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AGRO-INDUSTRIAL SEMINAR
OF LA VEGA *

DOMINICAN REPUBLIC

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* The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO. This document has been translated from an unedited original.

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I

A CRUCIAL DECISION

The Dominican Republic has decided to develop agro-industry. In September 1974, the Dominican Chancellor, Dr. Víctor Gómez Bergés, presented to the twenty-ninth session of the United Nations General Assembly his Government's decision to embrace this new strategy, in an important document entitled "The Policy of Accelerated Economic Development", and explained the reasons for that decision.

This policy was warmly welcomed by the United Nations Development Programme, and large-scale technical aid was promised, some of which is now being implemented.

The National Planning Office (ONAPLAN) and the Technical Secretariat of the Presidency made the development of the agro-industry the corner stone of PLANDES 26 ("Possibilities of Economic and Social Development in the Dominican Republic"). Chapter IV, "Stages in Socio-economic Development", presents a summary of the general development scheme for the 10 years covered by the plan. The emphasis in the first phase from 1976 to 1981 is on agricultural and agro-industrial development. In the second phase, from 1981 to 1986, there will be gradually increasing emphasis on industrial development. During this second phase, and certainly throughout the future, the development of agro-industry will continue to grow in importance and will sustain development of the other sectors.

Our present meeting is a very important one since it is the first regional seminar to be held in a region which, because of its exceptional material and human resources, has the greatest immediate possibilities for achievement. The dynamism of the members of the Rotary Club of La Vega, where the idea of organizing this meeting originated, has made it possible to gather together a very wide range of high-level and active participants from all sectors.

As this is the first milestone on the way to agro-industrial development, we have a very heavy responsibility to our contemporaries and an incontestably greater responsibility to future generations.

As the Government has stated, it has done its job by taking the basic initial decisions in proper time and form, including putting its new policy before the highest international public forum. The Government has been very clear on this point, as has also its Planning Office in devising the corresponding strategy, but, even though our statements and the plan give clear indications, it may well be that, as often occurs, economic facts will be a barrier to optimum implementation.

In accordance with an information task given us by ONAPLAN some time ago, we are now collaborating in clarifying ideas, objectives and targets.

The initial phase of establishing agro-industry in the Dominican Republic is at the parting of the ways, and the economic and social outcome - the latter with all its derivatives - will differ very much according as to whether it chooses one way or the other. Our aim is to try and show where each of the ways leads.

II

THE CEGAN/ECLA DIAGNOSIS OF THE LAST 25 YEARS

Setbacks in the Latin American process

Until a few weeks ago it would have been risky, despite the very clear evidence, to make any judgement, however well-founded, on the present state of Latin American development. That is now no longer the case, since a diagnosis and a recommended cure have been worked out by a competent body.

The Committee of High-Level Government Experts (CEGAN) of the Economic Commission for Latin America (ECLA) met in April 1977 to appraise progress over the last 25 years and the International Development Strategy. Their report is invaluable because it covers 25 years of endeavour and is the work of government-appointed high-level experts. It is therefore not something produced by officials of international bodies nor the result of a meeting of national ministers or political officials.

CEGAN has drawn very clear conclusions and made very concise recommendations. In relation to the development situation in Latin America, it states, in the part of its report of concern to us:

"... there is increasing maldistribution of income, underemployment, reduced productivity of much of the labour force and inability of the masses of the population to participate significantly in the integral process of reform.

The greater part of the rural population has not benefited from the prevailing processes of economic growth and agricultural modernization, and their situation has been aggravated by the partial disintegration of previous sources of livelihood and security.

The structure of ownership of wealth has also tended to become more unfavourable for the deprived strata. Concentration has increased, even in branches where it was hitherto low, favouring foreign investment and the so-called middle and upper sectors. In other words, extreme poverty in Latin America remains at relatively high levels in urban and rural areas. While the most important source of extreme poverty

is considered to be the countryside, with the increasing marginalization of the weaker sectors of the rural population, the phenomenon of urban marginality has increased as a result of inflationary pressures and the exodus from rural to urban areas under the unbearable pressure of chronic abject poverty; that pressure is so great that something like 50 per cent of the total population of the region were living in urban areas of more than 20,000 inhabitants in 1975.

As the Quito Appraisal pointed out, the region's achievements in the field of agrarian reform cannot be considered satisfactory, since the systems of land tenure, use and exploitation continue to be largely inadequate to meet the growing needs stemming from the economic and social development of the Latin American countries. The effects of inflation, contraction of employment, and declining real wages have had a serious impact on the lower-income groups. Open unemployment has reached high levels in a good many cities, and the opportunities for obtaining employment continue to be limited."

As a corollary of all the foregoing, CEGAN adds:

"More vigorous and innovative methods, which go further than assistance or relief policies, must be found to enable the marginalized strata to meet their basic needs, contribute to production and organize themselves to defend their own interests. Such measures will call for suitable distributive policies and a review of the services provided by the State."

In other words, the conclusion of the Committee of High-Level Government Experts in the light of the results of endeavours over the last 25 years is that "more vigorous and innovative methods, which go further than assistance or relief policies, must be found to enable the marginalized strata to meet their basic needs, contribute to production and organize themselves to defend their own interests."

To be quite blunt, if those conclusions were to reach the masses marginalized by the development process in a language which they could understand, it is difficult to see how there could be any other cry than "no more development, please".

There are many definitions of development, but in his survey, which also covers 25 years, the author has chosen the one which in his view gives the best and most complete reflection of what the concept should be. I refer to the definition given by Laureano López Rodó at the plenary meeting of the Spanish Cortes in 1957 when submitting the draft law on administrative procedure in the context of the political reform in Spain. In López Rodó's view, there is development when the inhabitants of a country achieve satisfactory living standards, have access to the benefits of education and fill decision-making positions in society.

I shall return to the definition later, but I must point out immediately that it contains three elements - i.e. constituent parts of a whole - all of which must be present together if the whole is to exist. It is not enough to achieve economic solutions, for they are at best insufficient on their own to raise the general standard of living; they would hardly lead to López Rodó's "satisfactory living standards" and, quite apart from the difference between "better" and "satisfactory", they would do nothing about full and free access of the masses to the benefits of education. It is even more difficult for economic improvements alone to make it possible for people to fill decision-making positions in society, for when education is out of people's reach, it is more difficult for them to fill the leading posts in society.

III

THE LIMITATIONS OF IMPORT SUBSTITUTION

In the light of the figures analysed by CEGAN and of the definition I have given of development, Latin America is not developing; instead, there is consolidation of a situation which it had been decided to change, through various agreements, such as the Alliance for Progress and others. The important point is that we know for certain that those programmes have not led to development (it might even be proved that they have led to under-development) and that the methods of work used have been those of pseudo-development.

At present, the Dominican Republic, which launched its new strategy in 1974, has obviously gone further than CEGAN's definition of a proposed cure and is preparing to adopt very energetic and innovative methods to enable its marginalized masses to start contributing to production and organizing themselves to defend their own interests.

Previous development in the Dominican Republic was based on two programmes very similar to those generally adopted in the countries of the region. On the one hand it endeavoured to achieve agricultural development pure and simple, based on technical and financial assistance, to productive structures in their original form - i.e. leaving everything as it was and endeavouring to increase productivity. In the second place, it embarked on the most difficult and expensive route to industrialization, namely, import substitution, which is particularly difficult for a country like the Dominican Republic whose history over the last 50 years of course ruled out any previous industrial experience and any previous development of institutions.

By changing its strategy, the Dominican Republic has, whether deliberately or not, apparently acted on the conclusion of Paul Hoffman who, after running the United Nations Development Programme for 12 years, set down his final conclusions on what he called "the period of real education", as follows:

"It is an illusion to think that a country can be industrialized by building factories. This is not the way. A country is industrialized by building markets.

All our thinking has been clouded over by external aid. If it is thought that external aid will help to win friends and influence people, it should be known that it won't win a single friend or influence anyone. On the contrary, it will make bad friends.

All countries tend to make better use of their physical resources than of their human resources. It is difficult for a country to give up its diamond mines or disregard its oilfields. However, the human potential is incommensurably more valuable but remains wasted, often for the most stupid of reasons.

In my retirement I shall have the good fortune to be able to set aside urgent business and devote myself to important business."
(Provisional translation).

Much of what the countries of the region had to do to catalyse their development processes was not unknown in the region at the time. What has happened is that, since development processes must proceed from political decisions taken by governments, which are of a short-term nature, the emphasis has been on urgent matters, while important matters have been forgotten.

There has been sufficient analysis of the Dominican import substitution process elsewhere to make any further reference to it here superfluous. However, there is still much discussion in the country as to whether it is an out-of-date model or whether it is capable of development helpful to the country. With many years' experience of industrial consultancy behind us, we are certain that it did not give the expected results because it was a prematurely imposed programme. This means that if what should have been done previously is done now, import substitution has a future - otherwise it has not.

There are many reasons for this but in the end all of them derive from a single basic cause - the restricted size of the domestic market, due basically to the iniquitous distribution of incomes. Once there is a domestic market, there will be development and, indeed, after a few decades of improvements, exports. But to insist on this policy without changing existing patterns will increase costs, while to provide an outlet by establishing a domestic market will transform the cost into a very productive investment.

The policy of import substitution must not be neglected in the new strategy; it should be included in its proper place but should not, as it has done previously, be an absolute requirement which therefore excludes anything else. What should now be done is to industrialize by creating markets.

The problem arises of how to establish a domestic market and how to distribute income, and this is where the process of agro-industrial development comes into the picture.

However, we must work on innovative programmes. A marketing expert will tell us that a market consists of the number of people who can buy goods, but, according to the developmental concept, a market is not the number of people who can buy goods but rather the amount of goods people should buy.

The problem lies between the "can" and the "should".

IV

AGRO-INDUSTRY

Just as we must define the word "development", we shall have to define the neologism "agro-industry". A neologism is a new word or acceptance or term in a language. There are neologisms of scientific origin, or technological origin, of literary origin and of popular origin. So far as we are aware, the word "agro-industry" is a neologism of popular origin based on technological reasoning. It arises from the symbiosis of the element "agro", meaning a field or collection of fields, and the word "industry". However, it is not a literary symbiosis, it is a technological symbiosis - i.e. it originates from a symbiosis of economic activities.

The North Americans, who are usually rather careless in such matters, are causing confusion. They talk about agro-industry and they have begun to publish some very superficial works using the neologism, sometimes as part of, and at other times as an extension of, another neologism which is definitely their own - agribusiness. By agribusiness they mean - and here we can agree with them - the whole gamut of traditional activities with which the rural product is connected in one form or another until it reaches the final consumer as an industrial product. In this way, a financing concern, a bank, a producer of inputs for agriculture and even a truck driver is in agribusiness. They also use the term agro-industry to denote any industry having any sort of contact with the rural product on its way to the final consumer.

We understand agro-industry differently and, as will be seen later on, it is very important that we should do so.

If we were to follow the North American acceptance - certainly of a part of the theory - we should have to say that a television factory or a saucepan factory is a mining industry and the bank concerned is a mining business. Nobody would think of using such a classification.

Another important point which needs explaining is that agro-industry - i.e. the series of activities whereby a producer produces a raw material of rural origin, processes it and markets the end product - is older than industry.

The first work to which man turned when he became sedentary was agro-industry. Then came the Industrial Revolution and with it the division of labour to cope with the requirements of contemporary society.

Today we are confronted with other needs, which can be more easily satisfied because of our new and better possibilities.

The division of labour was responsible for originating various kinds of new activity, including that of the middlemen.

When CEGAN now tells us that the faulty distribution of income is increasing in Latin America, it is telling us that income exists and it is "mis"-directed towards particular strata of the population. When it tells us that the greater part of the rural population did not benefit from the prevailing processes of economic growth, it is telling us that there was economic growth and the polarization of incomes was detrimental to the sources of production and producers. When it says that the situation of that immense majority is worsening owing to the partial disintegration of previous sources of support and security, it is telling us that previous events have led to extremes of destruction of progress achieved previously.

There is therefore more wealth, but it is bound to finish up in the hands of those who do not produce it, who do not pay for the loans or their costs or the production inputs or run the risks which production always entails.

Structural analysis indicates that it is the middlemen who take this wealth, inflate it and channel it to the social strata in which it is concentrated.

We maintain that the rigid compartmentalization usually made by traditional economics, as a science, into primary production and producers, the secondary, tertiary and, if you agree with Wiener and Kahn, quaternary sectors is unsatisfactory because it is of no use to us and also because something else is now possible. Another system of production, by the agro-industrial producer, has had to emerge or more accurately be resurrected.

Land

Another factor which is also a product of the new era has appeared, namely, the increasing land hunger of the marginalized population. Unless it is tackled in good time, it will have unpredictable and undesirable results. The world population doubles in a little over 30 years - i.e. 30 years is now sufficient for something which previously took centuries - but the cultivable area of the earth is still three billion hectares. The problem is very serious in the Dominican Republic, because more than half the population is less than 15 years old. These vast numbers of young people will begin demanding goods and services very soon.

The problem of income on the one hand and of quantitative agrarian reforms devoid of any qualitative aspects on the other hand is leading to the establishment of unproductive smallholdings throughout the region.

A stop must be put to this fragmentation of the productive process. The small producer is a captive of his own smallness. Development implies the performance of a complex of functions in line with particular scientific principles and principles of the arts by means of which scientific principles are applied - i.e. technology. These principles, techniques and functions originate from an analysis of complex structures. Planning, organization, motivation, innovation, experimentation, evaluation, etc. are functions which can be performed only by complex organisms, or, to use biological terms, by higher organisms. The small-scale and medium-scale producers, on the other hand, are so to speak unicellular. We have been asking productive protozoa to perform functions of mammals, so to speak.

That leads to a further question. How is it possible to change these producers from protozoa to higher organisms capable of performing development functions? How can we arrange that the organism is converted into a multi-cellular one consisting of systems and devices which in turn consist of specialized organs?

Of all economic activities, it is agro-industry that has managed to achieve this.

The agro-industrial producer

The constraint caused by the factors which I have briefly analysed - and by other factors which cannot be analysed here - made inevitable the appearance on the productive scene of a new type of economic agent who moves in a new and different reality and about whom there is much discussion and comment but whose identity or dynamics are not defined. This new economic agent has recently been multiplying in the world so rapidly that the literature of economics has not yet been able to devote to him the close study which is urgently desirable.

The universality of the model

However, his importance is now such that, despite the world's ideological conflicts, in which each faction tries to show the other that the latter's systems are not working, the agro-industrial producer has managed to exact tribute from both factions and to gain acceptance as a subject-solution, at the risk of him destroying many of the out-of-date ideological postulates of both sides.

He has been included in the most recent 5-year plan of the USSR and, what is even more novel, included as he should be - i.e. as a self-managing organism. This implies recognition of the fact that production and its problems call for the existence of small self-managing bourgeois operators. For its part, the United States of America will launch identical projects of its own in the next decade, as will be clear from the detailed survey we shall give.

On each side somebody had to try and solve all the socio-economic problems of development, viz. income distribution, by completely eliminating traditional distribution channels, agrarian reform conceived of in terms of plane geometry, by giving it a qualitative content, the transfer of science and technology, by removing the rigid barriers around it, and the continuous improvement of productivity, by making possible a new pattern of interplay between existing factors in the form of combinative innovation.

This is more in line with man's nature, with participation by all in the creation of national wealth and, finally with putting everything in its place, as is fitting for a complete new structural arrangement which overthrows and leaves behind an obsolete system.

This new successful agent of total development, to whose attributes - and let there be no doubt about this - little thought has been given, is the product of that symbiosis; he is the agro-industrial producer.

He is not a rural producer nor an industrial producer nor is he a business agent. He is a new species. His environment is a fully integrated environment and he is integrated horizontally and vertically. He is integrated horizontally in that he does not confine himself to the production of a single raw material or of a few raw materials but produces as many as he can from a pre-determined area of land in accordance with concepts and knowledge which are themselves new and based on the new method of cultivation through photosynthesis. He is integrated vertically because he not only produces raw materials but goes further and processes them industrially in an uninterrupted chain of consecutive stages until he obtains the end products which he supplies to the final consumer, thus achieving commercial integration.

He is also a large-scale producer - the only producer able to reach a high enough productive and commercial level to be transformed into a higher biological organism capable of assimilating and disseminating technology on the scale and under the conditions essential if the dreams of the extension workers are to be realized.

In traditional industry we differentiate between artisanal, small-scale, medium-scale and large-scale producers, and there are the same categories in agro-industry. In cases where the system has become well established, all of these are represented. Structural details may vary from country to country and from environment to environment, but, whatever the terms used, the structural pattern of agro-industry is one of associations co-operatives and companies, its special characteristic being that it transcends these traditional forms since its objective is precisely to form capital by claiming the value added achieved through total integration.

The potential of these "higher organisms" is such that, if productivity is satisfactory, their possibilities of horizontal integration astonish even the most optimistic planners.

Their origin may vary just as their structural form; they may arise from an association of rural "protozoa" or from an association of industrial producers, from what was originally a public project or from a single large private producer. There are at present actual examples of all these different forms.

An agro-industrial producer on the artisanal scale is, for instance, a producer of honey who extracts, processes and markets the end product, which need not necessarily be merely the honey.

By extrapolation of the example, the reader will be able to see what a small-, medium- and large-scale agro-industrial producer is.

As may be gathered, we are talking of a production structure which leads to the emergence of a new economic agent. This new kind of structure permits of the existence and combination of artisans and small-, medium- and large-scale producers. It must not be understood as excluding the other structures - the ones we have called traditional - since the strategy does not discard them but merely considers them as providing logistic support for the main structures such as agro-industry or mining or, in some cases, to be structures which supplement development. However, the agro-industrial structure will in all cases be the foundation on which the others can be securely supported.

V

THE BASIS OF DEVELOPMENT

These agro-industrial complexes give rise to two main kinds of production - food industries of rural origin and non-food industries of rural origin.

Wheat, rice, barley, legumes, maize, sorghum, yucca, sugar, coffee, cocoa, meat, dairy products, fruits, vegetables, fish, etc. are examples of the one type, while non-food industries of rural origin are exemplified by those producing goods serving mainly to satisfy basic human requirements for clothing, housing and basic products such as cotton, jute, wool, coconut and other fibres, rubber, wood, paper, etc.

Nearly all agricultural raw materials for non-food use are suitable for more complex processing than food products and therefore tend to have a higher value-added factor than the latter. Another feature of the non-food products sector is that it makes it possible to compete with synthetic products and artificial fibres.

It is normally a characteristic of the latter products and of food products that their price elasticity of demand is lower than in the case of agricultural raw materials, because of the influence of quality and marketing factors tending to reduce the relative influence of price on demand. Their prices are therefore more stable than those of agricultural raw materials and their production provides developing countries with a greater return in terms of value added than can be obtained by exporting the corresponding raw materials.

Despite the wide variety of existing development models, it seems undeniable that industries using agricultural raw materials are particularly suitable for developing countries because of the following characteristics:

- (a) high labour-intensiveness;
- (b) high employment linkage effect;
- (c) low capital requirements;
- (d) low technical skill requirements because of the relatively low technological ceiling;
- (e) stimulation of rural development;
- (f) a greater degree of export-orientation.

General stimulation

These industries fulfil an important function by stimulating production, productivity and diversification of the primary sector and are strategic elements of the development process. It is industries of this kind, based on natural resources, which have opened the way for other industries in developing countries, just as was the case several generations ago in the industrialized countries.

If by development is meant the gradual raising of social well-being by means of a fuller realization of human potential and by means of social progress, technological advance and economic improvements, then industries supplying food, clothing and housing can be the nucleus of development in many countries.

An essential precondition for the full realization of human potential is an adequate supply of food, clothing and housing.

Social progress presupposes juster relations between agriculture, industry and marketing services. It also presupposes a fairer distribution of national income, better relations between citizens and the society to which they belong, and more concern for the future of generations to come. In most developing countries, the industrial processing of agricultural raw materials can have a great effect on all these aspects of social progress. Also, the fact that some agricultural raw materials are processed in their country of origin and not in developed countries abroad will make for greater justice in the international sphere.

Technological advance, the third main element of development, is also closely linked with the industrial processing of agricultural raw materials because of the application of technology in the post-harvest stage. Given proper care, considerable quantitative and qualitative waste of agricultural products can be avoided by means of proper storage, grinding installations, utilization of by-products, industrial processing, packaging etc. All these activities can be carried out on a small or medium scale; they tend to bring about capital savings and are very labour intensive. They usually have a multiplier effect on industry by initiating demand for containers, packaging etc. such as paper fibre bags, wood packagings, tin plate and plastic containers. These are activities which in turn stimulate the mechanical engineering and construction industries and a variety of services, so that a wide-ranging process for the generation of income and employment opportunities is initiated.

Clearly, therefore, the industrial processing of agricultural raw materials can in the end bring about economic improvement.

Even the elementary processing of raw materials calls for the production of equipment such as crushers, meat and fish drying plant, rice processing machinery, grain graders and various forms of ancillary devices. This first phase is usually followed by a long chain of ever more complex industrial activities having backward and forward linkage effects on other industries and services. In this way new employment opportunities arise and there is economic improvement.

Industries processing agricultural products can also have a catalytic effect on different kinds of agricultural activity. For instance, the production of cereals has been stimulated in many countries by the development of services for the transport and final storage of grain, the growing of fruit and vegetables has expanded around co-operatives which select and pack products and around processing plants, and large numbers of poultry farms have sprung up around forage producing plants, hatcheries and poultry processing plants.

These integrated agricultural development programmes linked with enterprises processing agricultural products have been the main factor in encouraging farmers to participate in commercial markets. Industries processing agricultural products can also serve as catalysts for various kinds of agricultural activities.

Industries processing agricultural products seem to encourage farmers to broaden their activities and tackle new ones. They ensure a reliable market, reasonable credit conditions, training and appropriate technical aid. This kind of development therefore seems to be particularly important to countries which have to change over from a subsistence agricultural economy to a market agricultural economy.

In the light of these reasons and principles, therefore, we should study the integrated agro-industrial complex, as the basic assumption for the development of the region.

The productive symbiosis

We have seen that the integrated agro-industrial approach calls for vertical integration, from the farmer to the final consumer, of the entire process of the production of foods and other agriculturally-based consumer goods. Vertical

integration centralizes management and in some cases ownership of all phases of the process and its planning in a single body which, being market-oriented, adopts an industrial approach and follows a policy adapted to market requirements. A body of this kind would apply profitability as the only valid criterion of success and would try and produce and process acceptable products by adopting an industrial approach which would improve agricultural yields.

The solution of the problem of smallholdings

Centralization of this kind does not mean centralized land ownership, but the system does often solve the problem of smallholdings. There are integrated agro-industrial complexes supporting tens of thousands of small producers who would otherwise not achieve economies of scale. Mere ownership of land is one thing, structural organization and centralized planning is another, and both together can give and have given great prosperity.

This approach, which is expressed in terms of the agro-industrial producer, acts as a catalyst for its own development, first by the reinvestment of profits, thus increasing the producer's own possibilities, and second by directly or indirectly stimulating the economy of the rural region concerned.

This produces a chain reaction of socio-economic development covering highway construction, the improvement of water distribution systems, the development of housing, and improved credit services and training and educational activities, as well as the diversification of industrial activities previously referred to.

The structure of an integrated agro-industrial complex will include or be based on groups of activities fundamental to any integral industrialization process.

These groups include:

1. Production of basic crops and the harvesting or gathering of raw materials

This group of activities covers the entire range of large-scale agricultural operations necessary for the production of crops specially intended for industrial processing. There are various forms of industrial production, particularly with regard to hunting and fishing, the gathering of wild fruits, berries, vegetables and other similar products.

2. Pre-processing, the transport and storage of basic crops, game, fish and pre-processed products

This group covers the activities of growing, harvesting, cold-storage, selection, grading, drying, washing, dehydration, cutting and other forms of pre-processing raw materials, in order to present them in a more suitable concentrated form for subsequent industrial processing.

3. Basic food processing industries supplementing the production of raw materials

This group covers the basic industries for processing primary foods: the production of sugar, canned fruit and vegetables, vegetable oils, oil cake, production of flour for preparing particular basic foods and separating by-products for other uses. This group is closely related to the production of raw materials.

4. The production of animal feedstuffs

These activities in the cycle of consecutive operations are concentrated around the industrial production of animal feed, which is the basis for the success of modern industrial animal husbandry (in feed-lots). Today the animal feed producer is the most important link in the chain of the profitable production of meat, eggs and dairy produce.

5. The production of animal proteins by the use of industrial animal husbandry processes

These activities consist of industrialized animal husbandry using a technique of feeding and fattening large numbers of animals in "animal protein factories" which are often sited very near large markets or processing installations (slaughterhouses, meat and dairy produce processing plants, etc.), leading to a logical form of combination between the animal feed factory and industrial animal husbandry, the processing plants and the marketing services.

6. The production of foods for direct consumption

This includes the secondary industries processing foods using products supplied by groups 1, 2, 3 and 5. All these raw materials are combined to form a large supply of foodstuffs prepared for direct consumption or sale to the consumer. These activities use advanced technology that is not labour-intensive to manufacture products of high nutritional value.

7. Distribution and marketing activities

This covers all the technical and commercial services required to achieve a regular supply of food products for both the domestic and export markets (warehouses, refrigerated transport, restaurants, cafeterias, chains of shops and home suppliers, etc.).

It is not always necessary to integrate all these groups of activities; in some cases a group can be cut out or replaced by operations organized in the form of co-operatives. In some cases it is not feasible to start up all the activities simultaneously and they must be started up gradually. Also, some food products can be developed successfully in small-scale independent operations. Clearly, however, the setting up of integrated food processing complexes is preferable to other methods of production, provided that it is viable.

Symbiotic activities

Such activities make it possible to programme and carry out the industrialization of rural regions with an industrial rather than an agricultural approach, since it is usually easier for industry to apply objective criteria to all the operations. This makes it possible to obtain the benefits of applying industrial technology to agricultural sectors which are very depressed or in which there is a very high level of ecological hostility.

It is impossible to over-emphasize the benefits which this method can provide in improving local technical skill at all levels.

Projects of this kind have been developed with very great success even in highly depressed regions with noisome marshes and swamps and in subhuman conditions not to be compared with those in ordinary regions, and it has proved possible to establish the most powerful and advanced food producers of the world in such regions.

The people making up the complexes, who were children of the landless, homeless and uneducated, when the complexes were set up, are today very dynamic elements with a high level of scientific and technical training. Nothing of the past now remains; at present the complexes are a Mecca to which leaders at all levels and of all activities of developing countries go to be trained. There is no other system which has managed to raise a region and its entire population to such a level in such a short time.

Record productivity

The results obtained shed light on agricultural yields, which have increased to world record levels. It can clearly be seen how production deriving from large-scale industrial animal husbandry and the industrial production of non-food and food products depend in the final resort on a strong agriculture, which in turn depends on industrial support; this finally demonstrates that the growth of agricultural production is usually a critical factor in determining the rate at which industrialization can proceed, and in turn that inadequate industrial support for agriculture and a lack of industrial installations for processing agricultural products greatly handicap the development of agricultural production and productivity.

In other words, the inter-dependence between industry and agriculture is represented by the flow of basic products that pass between the two sectors, whether in the form of industrial support (fertilizers, pesticides, agricultural machinery, implements, tools, packaging, etc.) or in the form of the industrial processing of agricultural raw materials, thus proving that neither industry nor agriculture can really advance unless there is a parallel and balanced development of both sectors.

Integrated agro-industrial complexes are precisely the best instrument for achieving this permanent equilibrium.

VI

THE VIABILITY OF THE MODEL IN THE DOMINICAN REPUBLIC

There was unbridled optimism once the stage began of publicizing the strategy with a view to identifying the dynamic personalities who in the end would implement it, or not; however, doubts became evident in the language in which resistance to change was expressed, not only amongst the people but also on the part of leading figures in the public sector.

The objections are based on the proposition that the model is not applicable to the country; it is alleged by some that there are shortcomings in domestic human resources, while others say that there are faults in the actual structure and yet others go even further and maintain that the changes imply a socialist revolution.

The aim of this chapter is to prove the viability of the model.

The development of a vigorous agro-industry requires a number of elements which in the case of the Dominican Republic are available everywhere - sunlight, water, land, people and ideas. The basis of agro-industry is photosynthesis. The Dominican Republic always says that sugar has been the backbone of its economy. Of all known plants, sugar cane is the one that captures the largest amount of sunlight per hectare. Since sunlight is not at present subject to considerations of price, market pressures, monopoly, need for foreign currencies etc., the Dominican economy has been running on sunlight without any great difficulties.

The Dominican Republic is carrying out a most impressive water-control programme which is bringing very large areas of desert land into cultivation every month. It also has very large uncultivated areas.

These elements are already there.

Turning now to the viability of the model, the Dominican Republic has one of the most extensive agro-industrial complexes in the world. Sugar-cane is at the hub of far-reaching horizontal integration from which radiate spokes supported by the hub, which become highly profitable activities. In

this way animal husbandry, fruit growing and various agricultural activities are carried on. The vertical integration is such that, through one of the "spokes", namely, the hotel and catering trade, its end product finds its way to the tourists' tables; also, the end product is exported at optimum prices without all the problems of commercial exporting. The complex has developed the world-famous La Romana holiday resort, the Mecca of the international jet set and far above the level of anything comparable in the Caribbean. Commercial cinema has also been set up in the form of a Paramount subsidiary so that art and the idyllic tropical environment are exported. It is a pole of integral development, as are many of the world's present-day agro-industrial complexes.

True, it was the work of a powerful transnational corporation, Gulf and Western Americas, but even though its staff are foreign, it is a spur to all the domestic human resources, including members of the management of the La Romana Division.

So far as ideology is concerned, we can assume quite without irony that Gulf and Western has not postulated a social revolution as a prerequisite, and that it would not claim that it was necessary.

We do not know where the company is heading, but we observe action aimed at distributing land among its staff on a settler basis.

In our view, the Dominican Republic should establish several all-Dominican La Romanas. The model is working.

A medium-size agro-industrial complex is SOSUA S.A., where the producers are the shareholders; this organization produces its own raw material, processes it industrially and sells it directly to the final consumer through its own sales outlets.

Even more - and although it is not something which is not very popular today - there was in the Dominican Republic an agro-industrial producer who at the time was one of the biggest in the world. This was Trujillo, who

in his own way - and this does not rob the model of its characteristics - developed a wide range of horizontal organizations and complete vertical integration, including the production from Dominican agricultural material of industrial goods which are now no longer produced. The break-up after Trujillo's death gave rise to the industrial complex now known as the Dominican State Enterprises Corporation (CORDE).

Also, the country has a multitude of artisanal agro-industrial producers and many small-scale producers.

Our conclusion after studying the situation for three years is that agro-industry is the only model which works in the Dominican Republic and the only one which will make it possible to create abundant employment.

The co-owners of the agro-industries are not only rural producers; the necessary human pyramid consists of administrative employees, supervisors, technicians, experts, craftsmen, etc., performing the functions necessary for these higher organisms.

By means of these structures the country could stimulate the minds of several hundreds of thousands of unemployed intellectuals who will be leaving universities and other centres of study and give them jobs in which the fact that they are co-owners will give them great interest, enabling them to fill the leading positions in their society in the way described by López Rodó.

VII

IMPORT SUBSTITUTION AS PART OF THE STRATEGY

As was seen in Chapter V when we reviewed the groups of possible agro-industry activity, the growth of these structures will require industrial goods. The quantities which this will involve will be sufficient to constitute a large market. There is not one of the list of products at present substituted that cannot be included, and many more will have to be included because demand will be heavy.

There will also be income, however - income that will be channelled or, if one prefers, captive within the area of this new production activity. There will be far fewer middlemen; indeed, many of them will not resist the temptation offered by these new and profitable activities, and will become part of the system.

For this reason, in our view, the only way in which present-day industrialists can improve their situation is to demand agro-industrialization, as it is their only chance. With it they will also have the training centres which the present system has never provided.

We cannot look to import substitution to do anything other than provide logistic support for agro-industrialization and later on - since several decades will be required - for the industrialization of mining. It must be the supplier of inputs.

The Government has therefore been advised to improve Section II of Law 299 on Industrial Incentives and Protection by clarifying its classifications. These classifications are as follows:

- Category A: Substantive industries for national development
- Category B: Industries providing logistic support for national development
- Category C: Industries with a complementary role in national development

The other "agro-industry"

This category refers to the industrial sector in those branches of the industrial sector which, as a result of intersectoral transfers - with or without middlemen - must be regarded as a category within the substantive industries, but which enjoy different legal treatment.

The reason for this is quite clear: industries of this kind are necessary but not very advantageous.

As we were told both by CEGAN and the Inter-American Institute of Agricultural Sciences (IICA) in April in San José, Costa Rica, and again in May in Santo Domingo, the rural producers do not receive the income.

The greatest care must be taken in directing industries engaged in the processing of agricultural products.

There are more than enough examples in Latin America that illustrate the results of this situation. Industries begin by arguing the need for support and protection because they promise to solve the problems of agriculture. Even when they start out in this way, their factories soon begin calling for legislation to permit the import of agricultural raw materials, thereby turning their backs on the producer and in effect condemning him to ruin or stagnation. Nothing could have had a more deleterious effect on the growth of Latin American agricultural production than import activity under the terms of United States Law 480.

Those producers who, for example, seduced by the siren song of such factories, rushed to plant thousands of hectares of sunflower, found that soya-bean oil came on the scene even before they could bring in their harvests. Those who planted maize for sale to the distilleries saw cargoes of this same product arrive in tanker ships from the United States under the terms of that law.

The cotton producers saw cotton arriving by the bale from the same source, and this has also been true of tobacco and other products.

But even if there were no such imports, caution would still be required. Within the domestic market there are countless ways in which the primary producer can be crushed.

On this point we must make it quite clear that we do not agree with the United States view that any activity that touches on the processing of a primary product of agricultural origin until it reaches the final consumer should be labelled "agro-industry".

Although the French are quite right in asserting that "le nom ne fait pas la chose", in this case the name means a great deal as a guard against the misuse of legislation enacted to provide a major stimulus to agro-industry as a kind of loophole by industrial enterprises that process agricultural products.

Were this to happen, the result would be not an improvement but a deterioration of the situation, since it would lead to the strengthening of one of the structures responsible for the effects noted by CEGAN. The policy of "more energetic methods" and "innovations" which that Committee has described as an essential condition would then not have been followed.

This would be a great pity, for today the means of developing agro-industry do in fact exist.

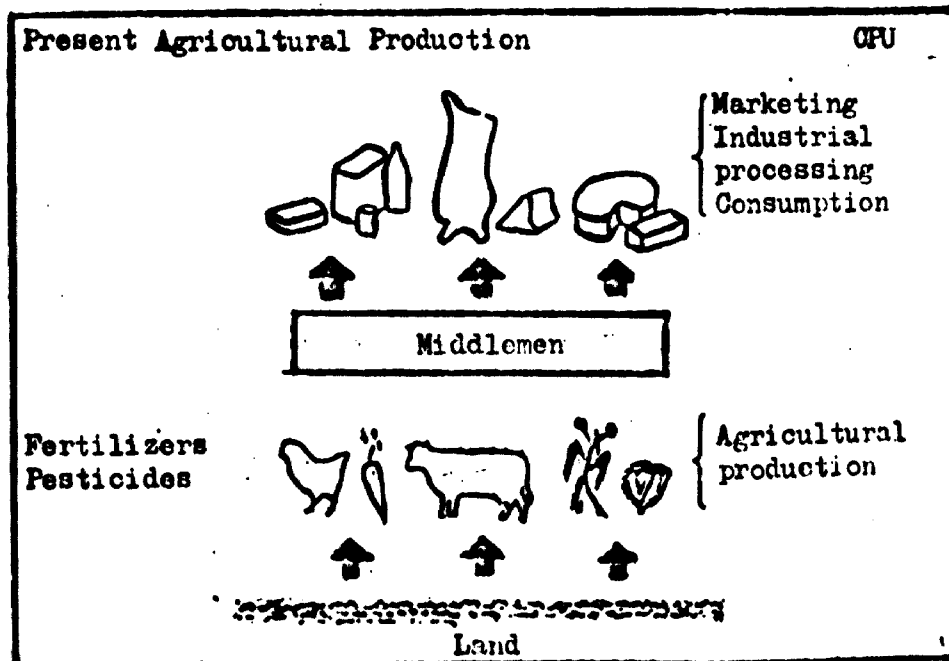


Figure 1

The present structure of production makes middlemen necessary not only for the marketing of primary products, but for the entire range of different inputs required for production. All these intermediate links involve costs in preparation, handling and transport.

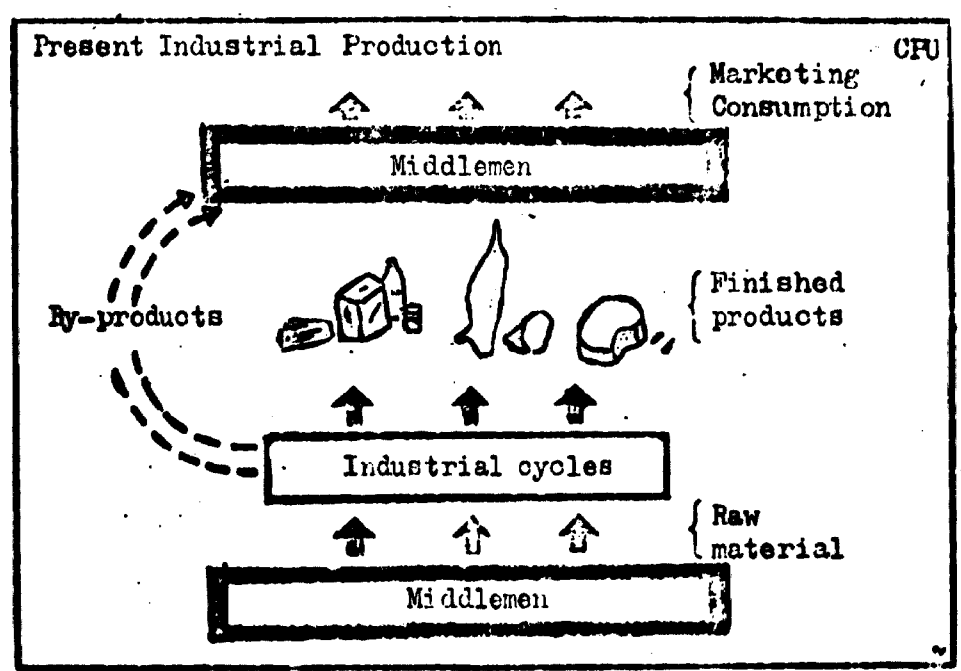


Figure 2

As in the case illustrated in Figure 1, industrial production also involves both types of operations. Once the intermediate or finished product, as the case may be, leaves the manufacturing enterprise, it enters the chain of middlemen, handling and transport until it reaches either the ultimate consumer or, in the case of semi-finished goods, a further stage in its processing.

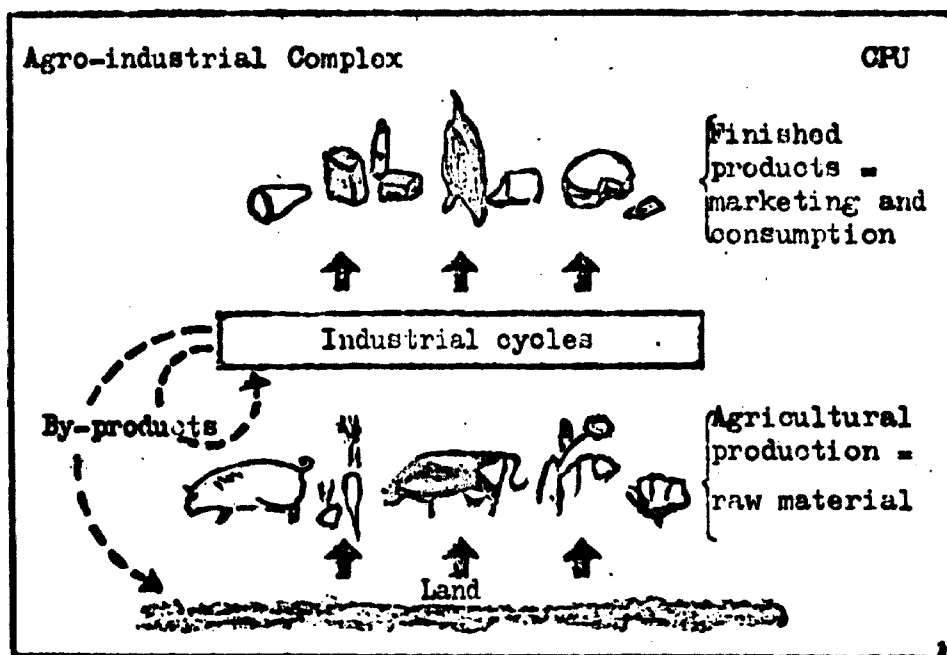


Figure 3

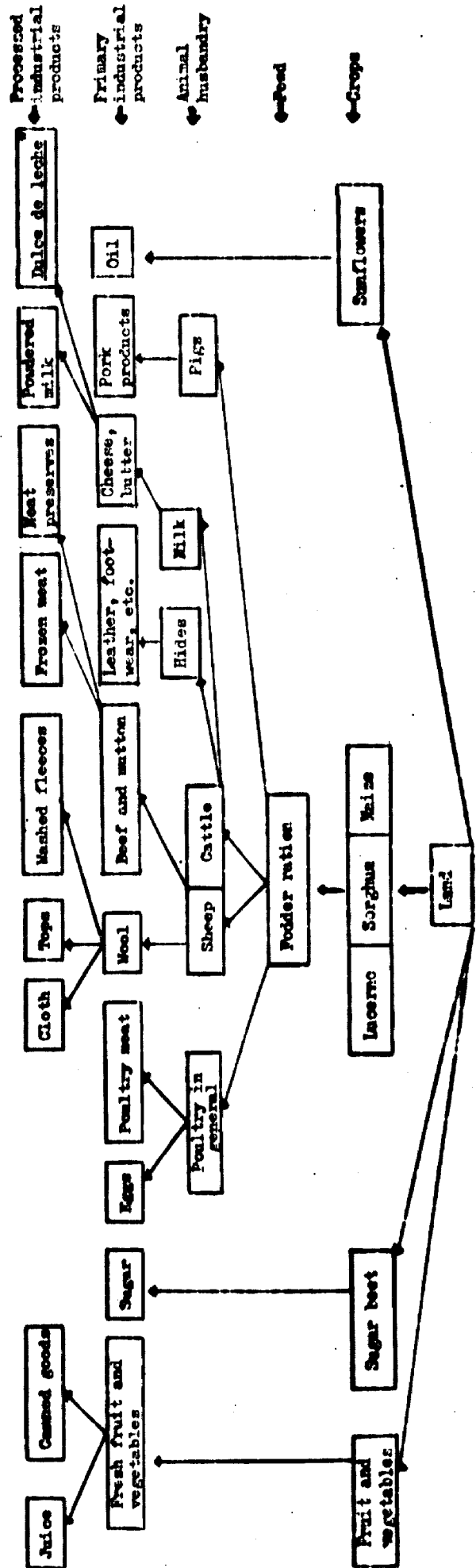
Depending on how complete it is, agro-industrial integration reduces or eliminates the need for middlemen and related costs and transport requirements (including wastage and losses), and makes possible the creation of a closed system which offers major economies. Once horizontal integration, with its corresponding vertical links to industry, has attained a certain scale, the system becomes capable of producing many of the inputs which it requires and which, in the traditional structure, it had to buy from other sectors.

A few agricultural production activities can provide the basis for a series of industrial installations which, because they are all located in a single industrial estate where common services can be shared, require smaller investment - provided, of course, that there has been proper advance planning. The cost to a country of building fifteen steam generators is lower than that of building one large generator of equivalent power. The advantages of this system might be shown more graphically in the form of a diagram of concentric circles.

THE INTERRELATION BETWEEN PRODUCTION AND INDUSTRIAL PROCESSING IN AN AGRO-INDUSTRIAL COMPLEX

Figure 4

A. BASIC PRODUCTS



* A milk candy similar to fudge.

Figure 5 shows more clearly the linkages developed by such a series of producers and demonstrates how the by-products or, in some cases, even the waste of one industry can become the raw materials of an industry downstream, and how when exploited on a complementary basis, together with other products from the same internal system, they can be reprocessed or recovered for use in soil improvement, as fertilizers or as feed for animals of different species. Very often, if such waste materials and by-products were handled and transported by a chain of middlemen, the opportunity would be lost of putting them to the same kind of economically profitable use made possible by their recycling within the closed system. Sometimes, small quantities of waste materials enable the establishment of relatively small-scale production activities with a very high market return, as in growing flowers or breeding certain animals, such as mink, which can convert ground-up waste products into skins of great commercial value.

It may occasionally happen, as in the case of a dairy industry that is not part of a complex including the production of saccharifying substances, that the efficient recovery of a particular by-product will require the purchase of other by-products originating from outside the complex; nevertheless, the arguments in favour of such purchases are usually sound enough to justify this course of action, as a new product is introduced. This has been shown in Figures 6, 7 and 8, where the important new activity is pig raising, with its extensive range of industrial products. Such situations, which are in fact very common, make possible the utilization of by-products and waste from other outside systems and their conversion into products of great value within the complex, principally if, besides the installations and fixed costs, there exists within that complex some additional asset that can be turned to account, such as whey, in the example.

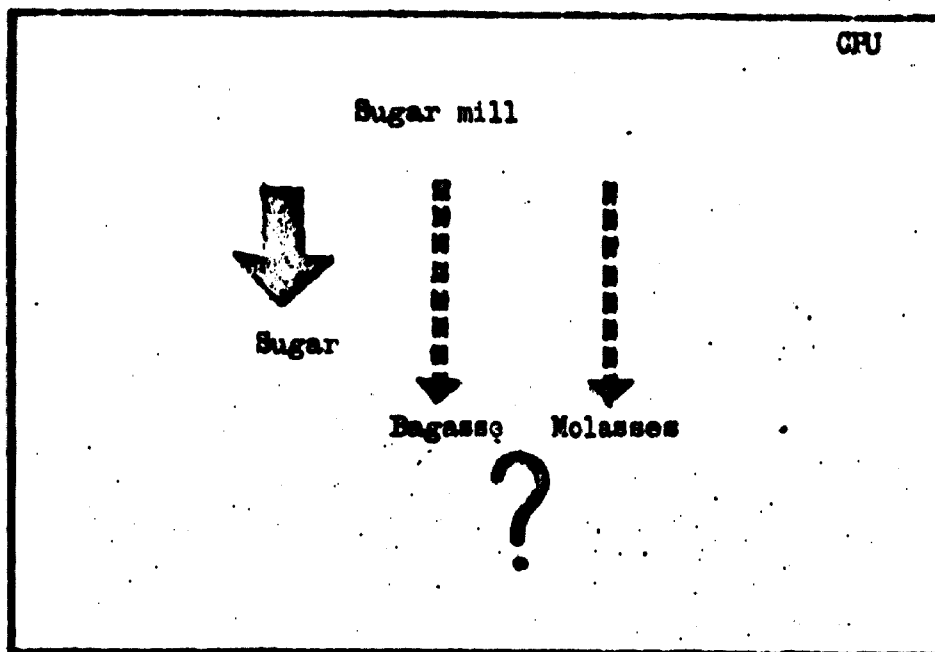
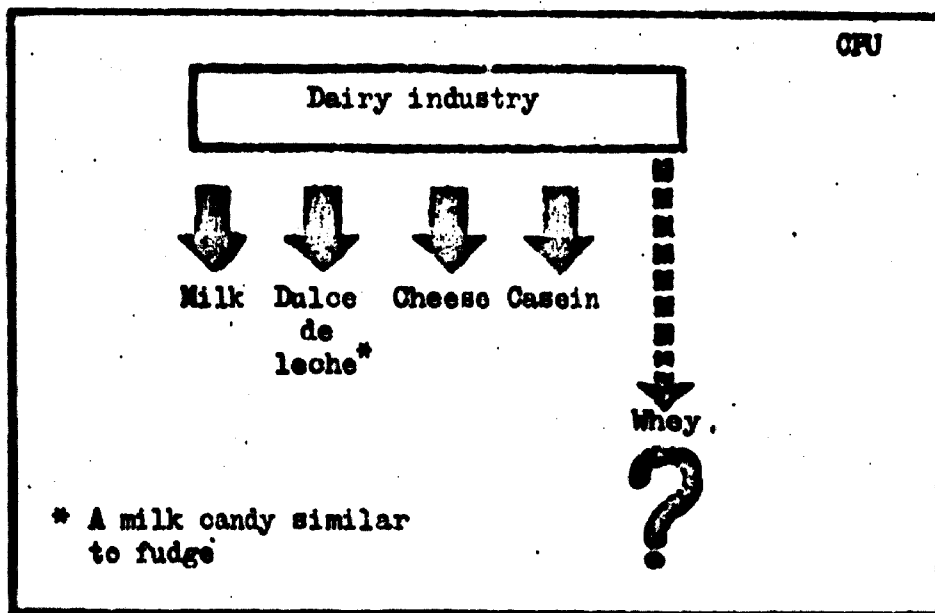


Figure 6



* A milk candy similar to fudge

Figure 7

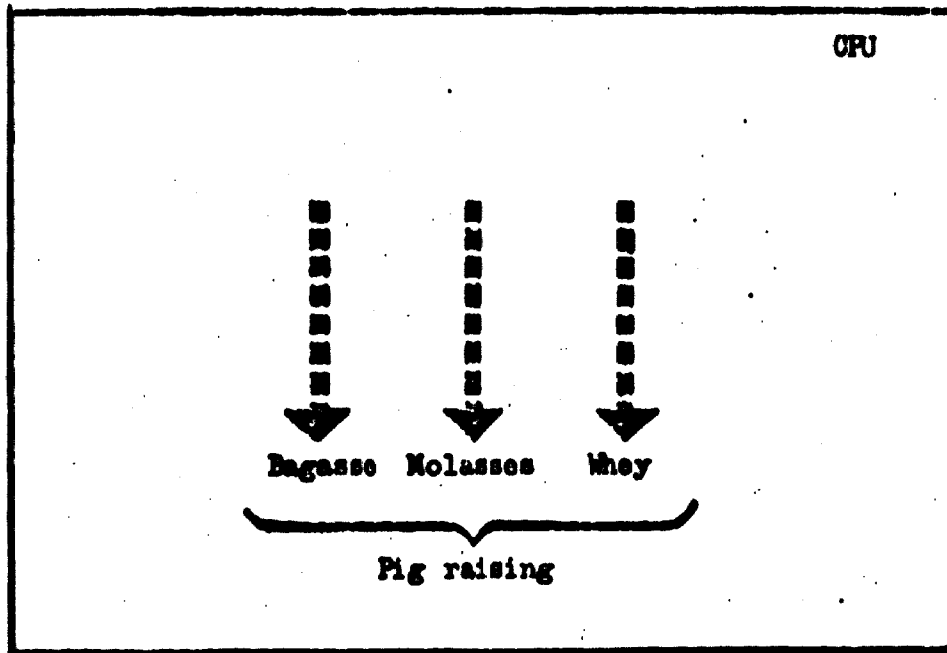
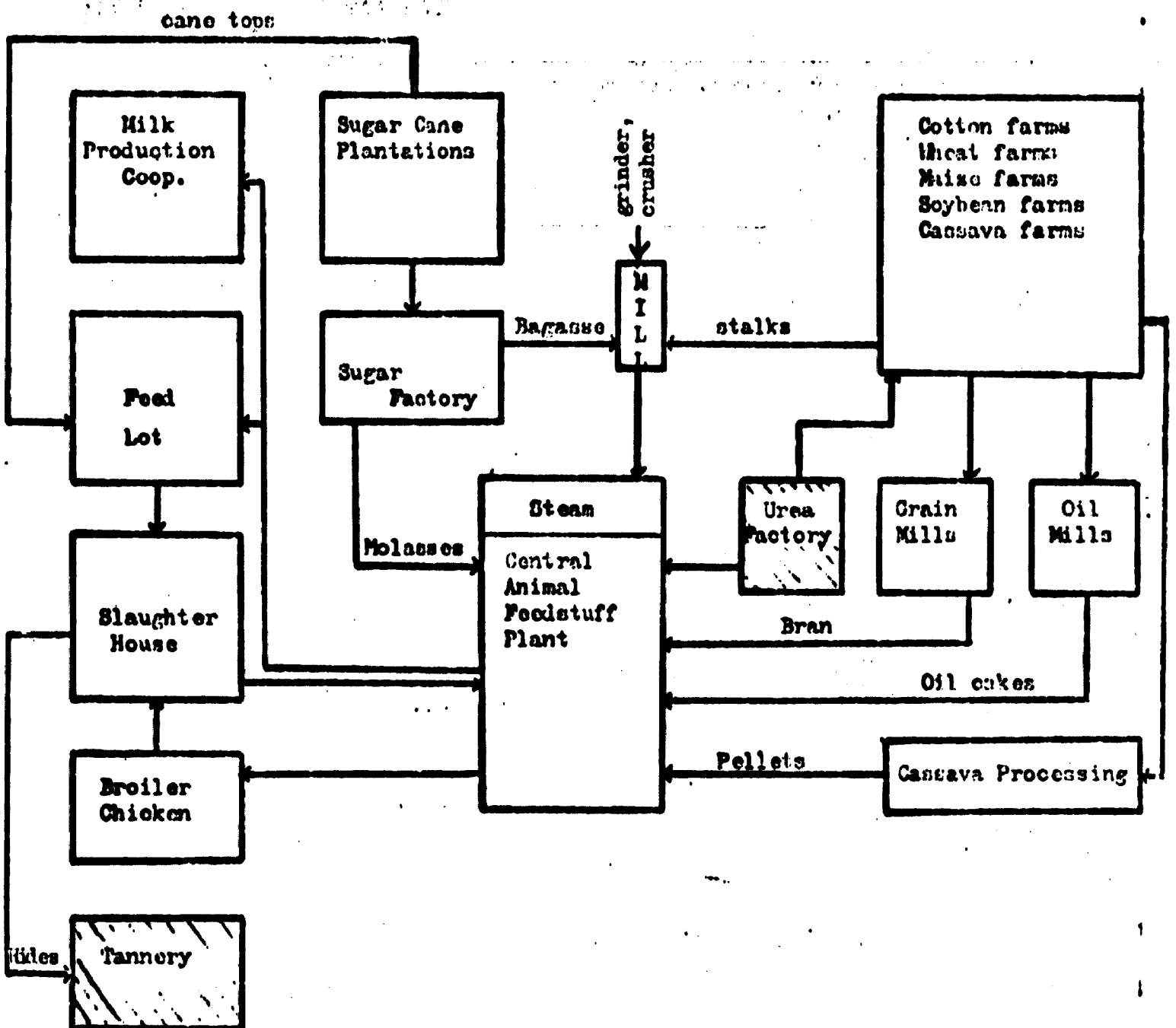


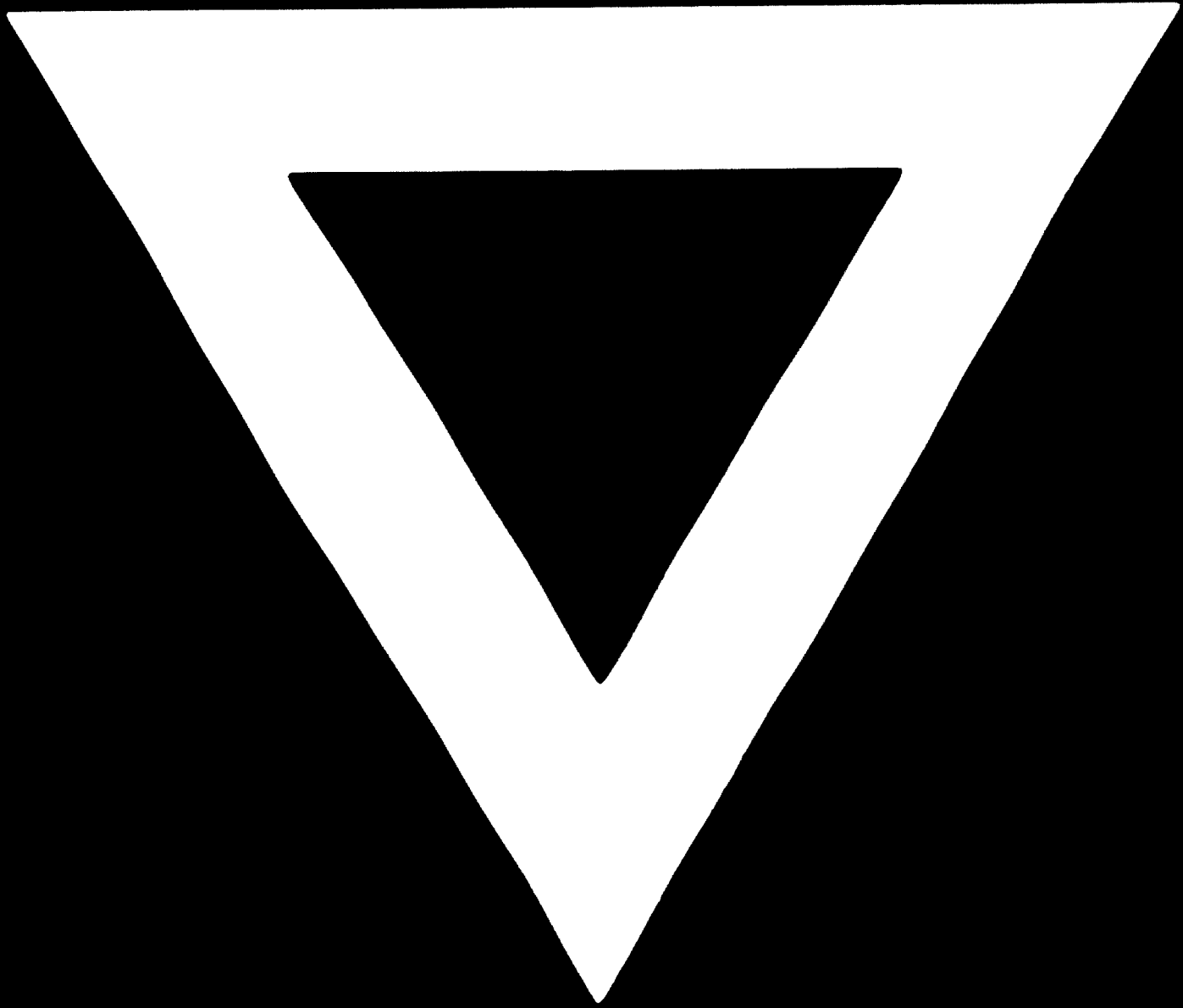
Figure 8

PROPOSED SCHEME FOR A FOOD INDUSTRIES COMPLEX IN UGANDA^{*/}



^{*/} Source: Agro-Industries Section, UNIDO

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