aviation infrastructure, and also by the fact that each of the four operational bases of the "pole region" is linked to one or another inter - national transport artery aligned towards other centres of Central African development or towards west coast or east coast ports.

Lastly, from the point of view of natur - al resources to be developed the perimeter is aligned from North to South on a "chain" of energy factors or industrial or agricult - ural raw materials. The siting of these resources co - incides with the frontiers common to the three countries : Lake Kivu, the Ruzizi river, the alluvial plain of the Ruzizi and Lake Tanganyika.

The vast methane gas reserves of Lake Kivu and the substantial hydro-electric reserves of the Ruzizi, together with a few other sites, are a great asset to the industrialisation of the region. The siting of the most valuable of these resources on the actual frontiers of the three countries makes them a powerful integrating factor. Immediate cooperation is thus called for in one of the sectors which most closely affect the conditions of ind - ustrialisation.

As regards agricultural resources, food production, which aims mainly at providing a basic food supply, would normally be the exclusive concern of the national authorities. Industrial or export crops, on the other hand, should be a matter for cooperation between the countries, varying according to the type of crop : coffee, tea, cotton, tobacco, pyrethrum, perfume plants, barley. Such cooperation could apply also to factory processing, which in some cases would gain from supplies from more than one country being concentrated in a single unit, to collateral measures both before export production (agricultural research) and subsequent to it (marketing) and even to international allocation of crops and agric - ultural industries.

From this point of view active cooperation to develop the plain of Ruzizi would be of particular value. This plain, covering 249,000 hectares, could be the privi - leged centre of a highly diversified and highly profitable

agriculture - including both food and industrial crops - an agriculture whose first development schemes undertaken by the colonial administration proved that the idea was feasible. It would have a decisive influence on transforming the outlook of the peasants. The three countries whose territory is covered by the plain of Ruzizi are also interested in the creation of this modern agricultural "pole" and their cooperation is essential in devising a single development scheme for the plain. The scheme, therefore, is one of the key projects to be undertaken jointly by the three countries to integrate a vast area of modern intensive agriculture into the "pole region", in which it would represent one of the essential growth factors.

Cattle-breeding and fisheries could also be included in a scheme to allocate resources between national and international development projects.

Lastly, tourist resources could also progressively offer enormous possibilities. Hitherto the Lake region has remained well out of the mainstream of international tourist travel, but in an age of mass tourism it is not utopian to believe that in ten years or so from now it could be integrated into any travel movement towards Central Africa. The three countries have every incentive to coordinate their tourist policies, which could rapidly provide more foreign exchange than many export crops. Their main responsibility will be both to develop and preserve the sites and to devise reception facilities which will at the same time most favourably affect the balance of payments, without distracting the population from the aims of development.

In the long term concerted industrialisation of the Great Lakes region would involve specialisation agreements between all countries of the region, i.e. not merely the Congo, Ruanda and Burundi, but also Tanzania, and even Uganda and Kenya, which are "hinterlands" of the Lake region. An intermediate solution would entail ad hoc collaboration between the three countries associated with the EEC. Lastly, a minimum solution would reduce collaboration to the states of Ruanda and Burundi only.

However, this minimum solution - in the view of many the only realistic assumption - reduces prospects of development of those of food crops and exports crops in the

two countries , the only basis for expanding the national product. It would permit only a very minor industrial development, limited to a few bulky products or consumption products, the demand for which is highly elastic in relation to income, and then only if supported by strong initial protection. In the long run the backwardness or Ruanda and Burundi as compared with their neighbours would probably stand out.

The intermediate solution, approved by the experts, is the one which offers most advantages for multinational and multi-sector integration. Cooperation between Ruanda, Burundi and the Congo in effect demands the development of national resources common to the three countries and opens the way to intensive specialisation of products to the advantage of all partners.

To use methane gas from Lake Kivu and hydro - electric energy from the Ruzizi, to irrigate the Ruzizi plain and to exploit the fishery resources of Lake Tangan - yika, Ruanda and Burundi need the agreement and collaboration of the Congo. The outlets offered by Congolese urban markets to the agricultural and pastoral products are also essential to both these countries. Finally, the viability and development of most of the consumption industries are conditional on access to the market of the Eastern Congo.

For the Congo the market of the two neighbouring countries represents valuable, even indispensable, additional outlets, particularly should an "industrial pole" be set up at Kisangani. A vast volume of trade could thus be created in the medium term, leading to an increase in Congolese industrial exports amd providing a growing market for the emerging industries of the Lake region. The main artery for this trade would naturally be the new Bukavu-Kisangani route.

Once cooperation has begun between the Congo , Ruanda and Burundi, it could be augmented by similar bilateral agreements with Tanzania, and especially Uganda. Such cooperation with countries of East Africa might envisage the development of the frontier regions, the creation of the centre at Kagera and the improvement of roads to Dar-es-Salam. In particular, it would involve trade between the future "pole region" and the future Lake Victoria region ,

where a considerable industrial nucleus already exists and where a number of industrial projects are being executed or are envisaged. The progress made by this latter region could imperil the entire industrialisation effort of the Lake region, unless agreements on special - isation and cooperation were concluded in time.

C. Proposals by the experts

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1. Overall survey

Twenty-four projects were approved by the experts for the Great Lakes region. Their implementation would necessitate investments of between 1.8 and 2.5 milliard Belgian francs (F.B.) according to the capacities adopted, and would provide employment for between 1,800 and 2,150 persons. Local value added would range from a minimum of 1 milliard F.B. to a maximum of 1.3 milliard F.B. Savings on foreign exchange would amount to between 1.1 and 1.4 milliard F.B. annually.

This programme as a whole is subject to grave uncertainty, as it calls for industrial cooperation between the Congo, Ruanda and Burundi.

Even from a regional angle expanded to the dimensions of a particularly harmonious natural area progress will be neither easy nor . . .(x) . . .

It should be realised that the implementation of a very large number of the projects presupposes certain preliminary conditions which are as yet far from fulfilment. Thus the creation of some industries may be expected to take a comparatively long time. Serious uncertainty on this account affects 14 of the 24 projects.(1) These 14 projects represent 1.2 to 1.4 milliard F.B. of investments, value added of 620 to 820 million F.B., foreign exchange savings of 700 to 900 million F.B. and employment for anything from 1,200 to 1,500 persons.

Lastly, a number of projects are interdependent

(x) Original text illegible.

(1) Deep freezing of meat, oil factories, tanneries, ceramics factory, tinned tomatoes, fruit juice, jams and tinned fish, cattle-feed factory, metal container factory, soapworks.

and their implementation assumes that preliminary work will first be carried out.

2. The 21 approved products

(1)(2)(3) Palm oil and palmetto oil

The local demand for edible fats, which is very elastic owing to the prevailing scarcity in the Lake region, and the export markets justify an assessment of the market in 1975 at 15,000 tons of palm oil. The demand for the proposed soapworks is estimated at 2,050 tons of palmetto oil. The very small present local production is based entirely on craft industry and the whole of the demand is therefore at the disposal of the proposed oil factories.

These factories should be established in the immediate vicinity of the palm plantations. Their final siting will depend on the pedological and hydrobiological surveys which are still to be made in order to discover the most suitable sites for cultivation, but it is already apparent that irrigation conditions in the Rumonge-Kigwera area would enable 3,000 hectares of Elais palms to be created. The placing under cultivation of some 5,000 hectares should, however, be contemplated.

It is proposed to establish three factories, one with a capacity of 3,000 tons of palm oil and 535 tons of palmetto oil, the other two with a capacity of 5,200 tons of palm oil and 930 tons of palmetto oil.

From the social welfare point of view it is essential that the palm fruits should be produced in centrally controlled modern plantations in order to keep down the cost of the European background, and that the plant -

ations should be highly productive in order to save land. Plantation costs of palm estate companies will no doubt be very high, but the latter will be able to apply rat - ional methods of exploitation with satisfactory results.

Gross returns would be at a level of 11% for the factory with low capacity and 24% for the more efficient one.

Lowal value added for the three oil plants would total 146 million F.B. Foreign exchange savings would amount to 153 million F.B. There would be jobs for 426 workers.

(4) Tinned beef

Both in the Congo and in Ruanda and Burundi the meat market is stagnant, and there is even a falling off in supply. Demand too is very low, as the purchasing power of the inhabitants is insufficient to allow them to consume meat on any scale.

A project for a tinned beef factory can expect only a very small fraction (about 1/40th) of the total market for meat, as tinned products are relatively high-priced as compared with fresh meat, and the latter is more to the taste of consumers. In the Congo, having regard to existing local production (300 tons) and the present level of imports (1,235 tons in 1963), the potential out - let for corned beef is at present not likely to exceed 1,000 tons. In Ruanda and Burundi the outlets are of course smaller still, but they are difficult to estimate.

A tinning plant in Bujumbura could produce 355 net tons of meat, the output being intended mainly for export to Kinshaha and Lubumbashi.

This is one of the projects which have arisen from the desire to develop the potential comparative

advantages of the Great Lakes region. It would provide a local value added (20 million F.B) and foreign exchange savings (16 million F.B), which are appreciable. The factory would provide work for 41 wage-earners.

The gross return on the investment would be ~~about~~ 16%, provided by a moderate increase in Congolese customs tariffs, enabling a relatively high ex-works selling price to be provisionally quoted. In the longer term the economic viability of the project will depend on the improvement of the bovine livestock in the region.

(5) Deep - frozen pork

Prospects for the consumption of pork in the Congo are excellent and the demand may reach from 14,000 to 28,000 tons in 1975. Forecasts are much less favourable in Ruanda and Burundi, where demand for pork is severely limited by the low standard of cattle-raising and the poor quality of production.

The deep-freezing plant could be annexed to the abattoir at Bukavu - a solution which would be justified both by the desire to associate the Congo directly with an activity which will have its main outlets in this country, and by the transport facilities from Bukavu to Kinshasha and Lubumbashi. The plant would be supplied from modern cattle-raising centres which would have to be created in southern Kivu and in Ruanda, where cultivable land is more scarce than elsewhere. It would have a capacity of 3,000 tons of pig carcasses, a figure which represents roughly the markets in 1970-75 which this production can find only in the Congo's industrial centres. The implementation of the project therefore assumes inter-regional economic co-operation between the Congo, Ruanda and Burundi.

The gross return on the investment would be about 17%. The local value added produced by the factory would help substantially to expand the market of the Great Lakes (128 million F.B., of which 100 million is income distributed to pig-raisers). Annual savings of foreign exchange would amount to 245 million F.B. The factory would provide employment for only 22 workers.

(6) Tinned tomatoes

Between 1950 and 1960 the consumption of tom - ato puree has trebled, and the prospects of future consump - tion, taking into account only the increase in urban devel - opment and the expansion of money incomes, are 1,800 tons in 1970 and 2,050 tons in 1975 for the Congo as a whole, Ruanda and Burundi. There are, however, at present no tomato tinning factories in any of these countries and the entire consumption is from imports.

The need to site the factory close to areas of industrial cultivation directs the choice to the valley of the Ruzizi, this alluvial area being particularly suitable for this cultivation.

Obviously, arrangements must first be made for the plant to receive regular supplies. Plantations covering at least 225 hectares of cultivated surface would be needed to provide the 4,500 tons of tomatoes required for a plant producing 900 tons of concentrate a year. These figures would then have to be progressively doubled, as a capacity of 1,800 tons would still be below the probable demand for 1975. It is rather the constraints of supply which init - ially limit the size of the factory.

The establishment of the tinning plant would materially effect the development of the agricultural pot -

ential of the Ruzizi plain. The project would provide direct employment for 200 persons and would save 59 million F.B. a year in foreign exchange. The local value added would be appreciable (56 million F.B).

The viability of the plant is influenced by the amount of investment allowed for - a relaxation of the standards laid down for the working capital would increase the return -, by the rate of customs protection allowed and by the purchasing price of the containers. The latter factor is of particular importance and a reduction in the selling price of the containers would enable a normal return to be secured while requiring only an additional customs duty of 20% on the existing rates on imported tinned tomato puree.

(7) Fruit juice

The potential demand has been assessed at 750,000 litres a year of orange juice in a 1/6 concentration. It would be possible to replace existing imports to supply the lemonade plants of the Congo, Ruanda and Burundi by local production.

The siting of the plant in the plain of Ruzizi is determined by orange plantations to be created in that plain, where climatic and ecological conditions are well adapted to citrus cultivation. The project would thus promote the intensive agriculture to be created there and would supply the entire lemonade industry of the three countries.

The return would be of the order of 16% for the highest capacity (750,000 litres per annum). Local value added would amount to 33 million F.B. annually. The net receipts for exports to the Congo would amount to 32 million F.B. Employment would be found for 72 persons.

(8) Marmalade

Imports of marmalade in 1959 amounted to some

450 tons for the Congo-Ruanda-Burundi Customs Union. Allowing for the very definite fall in consumption which has since occurred, but assuming that a discriminatory tax will be placed on imports of other fruit preserves, a plant with a capacity of 600 tons may be expected to be adapted to the foreseeable market in 1975. The plant would have to be established in Ruanda, close to the plantations and in mountainous country.

The return on the project would be excellent (25%), which would enable ex-works prices to be reduced so as to widen the market, for instance by substituting marmalade for other kinds of jam in the total consumption.

Local value added would amount to 12 million F.B., foreign exchange savings to 6 million F.B. and the number of persons given employment to 26.

(9) Tinned fish

Between 1953 and 1957 there was a marked increase in the demand for tinned fish, parallel with the rise in money incomes and and more rapid urban development. Taking into account only the increase in population, and disregarding any rise in individual consumption, total consumption in the Congo, Ruanda and Burundi would by 1970 amount to 7,320 tons and by 1975 to 8,280 tons. Allowing for the PEMARCO project at Banana (Lower Congo), which envisages a production of 3,900 tons a year, there would remain an unsatisfied market of more than 4,000 tons.

A project at Bujumbura, close to the future metal container factory and to sources of fish supply, with a capacity of 2,632 tons annually would still leave a market of about 1,750 tons for imports other than tinned fish. The plant has been designed to process 5,265 tons of fish (ndagala) a year in order to produce 2,632 tons of tinned fish, 325 tons of fish meal and 60.5 tons of fish oil.

The gross return from the plant would be 31%, which is very high.

Similarly, the effects of the investment would be very favourable for the community. Local value added would be some 63 million FB, giving a coefficient

of value added (relationship of the value added to the amount invested) of 113%, which is one of the most favourable rates calculated for a project in the region. Savings of foreign exchange would amount to 48 million FB, which would enable the investment to be recouped in foreign exchange in a few months. The plant would provide employment for 62 persons.

The tinned fish plant would thus constitute a valuable factor in establishing a nucleus of manufacturing economy in the Lake region.

(10) Cattle food

Despite the numerical importance of livestock in Ruanda and Burundi, the market for cattle food is at present practically non-existent ; a few imports are limited to supplying the State-owned animal research stations. Some future idea is therefore required of the markets which may be expected by 1975.

Modern pig-breeding establishments , which would be created to supply the future deep-freeze plant, will be unable to find sufficient wherewithal to fatten pigs in the meagre locally grown fodder crops; they will have to buy food compounds, for which there would be a market of some 15,000 tons. Similarly, the breeding of oxen will have to become modernised and increase its yield, particularly in order to provide the required quantities of meat for the future tinning plant at Bujumbura. This will be possible only by improving cattle-feeding, for instance by using concentrates in the finishing off period.

The siting of the plant at Bujumbura will enable it to find locally a number of industrial by-products which may be used as raw materials (brewery draff, oil-cakes etc).

With a capacity of 15,000 tons and working single-shift, which may easily be converted to double-shift, the plant would just pay its way (gross return about 18%). Local value added would account for 56 million FB, and foreign exchange savings for 57 million. The plant would provide work for 18 wage-earners.

The production of food concentrates for cattle is a necessary complement to the implementation of projects for the tinning and deep-freezing of meat, while at the same time enabling a number of by-products of the industries at Bujumbura, which at present are used wrongly or not at all, to be developed.

The implementation of this project would constitute one of the conditions enabling a rational and economic system of stock-breeding in the region to be promoted.

(11) Malt

The demand for malt by 1975 for the whole of the Democratic Republic of the Congo, Ruanda and Burundi is reported to be 25,000 tons, including 6,000 tons for the Lake region alone.

The mediocre quality of the barley now produced from cultivation in the Lake region and the scarcity of land available for such cultivation are two limitations which must be taken into account. At the same time the possibility of an improvement in the locally produced barley must not be excluded. Taking as a starting point three possible volumes of barley produced locally (7,000, 10,000 and 12,500 tons annually), three hypothetical capacities have been worked out for the malting plant (8,000 used at 70 and at 100% and 12,000 tons annually).

There is at Bukavu a small malting plant with a capacity of 2,000 tons a year processing barley from Ruanda. The siting is therefore quite suitable and the project aims to step up the capacity of the existing plant to 8,000 or 12,000 tons as a means of improving the return on production.

Even with a low return (8 or 13% according to the capacity adopted and its use) the project would merit approval owing to its considerable incentive effect on the agricultural sector in the production of high quality barley. The savings in foreign exchange (48 to 87 million FB) and the value added are appreciable (47 to 84 million FB).

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(12)(13) Hides and skins

Apart from a small consumption of sheepskins and goatskins by local bootmakers and craftsmen, all skins marketed at present in Ruanda and Burundi are for export. Moreover, the production and marketing of hides and skins bear no relation to the numerical importance of livestock, the use of which is still far from economic.

Nevertheless, it would be advisable to consider the establishment of a tannery in the Lake region, where livestock is very numerous.

The investments required for each of the three possible production capacities (37,500, 75,000 and 150,000 ox-skins annually, plus 450,000 goatskins and sheepskins in all cases) - all of which will require larger supplies than those now existing - vary considerably according to the nature of the treatment of goatskins.

The outstanding advantage of the project is that it enables the value of the hides and skins exported to be raised locally, thus materially increasing foreign exchange earnings.

The gross return of the ox-skin tannery ranges from 10% to 40% according to capacity. The return of the goatskin tannery is insufficient, whatever the nature of the treatment of the skins.

The added value of the two projects (hides and skins) would be from 46 to 108 million FB. They will provide from 58 to 120 million FB in foreign exchange savings. The number of jobs created will range from a minimum of 164 to a maximum of 302.

(14) Plastic articles

According to the necessarily very speculative estimates, with a market of 10 million inhabitants the Great Lakes region might absorb 1,600 tons of plastic material, 10% of which would be local articles produced by the injection process.

Despite the presence in the Congo of enterprises which could to a large extent cover the present needs of the Congo, Ruanda and Burundi, the establishment of a

small plant in the Great Lakes region is warranted by the effect of transport costs on the price of these relatively bulky products, which are generally of small unit value. Cheap local production moreover would expand the plastics market in the Great Lakes region.

A plant with a capacity of 130 tons a year at Kigali would appear economic (17%), but would have a low local value added (3.3 million FB), save little in foreign exchange (3 million FB) and create little employment (7 persons). When the extent of the market permits, the establishment of a 530 ton capacity would raise the level of returns to 24%, provide an appreciable value added (14 million FB) and furnish no longer negligible foreign exchange savings (8.5 million FB). The volume of employment would rise to 14 persons.

(15) Nitrogenous fertilizers

An assessment of increased consumption of nitrogenous fertilizers in the Congo, Ruanda and Burundi in the years 1953-58, which may be regarded as representative, would indicate that demand will rise to 9,000 tons of fertilizer in 1970 and to 18,000 tons by 1975. (1)

The methane gas of Lake Kivu, in regard to which the Congo, Ruanda and Burundi have recently concluded an agreement for the joint study of its extraction and its use in a chemical plant, merits priority of choice. It should be used for this purpose rather than as a source of energy, which the hydroelectric resources of the Ruzizi can with advantage supply. The existence of important potential markets for nitrogenous fertilizers in the very populous Great Lakes region, which could become a centre of intensive breeding and cultivation, is a further justification for the siting in this region. A final argument is the nearness of Uganda, a producer of super-phosphates, with whom fertilizers might profitably be exchanged.

On the basis of the two possible production capacities (13,000 tons and 26,000 tons of fertilizer a year)

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(1) The weight of the fertilizer in the wholesale trade is four times less than that of nitrogenous fertilizers.

the project proves to be economic in a strict sense ; the gross returns are 16% and 25% respectively, which would even make possible an annual net profit of the order of 9% for the plant with the greater capacity (assuming a figure of 16% for financial charges and taxes).

Local value added (159 or 330 million FB) and foreign exchange savings (165 or 264 million FB) are considerable. The number of persons employed would rise to 102 or 137.

However, the main justification for the pro - ject is the economic and social importance of the expansion of fertilizer consumption. The marginal yield from the use of fertilizers on the soils of this region, where high population density forces a rapid and considerable increase in agricultural productivity, is enormous. The use of fertilizers then becomes a necessary condition for raising the standard of life of the peasant masses.

(16) Insecticide

An assessment of the quantities used in 1959 by the Great Lakes region (1,500 to 2,000 tons), all imported, taking into account the probable extension of the market, would indicate that an insecticide formulation unit with a capacity of 3,000 tons is justified towards 1970-75.

While the siting of the plant in Kinshaha may appear to be more remunerative in the long term, the Lake region offers the undeniable advantage of nearness to rural areas where intensive cultivation will be a particular need in subsequent years and where there are large plant - ations (coffee, tea, pyrethrum, cotton, tobacco).

The plant under consideration would produce a range of fourteen products such as to satisfy future demand for insecticides. As the markets of Ruanda and Burundi are not sufficient to make the scheme economic, export to Eastern Congo will be essential.

The gross return on the investment would be 16%. Local value added and savings on foreign exchange would be small (some 10 million FB in both cases), as would also the effect on employment (13 persons).

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(17) Pyrethrin

The demand for high-price household insecticides, including pyrethrin, is steadily expanding in the industrialised countries. The cost of packing and transport is a serious commercial obstacle when the pyrethrum is exported in the form of dried flowers. It has even caused a fall in the production of pyrethrum in Ruanda, although all the conditions for expansion are fulfilled.

The proposed plant, which should be near to its sources of supply of pyrethrum, electricity, fuel and labour and be of easy access, would be established at Mukingo in Ruanda. It would have a capacity of 3,000 tons of flowers and would perform all stages of transformation, from the freshly gathered flower to the 25% refined pyrethrin extract.

Value added would be some 140 million FB. The plant appears to be quite reasonably economic (gross return 20%). Foreign exchange earnings to be expected on this development are appreciable (142 million FB).

Further, the local processing would make possible a considerable expansion of pyrethrum cultivation in a country where the pedological, climatic and population conditions are particularly suitable for this cultivation.

(18) S o a p

At the existing level of consumption and on the pessimistic assumption of a stagnation in living standards, the mere pressure of population would ensure a market of 5,000 tons annually in 1970 and 6,000 tons by 1975.

The production capacities of plant already established in the Great Lakes region are about 6,000 tons and are therefore largely excessive in relation to actual needs. In general, however, these are old-fashioned or craftsmen's workshops producing soap of poor quality at high prices, thus limiting the expansion of demand.

The solution would be to replace these old-fashioned or craftsmen's workshops by a single modern plant.

Import into Bujumbura is indicated in view of the possibilities of extending the cultivation of the

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Elaeis palm in the plain bordering Lake Tanganyika.

The experts have approved two capacities of 6,000 and 12,000 tons.

The gross return on the first capacity would be 19%. Local value added would reach the appreciable figure of 40 million FB, and exchange savings would amount to 29 million FB. The number of persons employed would be 44.

To enable these results to be obtained, it would first be necessary to reduce the existing shortage of oleaginous plants, in order to reduce the existing unduly high prices.

(19) Hollow glassware (bottles)

Supplies to the drinks industry (breweries, lemonade plants and dairies) in the Great Lakes region are provided entirely by imports from Kenya in the case of Burundi and Ruanda, and from Kinshaha in the case of Kivu.

A bottle plant at Gisenye, where the necessary sand is available, with a capacity of 4.16 million bottles, would more or less take care of the market.

The return on this project is low (13.5%) and the local value added high (16.5 million FB). There are, however, solid reasons in favour of the project : number of jobs created (92), regularity of supply to local users and savings on foreign exchange (15.5 million FB) resulting from local manufacture of bottles now being imported, which would enable the cost of the investment to be recouped in foreign exchange in two years.

(20) Ceramics and chinaware

Despite a slowing down of building in the Congo since 1959 and a tendency to substitute certain plastic or fibro-cement articles for paving stones, tiles and sanitary equipment, it is probable that more rapid urban development, the rise in living standards and the resumption of building will lead to a return to the level of consumption prior to 1960. In the Congo, Ruanda and Burundi there is at present no industrial production of kaolin-base ceramic articles.

The siting of plants is conditioned by the presence of kaolin. This has been found at both Mayumbe and Bujumbura. Preliminary surveys should specify the comparative advantages of the two sites.

The principle has been adopted of an int - egrated production plant capable of producing annually 3,000 tons of ceramic tiles , 1,000 tons of ceramic sanitary equipment and 1,000 tons of chinaware in order to provide a return on the last two products , for which the market has not yet reached minimum threshold production.

As local value added amountsto 38 million FB a year, annual savings of foreign exchange would amount to only 27 million FB. The number of persons directly employed would be more than a thousand, which is a high level for Ruanda and Burundi.

However, the return from the proposed plant would be low (gross rate 11%).

(21) Manual farming implements

The potential market for local production of small implements, limited to articles which are not yet produced locally but which economically and technically could be , amounte to 1,000 tons at the moment and could rise to 1,250 tons by 1975.

A study has been made of a plant at Bujumbura, assuming two successive capacities of 600 and 1,200 tons annually.

The return from the plant would be quite inadequate (gross return between 1 and 13%). Nevertheless, it has become clear that local manufacture of farming implements would be most valuable as a means of reinforcing the efforts which are essential to increase the product - ivity of human labour in the Lake region. Such manufacture alone would be able to maintain close collaboration between with the farming environment - which would determine the characteristics of the implements to be made - and to distribute the new implements most effectively.

Moreover, local value added would be 8 or 19 million FB, savings on foreign exchange 4 or 12 million FB and the number of jobs created would be 91 or 167, according to the capacity adopted.

(22) Containers for tinned goods

This project was designed to supply the intermediate demand from plants producing tinned fish, meat and tomatoes, and from the oil and jam factories ; all of which are proposed in the Great Lakes region. The market for which these plants would cater would be one of 17.5 million containers a year.

The plant should be sited at Bujumbura, as near as possible to the users.

The high return from the project (41%) would enable the selling price of certain containers to be reduced, in order to provide more economic conditions for the plants using metal containers, in whose costs the price of containers plays an important part.

The local value added (15 million FB) and savings on foreign exchange (17.5 million) are not very high. The plant would offer new employment for 46 persons.

(23) Enamelled household goods

Imports of household articles have continued to rise. Among such articles enamelware has the largest market.

In the Congo there are two plants making enamelware. There is no local production in Ruanda or Burundi.

A plant could be established at Kigali, with a market which would include Ruanda and Burundi, part of the economic basin of Kisangani and some regions of Tanzania.

Two production capacities have been considered. With 2,000 tons a year the gross return would be only 13%. With 4,000 tons a year it would be 25%.

Local value added would be 20 or 43 million FB, according to capacity, and savings on foreign exchange 4 or 11 million FB, according to capacity. The number of new jobs created would be 205 and 279 respectively.

(24) Central workshop

The aim of this project is to bring about as thorough a division of labour as possible within the industrial nucleus and to spare the plants in the region the need to allocate large resources to creating their own

workshop, which would demand expensive equipment and a highly trained staff, both of which would be under - utilised.

The non-industrial return from the workshop should not be regarded as one of the main factors for consideration, but this type of investment should be assessed from the point of view of its social impact , as a factor calculated to integrate and catalyse external economies in an industrial network.

Such social return would be secured if the cost price of the articles supplied to local enterprises is less than the price of foreign products, plus the cost of transport and more especially the cost of the equip - ment being immobilised when not in use.

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V. MADAGASCAR

A. General

a) If some African countries have been able to reach an initial stage of industrial development, this is because there was first an expansion of export or mining activity, which created a growing monetary income, an essential condition for the industrial take-off.

In Madagascar the long-term trend of exports has not favoured the development of sufficient monetary purchasing power. It appears that the main cause of this phenomenon was the very rapid population growth, which caused an increasing part of the food products which were formerly exported to be retained for subsistence. If levels of production and consumption in Madagascar were able to improve to the extent of being included to-day among the highest in the African continent, this has come about without causing any extension of the monetary sector of the economy, progress being confined to the subsistence economy. As a result, the monetary income of the Malagasys is appreciably less than that of other countries the total income of whose inhabitants is, however, lower. Direct monetary income is estimated at 90 milliard Malagasy francs (Fmg), which represents an annual per capita income of 14,000 Fmg, on the basis of a population of 6.5 millions.

It would seem that the obstacles to a sufficient increase in agricultural production is human rather than technical in nature. Excellent yields, as already enjoyed by the large capitalist-type plantations operating in Madagascar, could be obtained by the Malagasy peasant only if he were to employ rational methods of cultivation and use fertilizers. At the marketing stage (purchase, sale and credit)

the Government made a strong bid to reform radically the traditional structures of commerce and credit. However, in this field it meets with difficulties inherent in the running-in period in a complex and difficult sector. Such obstacles must be progressively removed, and cooperative and development societies must be able to make their own contribution to rural development. In the long run it is the development of agricultural production which determines the industrialisation of the Malagasy economy, similarly to the modern exporting industries of basic products which in other African countries have promoted the establishment of an industrial nucleus financed from monetary incomes.

b) Monetary incomes in Madagascar are not only insufficient, but seem to be very badly distributed as well. The nationl accounts show that about 60% of the purchasing power is in the hands of 10% pf the population, more precisely the urban population. Investigations even show that one third of the urban population of Madagascar takes 70% of the total revenue in the six large towns, which themseves receive 60% of the monetary income in the national economy. Consumers of industrial products thus only represent a small market of 700,000 inhabitants, whose demand is already very diversified owing to their habits of consuming imported products.

In existing conditions the insufficiency of money incomes and their concentration are a major obstacle to the development of a manufacturing industry. This makes the general attitude to the replacement of imports to a large extent inadequate to meethe Malagasy situation, and in any particularly case difficult to handle. It seems that despite the very modest place occupied by industry, opportunities for replacing imports are at present small.

c) The extent of the island, its length and its dispersed population are further factors in the isolation of markets, an obstacle which is also found elsewhere in a number of African countries. Madagascar's insularity is a further limiting factor, as in such conditions the industries of the plateaux, handicapped by the cost of land transport, are not of a kind to compete with foreign/imported products by sea through one of the several ports of the island, to provides supplies for the coastal regions which form a large part of the Malagasy market. In the present circumstances, and for some time to come, the central regions and surrounding areas seem incapable of providing unaided an adequate market for modern industrial plants.

d) The concentration of local wholesale trade in the hands of a few companies well established in Madagascar and in France, and the monopoly of sea transport by mainly French companies, who are members of a shipping conference, are actual conditions which prevail on the Malagasy market for industrial products, to which market new products must gain access. These conditions could react unfavourably on the development of a local industry, if the creation of local industries competing with the import trade depends on the latter's goodwill. It is not always in the interest of the import trade to promote industrialisation, and importers may see in it only a more hazardous and less profitable activity.

B. Principles of an industrial policy

a) In the conditions outlined above efforts to develop must first be directed towards the farming and mining sectors, whose relative stagnation has not provided Madagascar with the income or created the demand which elsewhere have determined the emergence and then the expansion

of a preliminary industrial nucleus : the solution is to promote export activities, the essential preliminary to internal development.

A further need is to use preliminary investment to favour crops which can provide local industry with raw materials which must now be imported at high cost. While the opportunities afforded by the climatic diversity of the island are real, industrial projects at present remain a hazard owing to the need to resort to importation for a large part of the supplies which the Malagasy economy would be able to provide.

b) Madagascar's industrial structure is marked by a very definite dispersal of industrial centres. On the one hand, industries catering for the domestic market are almost all established in Tananarive, or near to Antsirabe on the high plateaux of Imerina. At Tananarive they find a capital and an industrial nucleus which provide them with the "external economies", and they are situated in the region of the country which attracts the highest industrial incomes and the highest total purchasing power (nearly two thirds of the solvent demand). On the other hand, the export industries are usually situated near to the coasts, at the heart of the producing regions and in the immediate hinterland of the ports of shipment.

As regards the establishment of future plants, the coastal regions offer a relative advantage for goods whose production requires the import of bulky materials or which are mainly consumed on the outer rim of the island. In return, the region of Tananarive offers advantageous sites for industrial plants whose products are mainly consumed on the plateaux, especially when they need bulky materials of local origin.

In order to prevent a geographically polarised industrial development from becoming cumulative, thus causing undue expansion at the centre and leaving a void elsewhere - which would be contrary to the aims of national integration - a policy of decentralisation should be adopted. This would have to adapt industrial development to the need for a balance of income between the various national regions, more especially for the benefit of the relatively neglected coastal regions. The main obstacle to industrialisation is lack of purchasing power, which in turn arises from the atrophy of basic activities. It is the outlying regions which are best adapted to the expansion of export agriculture. If such expansion develops, it will raise the purchasing power of the coastal populations and will mark a beginning of industrialisation ; if it does not develop, industrialisation will sustain a serious setback.

In view of the importance of local purchasing power and the convenience of channels of communication with the plateaux, two coastal centres appear to be particularly well placed :Tamatave and Majunga. It seems unlikely that Tulear can be opened up to industrialisation until the region has been agriculturally developed. As far as possible therefore it is at Tamatave and Majunga that new coastal industries should be established, in order to avoid too much dispersal of investments.

C. Proposals by the experts

1. Overall survey

The study made by the experts did not include some ten existing projects which appear to have found serious promoters and whose financing is already assured, or most likely to be assured in the near future.

After a selective examination of the common starting list, conducted according to the methods described in Section 1, 66 out of 80 products were elim - ated, leaving only 14 products, the prospects for which were specified after a more detailed study.

The implementation of all these 14 pro - jects would require an investment of between 12,8 and 16.1 milliard Malagasy francs (1) (according to the capacities adopted), and would provide work for 2,500/2,800 persons. Local annual value added from these new industries may be estimated at between 4.5 and 4.7 milliard Fmg and annual foreign ex - change savings at between 3.3 and 3.4 milliard Fmg.

Five projects (condensed milk, malt , wood pulp , caustic soda, bottles) however remain extreme- ly uncertain, as their implementation depends on some imp - ortant preliminaries. These five uncertain projects would absorb almost half the investments envisaged (4.9 to 7.7 milliard Fmg) and would furnish employment for some 700 to 900 wage-earners ; they would provide local value added to the extent of 1,8 to 2,9 milliard Fmg and savings on foreign exchange of almost a milliard Fmg.

2) The 14 approved products

(1) Condensed milk

The marketing of local fresh milk, the production of which is in any case insignificant in view of the considerable importance of Malagasy livestock, is practically nil except in the Tananarive region. Hence there is increasing recourse to imports as the market economy expands. These imports are now 18.7 thousand litres (milk equivalent) and will increase.

In principle therefore the demand for dairy products from dairies with up to date equipment justifies the creation of a dairy processing industry, for which the size of the market should guarantee a very satisfactory return provided milk is supplied to it at the price now paid to the producer.

(1) These figures cover only establishment and pre-operational expenses for th e proposed plants, excluding infrastructure investments which would be required in some cases and can not always be estimated with any degree of precision.

However, the existing structure of production and marketing makes this rather improbable. There should first be a complete reorganisation of the milk sector involving the establishment of herds of dairycattle and the spread of modern methods of breeding, the hiving off of such herds towards the neighbourhood of Tananarive and a reorganis - ation of milk marketing. For that matter, the processing plant for fresh milk now under construction would be unable to operate at full capacity until these conditions were realised.

The establishment of a condensed milk factory in the Mid-West region of the island depends entirely on the reorganisation of milk production and marketing in that region, which is to be its source of supply.

Provided the milk is produced and marketed in acceptable conditions the gross return from the plant would amount to 49% with the plant working at full capacity.

The project is of considerable importance for the development of Madagascar's natural wealth, the progress of the market economy and the improvement of local agricult - ure. Local value added would be 377 million Fmg. The establishment of the milk tinning plant would in addition provide considerable savings on foreign exchange (396 mill- ion Fmg a year. The number of workers directly employed by this plant would be small (40) but the indirect effects on rural employment would be very large.

(2) Wheat flour

The consumption of wheat flour imported in this form into Madagascar is at present 16 to 28,000 tons a year and should reach 24 to 26,000 tons by 1975.

On this assumption a milling plant could be set up to process 35,000 tons of wheat and produce 25,500 tons of flour. Supplies of wheat would be obtained from imports, as the limited distribution of this crop would at most suffice to meet the needs of the small milling plant now being built at Antsirabe.

The factory proposed by the experts should be at Tamatave, the port of entry, in order to reduce to a min - imum costs of storage and to make use of the favourable

communications for distribution to the various consuming regions.

Gross return from the plant would be at least 16%. Local value added is very low (168 million Fmg) owing to the high cost of imported wheat. The employment created is very small too (57 to 71 persons) for a very high cost of investment per person employed. Annual savings on for - eign exchange are not negligibe (146 to 188 million Fmg).

(3) M a l t

According to estimates available, consumption of beer in 1975 should be 110,000 hectolitres, corresponding to 1,650 tons of malt used. If consumption rises in accord- ance with these forecasts and if a quota system on foreign beers were imposed, a local malting plant to replace the imports which have hitherto accounted for all supplies to breweries (601 tons in 1965) would no doubt be justified.

A plant with a capacity of 1,600 tons could be est- ablished at Antsirabe, close to the barley-producing areas and to the principal brewery in the country.

The return would be marginal, and the gross profit/ investment ratio would not exceed 10% ; normally the plant would not show a net profit.

The implementation of the project would create local value added of 67 million Fmg and would provide savings on foreign exchange (65 million Fmg). The plant would employ a smaller labour force (23 men) but could have a consider - able incentive effect on local agriculture.

(4) Cotton fabrics

In Madagascar the demand for cotton fabrics fluct - uates between 6,000 and 7,000 tons a year. Local product - ion, which is supplied entirely from locally grown cotton, will soon be large enough to meet the needs for unfinished fabrics which represent about half (3,900 tons) the total demand. Finer quality fabrics are at present imported; the probable market from this source is some 2,900 tons.

It should be possible to consider producing both medium and fine quality fabrics for the local market and fine quality c o m b e d y a r ns for export. The latter production would also enable the shortage of unfinished cloth

to be met : 1,000 tons could be provided by regenerating cylinder combings and incorporating xxxxxx raw cotton into them.

Two textile factories could thus be added to the Antsirabe plant already producing 3,200 tons of unfinished fabric, i.e. :

- a combined plant (spinning and weaving) producing 2,400 tons of medium and fine fabrics ,
- a partly xxxxxxxx combined plant producing :
  - as its principal line 2,000 tons of finequality combed yam for export,
  - as its secondary line 1,000 tons ofunfinished fabric for the home market.

As an alter native,it would be possible to allocate to the existing Antsirabe plant the whole of the market for xxxxxxx products; it would then produce about 4,000 tons. In that case, however, the viability and ability to compete of the plant earmarked for export prod - uction, being deprived of the means of using its by - products, would be seriously prejudiced.

The experts have limited their study to the sole indisputable project : the spinning and weaving plant producing 2,400 tons of medium and fine quality fabrics.

The gross return from this operation seems very low (7%) and would undoubtedly not show a net profit.

The most obvious importance of the project would be the amount of local value added (1,113 million Fmg) and savings on foreign exchange (1,152 million Fmg) which it provides for the country, the number of persons given employment (957) and the extent of the effects on cotton production and development.

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(5) Wood Pulp

Since 1965 Madagascar has been producing mechanical wood pulp and importing chemical pulp to supplement the supply.

Even taking into account the forecasts for 1975, local production of chemical pulp cannot be justified purely on the basis of domestic consumption; means must be considered of exporting some tens of thousands of tons. Fortunately the world market is expanding and there need be no fear of difficulty in disposing of a competitive product. On the other hand, there are numerous difficulties in connection with costs, owing partly to infrastructure shortages and partly to the diversity and limited extent of woodland in Madagascar.

The establishment of certain infrastructure equipment (roads, a hydro-electric station, water treatment plant, channels for moving material to the port of shipment and development of the port), of which the wood pulp industry would be the main or even the sole user, would be costly. The larger the scale of the wood pulp industry, the more rapid the amortisation of these infrastructure costs. Conversely, if the inadequacy of the local supply of wood limits the scale of the factory, amortisation of the infrastructure will bear heavily on the cost price, even to the point of making the product uncompetitive on the world market.

Supply difficulties, in regard to which there are a number of uncertainties, being the decisive factor for all the projects, the capacity and siting of the plant is still absolutely to be determined. In the present state of silvicultural studies and of a number of surveys already made on the establishment of a paper industry in the island, it would seem that the region of Fianarantsoa may be suitable for forestry development and for the creation of a wood pulp factory.

Generally speaking, an integrated project of forestry and industrial development would offer material advantages: an appreciable inflow of foreign exchange, the distribution of a high rate of purchasing power among the local population and the setting up of a large-scale infrastructure from which the whole of the economy could benefit.

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(6) Plastic Articles

Hitherto the consumption of plastic articles has progressed by 15 to 25% a year. The predictable slowing down in the next few years in the demand for some current articles does not apply to so-called "high diff - usion " articles, which require high-pressure injection machines, these being constantly new products for which there will probably be no slackening in specific demand. So far there is no local production of this type of article.

The proposed plant should be situated at Tanama - rive owing to the importance of the market on the high plateaux.

For its minimum capacity (130 tons) the gross return from the project would already be very satisfactory (15%), and this would improve in proportion as the higher capacity (36% for a capacity of 520 tons), which the plant would achieve progressively according to demand, was reached.

Nevertheless, the plant would contribute little to general economic development : little local value added (20 to 84 million Fmg), few savings on foreign exchange (16 to 73 million Fmg), the bulk of the operational costs being devoted to the purchase of raw materials from abroad; the creation of very little employment (7 to 14, according to capacity).

(7) Caustic soda

The present demand for caustic soda is very small but could increase rapidly if certain projects considered during this study were realised. The wood pulp plant would consume large quantities of chlorine, a by-product of caustic soda manufacture. Soap and glass plants would also provide outlets for caustic soda.

In the nature of things the capacity of the plant is linked to that of the wood pulp plant. It has been fixed at 6,000 tons of soda, i.e. 5,400 tons of chlorine, which corresponds to the demands of a 70,000 ton wood pulp plant.

Owing to costs of transport, the site selected would be that of the wood pulp plant, i.e. in the pres -

ent stage of the studies, the region of Fianarantsoa.

The implementation of the project is dependent not only on that of the wood pulp plant but also on that of the hydro-electric station. Its return will be determined very largely by the price of electricity, the cost of which represents 30% to 50% of the operating costs.

The local value added would be considerable (366 to 479 F mg), as would also the savings on foreign exchange (446 million F mg). On the other hand, the number of jobs created would be small (44) and investment per person employed extremely high.

(8) Soap

The consumption of soap in Madagascar rose from 2,792 tons in 1954 to 10,324 tons in 1965. This rate of increase would lead to the estimate that total consumption by 1975, composed mainly of household soaps, would be between 17,000 and 21,000 tons. At present imports provide the bulk of the supply, apart from a very small production by some semi-industrial soapworks. A modern soap plant, the implementation of which seems assured and which would have a capacity of 9,000 tons would no doubt mean the disappearance of the semi-industrial plants, but they would leave potential markets of 8 to 11,000 tons in 1975.

A second plant to be established at Majunga would therefore be justified. Its gross return would be 21%, i.e. a net profit of 5% after allowing 16% for taxes and financial costs.

From the community point of view the plant would provide a substantial local value added (321 million F mg). It would provide some savings in foreign exchange (82 million F mg), but would creat little employment (56 persons). On the other hand, it would provide an important market for the production and industrial processing of fatty substances, which is at present in a critical situation. Lastly, it would support the proposed scheme for planting oil palms on the East coast and would as a result give rise to a large-scale accession of monetary revenue to the economy.

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(9) Hollow glass (bottles)

Imports cover in their entirety existing needs, mainly as a result of the industrial recovery of full imported bottles, new bottles representing at most only 800 tons a year.

The quota regulations on imports of beer, min - eral waters, lemonade and wines, the bottles from which are recovered by local industry are the only means of creating sufficient demand to justify the establishment of a bottle factory. The result would be to develop a potential demand, which by 1975 would be of some 14 million bottles, i.e. 7,000 tons of glass. The rate of development of the user industries, whose expansion could be favoured by a quota on imports, will obviously determ - ine the scale of this future demand.

The plant could be established at Tamatave, close to the raw materials or to the entry port and admirably well placed for distribution to the Malagasy market, and even to Reunion.

The proposed plant would have to turn out at least 5,000 tons a year of hollow glass. This capacity would enable demand to be covered in its entirety up to 1970 or even 1975, should it prove difficult to apply the ban on imports of full bottles capable of industrial recovery with full rigour.

The gross return from the plant would be low (16%), but the project offers marked advantages to the economy in general : it would provide annual savings of foreign exchange in excess of 126 million F mg, local value added of 133 million F mg and would create new employment for some 140 persons. Further, the import quota measures - a preliminary condition for the creation of a glass-making plant - would no doubt have a very favour - able reaction on the production of beverages.

(10) Cement

Since 1952 the Malagasy consumpti n of cement has fluctuated between 100,000 and 120,000 tons. It could apparently rise to 170,000 tons by 1975. The only cement plant in the country (Majunga) has a production capacity of only 45,000 tons. The market potential is therefore 125,000 tons.

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Contrary to a project already submitted to the Malagasy Government proposing the establishment of a new cement plant of 100,000 tons at Antsirabe and an increase in the capacity of the Majunga plant to 65,000 tons, the experts now propose the installation of a single cement plant at Majunga with a capacity of 180,000 tons. They believe that this is the right solution because of the large-scale economies in the cement ind - ustry, which are considerable, and the advantages of the Majunga site, owing to the proximity of abundant clay and limestone deposits of excellent quality and to the low price of imported fuel.

The gross return from the project would be 12%. Allowing for taxes and financial costs of 16% , the net return is a minus. The main importance of the project lies in its consequences for the community : local value added (736 million F mg), saving on foreign exchange (711 million F mg) and number of persons given employment (250).

(11) Manual farming implements

The demand for implements is covered almost in full by imports. The demand, which is now contracting, should improve with the effects of urban development and essential agricultural development. The 1975 market may be assessed as being between 1,000 and 1,400 tons.

A plant established at Tamatave with a minimum capacity of 600 tons, which may be progressively raised to 1,200 tons by merely increasing the labour force and with practically no new investment, would be assured of an imm - ediate gross return of (11% at minimum capacity and 29% when operating at the higher capacity).

The project would furnish savings in foreign ex - change (52 million F mg at the smaller capacity, 121 million for the higher) and local value added on an appreciable scale (65 to 140 million F mg). The plant would employ a compar - atively large number of workers (91 or 167 according to capacity) for so low an investment/job ratio.

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(12) Stainless steel cutlery

The existing deland for stainless steel cutlery is covered entirely by imports (84 tons of spoons and forks, 9 tons of knives). Part of this consumption could be met by local production, which by 1975 would have a potential market of 125 tons of spoons and forks and 14 tons of knives, provided there was a tax on lower quality competing cutlery (aluminium and tin-plate) .

The plant could be installed at Tamatave, the siting of which favours both the import of raw materials and market distribution. It would have an annual capacity of 59 tons, where of 14.4 tons represents knives.

The viability of the project depends to a large extent on the effectiveness of the protection it would enjoy, but the return would be low in any circumstances : the gross profit is only 11% on the investment.

The project's main importance to the community is to create a relatively large number of jobs (77) for so low an investment/job ratio. The saving on foreign exchange is insignificant (10 to 27 million F mg) as the plant would be devoted to the finishing of products whose importation represents a substantial part of operating costs. Local value added too would not exceed 32 to 68 million F mg.

(13) Door-frames and ironmongery

Prospective demand, closely linked to the development of private and bublic building, has been estimated at 695 tons by 1975. At that level a project for local manufacture could replace imports, which at present represent the entire demand, while appreciably lowering selling prices.

The proposed site would be at Tamatave, the port of entry for the raw materials and the turntable of commerce in Madagascar.

The viability of the project seems to be largely assured, and the gross profit would amount to 36%. Local value added is not negligible (111 million F mg) owing to the importance of the labour factor in the production process. The plant would employ 130 workers. On the other hand, foreign exchange savings (25 million F mg) would be

low, since all the raw materials would have to be imported.

(14) Household articles

The consumption of household articles made of enamelled or zinc plate is almost entirely covered by imports, local handicraft work providing only minor quantities. The potential market could be of 1,490 tons by 1975, including 1,000 tons of enamelled ware and appr. 400 tons of zinc plate articles.

The plant would be sited at Tamatave, the port of entry for the raw materials and an ideal distribution centre in view of the scale of the coastal market. The plant would have the exact capacity of the market allowed for (1,000 and 400 tons).

Its gross return would be too low (gross profit 15%) to show a net profit, allowing for a level of 16% to cover taxes and financial costs.

The main importance of the project lies in the creation of a comparatively large number of jobs (157) for so low an investment/job ratio. Local value added would be 104 to 230 million F mg, according to plant capacity. Savings on foreign exchange are not high (44 to 114 milliard (?) F mg), since operating expenses consist mainly in the cost of importing raw materials.

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VI. SOMALIA

A. General

Manufacturing industry in Somalia - about 30 plants and less than 4,000 workers - still occupies an insignificant place in an economy based essentially on pasture and agriculture. In the main this is caused by the conjunction of two factors : the absence of natural resources of sufficient importance and immed - iately exploitable and the predominance of a subsist - ence economy.

a) The scarcity of natural resources distinguishes conditions in Somalia from those in a number of African countries whose mining or agricultural resources have attracted foreign investment and initiated develop - ment. Those countries have possessed a basic infra- structure and have been able to export their products to international markets ; those activities have cre - ated internal monetary incomes and brought into being and developed a monetary domestic market, which has provided an outlet for a nucleus of local industry.

Hitherto Somalia has possessed hardly any nat - ural advantages which could attract capital and intro - duce the local economy to international trade. It has not so far been possible to develop any mineral res - ource. In this country soil itself is a rare factor and its productivity is by nature small.

The cotton and banana plantations, which were created in 1922-26, began at that time to produce a small national income. In the case of cotton, this is no more than to recall the past, as this crop

passed out of existence several years ago. Bananas, on the other hand, still hold a preponderant place in the country's exports (48% of the total), provide a living for 40% of the sedentary population and finance more than half the national budget. Costs of banana production and marketing are, however, high and future export prospects do not seem very encouraging.

b) The preponderance of a subsistence economy is particularly marked in Somalia. Some 75% of the popul - ation lives outside the monetary orbit in a social, technical andcultural environment which does not favour industrialisation.

The nomad population, which represents 60% of the total population, is for its main activities subject to the what amèunts to a climatic determinism, caused by the rarity and irregularity of water resources.

Pastoral nomadism, which in these conditions is a form of adaptation to natural constraints, plays a leading role in maintaining the smallness of the monetary sector, since the traditional extensive breeding of cattle seeks to accumulate stock and only exceptionally markets a small part of it, thus hindering the development of trade. Moreover, the low per capita income does not allow sedentary populations to consume a significant amount of the products of breeding. Lastly, while incomes from modern agriculture and from the second and tertiary sectors are higher, they are not in total sufficient to constitute a market of any importance for the products of the pastoral economy. There remain only small outlets for export in the shape of living animals or tinned meat, but so far these possibilities have remained under-exploited.

Traditional sedentary agriculture possesses only small holdings, with poor soil and badly developed by primitive methods. Here again, self-sufficiency persists at a very low level of real income which hardly seems to improve.

The extensive European plantations which carry on an intensive agriculture using modern techniques and irrigation cover only 14,000 hectares. This cultivation has had very few imitators, as the technique of plant - ation agriculture cannot really be transposed to food crops ; the economic and social dualism of the country thus tends to perpetuate itself.

The present development of Somalia is therefore based almost entirely on rather primitive single-crop cultivation which has been unable to support any large and lasting expansion of monetary income. The country is barely emerging from self-sufficiency. The monetary economy is marginal, both in manpower and in income, and seems unable to absorb a volume of local production which could justify industrialisation on a large scale. The prospects for manufacturing industry are dominated by these funda - mental constraints, since Somalia does not possess and cannot in the short term attract any of the principal factors of industrial production : natural resources, capital, trained manpower, infrastructure and energy.

Further, no association of the market with those of neighbouring countries, whose economic resources are in most cases very much greater than those of Somalia, appears to have been envisaged in the existing political conditions.

In the immediate future, therefore, the scope for industrialisation proves to be extremely narrow.

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B. Proposals by the experts

The experts have been able to identify only three possible industrial developments.

(1) Grapefruit juice

The extraction and processing of grapefruit juice is a project which is very representative of agricultural possibilities in Somalia. Provided the amount of irrigated land is extended, this country has obvious comparative advantages for the production of citrus fruits, particularly grapefruit. The plain comprised by the rivers Shebeli and Juba appears to be the area most likely to produce high yields per hectare and the factory should naturally be established close to the citrus plantations.

The present production of grapefruit (1,000 to 2,000 tons) is, however, quite clearly insufficient to supply a factory of appropriate capacity. It should be able to process some 15,000 to 20,000 tons a year and to produce nearly a million litres of juice, or more. This production could only be obtained at the cost of a plantation programme covering 2,000 hectares and the greater part should be exported. The setting up of a grapefruit juice factory, therefore, requires a long-term programme, as the plants yield a satisfactory product only after the tenth year. However, it remains an interesting project, provided the international demand for grapefruit juice evolves favourably, as it would enable a high degree of purchasing power to be distributed throughout the sedentary population.

According to capacity the investment (10 to 12 million Somali shillings, i.e. 1.4 to 1.7 million units of account) would yield a return of 5 or 18%. Local value added would amount to 5 or 10.5 million Somali shillings. The number of persons given employment would not exceed a hundred or so.

(2) Powdered bananas

This project, adapted according to a feasibility survey carried out by a German experts' mission, seeks to facilitate the adaptation of the Somali banana industry to the market conditions prevailing when Italy

has removed the protection it at present grants to bananas exported to its territory.

The proposed factory would produce 3,540 tons of powdered bananas. The market surveys on which the German experts based themselves show that this quantity could easily be absorbed by the European market. However, in the interest of regular marketing it would be desirable to grant exclusive selling rights for the product to a European firm specialising in the distribution of food products.

The factory should be established in the Genale region (about 100 km south-west of Mogadiscio), which has large surpluses of bananas. It would have to be a highly capitalised concern (investment: 55 million shillings) employing 200 workers. The annual profit would be about 7 million shillings, or a return of 13%. Local value added would be 18.7 million Somali shillings.

(3) Cement

Imports of cement into Somalia have greatly increased since the country's independence and to-day exceed 40,000 tons. This consumption is not, however, sufficient to ensure the viability of a cement works restricted to the home market. The proposed project depends, therefore, on possibilities of export ; these seem to be favourable as regards the Sudan, Aden, Kuwait and Bahrein (whose total imports exceed 1 million tons and which has only two projects for cement plants not exceeding a combined capacity of 300,000 tons). The dependence of the Somali cement plant in relation to foreign markets would certainly diminish gradually as the country develops and as the road, port and especially energy infrastructure undergoes large-scale development.

In such circumstances the establishment of a cement plant in Somalia would be a financially sound project (level of return 3.2%) but one of particular value to the country's economic development.

Starting from the pessimistic assumption that the local market would purchase only 40,000 tons a year , the balance having to be sold abroad at the world price ,

the minimum production capacity in the case of Somalia would have to increase to about 100,000 tons annually to guarantee a sufficient return on the investment. A lesser capacity would involve an appreciable rise in cost price per ton, whereas a higher capacity would make it necessary to export at a lower price excessive quantities, if total receipts were to cover the total costs of operation.

The site proposed for the plant is Berbera, owing to the nearness of exploitable markets and of apparently favourable sources of raw material. As an alternative, however, the region of Mogadiscio would be an acceptable solution should a more detailed study of the quality of the available raw materials recommend it.

Local added value from the project amounts to 3.6 million Somali shillings. Savings on foreign exchange would be some 6 million shillings a year. The proposed plant would offer employment to some 150 workers.

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