

CDCC/PO/WP/80/9

29th May, 1980

ECONOMIC COMMISSION FOR LATIN AMERICA
Office for the Caribbean

LATIN AMERICAN INSTITUTE FOR SOCIAL
AND ECONOMIC PLANNING



SECOND MEETING
OF
PLANNING OFFICIALS OF THE CARIBBEAN

29 May - 2 June 1980

Kingston, Jamaica

Prepared by

REPUBLIC OF CUBA
CENTRAL PLANNING BOARD

PLANNING OF
AGRICULTURAL PRODUCTION
IN THE REPUBLIC OF CUBA

Convened by the United Nations CEPAL Office for the Caribbean and the Latin American Institute for Social and Economic Planning as mandated by the Caribbean Development and Co-operation Committee.

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Some General Observations:

It is well known and has been proven over the last decade that the system of economic planning has become an efficient method for achieving development. Concrete examples are the economic success of the socialist block, where the formulation and implementation of the economic plan are of the highest significance.

But even if economic planning has its *raison d'être* mainly in socialist countries, it is not alien, at least in an absolute sense, to countries where the means of production are controlled by private property. The optimum use of resources, the orientation of development towards desired goals, in fact the desire to control the course of events, are more than just simple motives for controlling the direction of the modern society according to a plan which should integrate the desired socio-economic objectives.

The Caribbean countries have not been, nor are, for sure, indifferent to this decisive purpose. Different international organisations, both within the regional sphere of action and outside, and not a few officials and experts in this area have recognised its merit. Nevertheless, in practice, there exist some difficulties which if it is certain, do not conflict with this purpose, it is no less certain that these same difficulties conflict with its implementation. In other words according to a specialist in the First Meeting of Planning Officials held in Havana last year:

"Planning as an instrument of development has never had a real failure; what has happened is that it has never been implemented in an integrated form" (referring to the problems of planning in the Caribbean countries).

To find the main factor that limits this full implementation of such a system for the direction of the economy, it is not necessary to carry out extensive research into the phenomenon. The answer to the problem, based on its universal repetition, turns it into a common axiom: "the dividing line between the purpose for planning and its practical application lies in the lack of adequate structures which allow for an integrated system of efficient planning". Certainly socio-economic changes are the inevitable premise for the successful articulation of the plan. It is not by chance, therefore, that the following recommendations made in the First Meeting of Planning Officials would have been supported:

"To underline the need to carry out in Caribbean Countries structural changes, both social as well as economic which are necessary for complete and useful planning systems."

The importance of carrying out this recommendation reaches a higher dimension, within the regional framework, when we are dealing with planning forms within the Agricultural sector. In concrete terms, it can be said that the agriculture-based economies, in the countries of the Caribbean, form significant and, in some cases, the most important basis for the creation of the material base which is necessary for the desired socio-economic development. To achieve this harmoniously in the near future, that is to say through the plan, requires unequivocally the carrying out of genuine changes in the structure of Agriculture which has been shaped by historical factors well known by our people.

Without trying, for obvious reasons, to implant the Cuban experience in other countries, but rather to use it as a frame of reference because of the

results which have been registered, it is worth noting that in the Cuban case, the possibilities which existed at the time of the Revolution in January 1959 to structure the economy according to a plan, depended basically on the application of urgent measures in order to achieve real transformation of the shapeless economic structures which up to that time were fed by a counterfeit society. Given the structural characteristics of our economy, among other things - with prescription applied, the promulgation of Law Reform - agriculture was the definite remedy to cure the endemic evils of the large estates, land owners and exploitation from which the economy suffered. Revolution, Agricultural Reform and Planning were the key tools in the solution of the Cuban problem.

For this reason, in Cuba, a Socialist country whose economy is based on social ownership of the principal means of production, planning is the principal instrument in determining the direction of the national economy. The rules and principles which regulate the formulation of the plan as well as the methods for its scientific basis in accordance with the law and regulations, objectives of the economy, are stated in the methodology which is in the form of a sub-system and is integrated in the planning system in force in our country. Economic planning, as it is now practiced in Cuba, is directed at the fundamental task of creating the technical material base of socialism and the achievement of a constant improvement in the standard of living, through development of the productive forces and upgrading of production techniques in order to achieve maximum utilisation of labour, material and financial resources.

GENERAL CONSIDERATION ON THE AGRICULTURAL PRODUCTION PLAN

Because of the structural characteristics of the Cuban economy, the activities of the agricultural sector constitute one of the most important elements in the formulation of the national economic plan, not only because of their impact on the levels of production but also because of the implications of these activities for consumption, the generation of foreign exchange, import substitution and the supply of primary material for industry.

Peculiarities

Agricultural production has certain peculiar features which distinguish it from other productive activities and which determine special features of the planning process in this area.

The first peculiarity has to do with the existence and development of two forms of socialist property in agriculture - State and Co-operative - as well as the recognition of the individual rights of small farmers to the ownership of their land and other means and instruments of production. The ownership patterns which have given rise to certain differences in the direction of agricultural production and income distribution, have placed a different focus on the tasks, methods and indicators Planning of State, Co-operative and private sectors in agricultural production.

In addition, the physical distribution of the private farmers throughout the territory, the organisations serving production (Agricultural Production Co-operatives, Credits and Services Co-operatives and Small Farmers Associations) ~~the~~ heterogenous nature of production, the yield of lands and the productivity of labour, and, above all the important role of this social sector in global

production unquestionably require a different approach to planning.

A second peculiar feature is the character of production and its relation to natural factors. The essentially biological and seasonal character of production dictate a need for the hastening of certain natural processes and the creation of reserves which can compensate for the effects of natural phenomena. This peculiarity of agricultural production demands the highest level of stability in the production process and this requires the utilisation of material resources such as irrigation, application of chemicals and mechanisation.

The third feature is the universality of the principal resource, land, whose physical properties and location permit the production of a wide range of crops, but at the same time makes it difficult to carry out a strict specialisation of production because of the attention that must be paid to crop rotation. Besides, the seasonal character of production having a proper balance between specialisation and diversification in order to make possible rational utilisation of time, labour force and other basic resources.

A fourth peculiarity lies in the fact that a part of production is retained by this very sector for use as a production resource, a characteristic which affects the calculation of production through the method of complete circulation. For this reason it is necessary to carry out careful balance sheet estimates, where consideration is given, in addition to the objectives of supply to other sectors and for consumption, to the volume of production derived from the requirements of the same agricultural sector.

Basic Objectives

In view of the inter-relation between agricultural production and

national economic planning and also of the peculiarities of the agricultural sector referred to above, the formulation of the plan should have the following basic objectives:

- To determine the levels of agricultural production starting from the projections of consumption and exportation of food products, as well as of industrial production which require primary materials of agricultural origin.
- To progressively integrate agricultural production into the different processing industries, making sure of a growing supply that is commensurate with the development of these industries and guaranteeing the qualitative requirements of the same.
- To increase the supply of those Products which generate foreign exchange or are import-substituting, according to results of evaluations on natural advantages, cost of production, indices of efficiency, commercial aspects, foreign markets etc.
- To achieve the strengthening of the technical material base of companies and co-operatives involved in agricultural production through progressive introduction of the technological advances which ensure a better utilisation of the technical, material and natural resources available.
- To contribute to the structuring of the plan in the most consistent manner, from the base unit (the enterprise) to the highest level, establishing the inter-relation between the links which are involved in the formulation of the plan, in accordance with the level of participation of each one of them in the different stages

of its formulation.

- Supplying those elements which permit conformity between the production strategy of the sector and the general objectives of socio-economic development of the country, incorporating in the national economic plan the indicators or agricultural activities which have been determined.

Relations

- With the plan for increase in the standard of living through the quantifying of volume and structure of production, particularly of food products destined for consumption.
- With the foreign trade plan through which the supply of goods and services which contribute to agricultural production is established.
- With the global and territorial balances of human, material and financial resources, where the volume of agricultural production and of resources involved are decisive elements in the formulation of the plan.

II. GENERAL INDICATORS OF THE PLAN

The general indicators are those which are common to the principal branches of the agricultural sector, the determination of which is necessary for the formulation of the central part of the plan.

Gross Production

This is measured by the method of completed circulation which includes the value of production destined for sale or for payment in kind, productive supplies, non-productive auto-consumption and agricultural stocks.

Finished Production (in physical terms)

This comprises mercantile production plus productive supplies and non-productive auto-consumption.

Mercantile Production

This represents the expression in value of finished agricultural and livestock production and of agricultural services destined for sale including deliveries as payment in kind to the Co-operative members. To calculate the value of this, established selling prices are used.

Non-Mercantile Production

It is that part of finished products which is consumed within the same enterprise or in non-productive auto-consumption. It is valued on the basis of cost of production.

Agricultural Accumulation

This comprises the value on the basis of planned costs, of the planting of permanent crops and of attention given to them, of the variation between the beginning and the end of the period required for the preparation of the land

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for planting and, of the expenses to be paid by the base unit (enterprise) for improvement and preservation of the soil.

Accumulation in livestock production is determined by the difference in the total weight of the herd between the beginning and end of the period, and is also valued according to planned costs.

Sales to State

This constitutes the basic of agricultural production indicator through which the commitment of the State enterprise, co-operative and private farmer to the national plan is set. This is obtained from the volume of products which the productive enterprises sell to the collecting enterprises at the rates fixed in the plan.

Balance of available land resource

Given the fact that land constitutes the basic resource for agricultural production it is essential in the formulation of the plan, to start with an analysis of the situation with respect to available land and of the different alternative uses for it. This is obtained by the means of a balance. In this balance, the physical availability of arable and potentially arable land and the various possibilities for planting and crop rotation bearing in mind the economic aspects and the social requirements are evaluated.

The balances of available land resource are obtained by finding out the amount of land being used by production units, the amount of land under cultivation, as well as the amount not cultivated and the amount being used as natural pasture which is idle land and can be ploughed. With respect to destination account has to be taken of the land which is allocated for permanent production and of plans for planting of the crops selected, bearing in mind

the different alternatives for rotation.

Balance of the basic production resources and of labour resource

These balances are obtained for seeds, agricultural machinery, fertilizers, pesticides, food for cattle, the installation of machinery for rearing animals, for the collection of products, for watering and for indicating the balance of labour resource since a large portion of the labour force is engaged in agricultural activities.

Summary

In formulating the agricultural production plan, it is necessary to start with the preparation of a balance of the global resources by products, where the consumption requirements are compatible with the production possibilities.

In preparing the various levels of activity in agricultural production it is necessary to start with the selection of the land to be planted and of the fertility of the soil types as well as with the yields which can be obtained, the technology to be employed, the availability of resources etc.

In livestock planning the plan is based on a calculation of the number of heads of cattle, which has its main counterpart in the animal food balances which support it.

Planning of technical material base of agricultural production is reflected in the planning of chemical application, mechanisation and irrigation of the lands.

III INDICATORS FOR PLANNING SUGAR CANE AGRICULTURE

This area is very important in the national economic plan because of its high foreign exchange generation capacity. The following are the indicators for planning:

Gross Production

Mercantile Production

Sales to Industry

Sales of Cane produced by irrigation to industry

Total area planted with cane to be harvested

Existing area under cultivation

Irrigated area under sugar cane cultivation

Total Agricultural output

Yield from irrigated area

Demolition of sugar cane plantations

Surface to be planted

Losses in planting

Net Income per unit of the area occupied by the enterprise

Net income per unit of the area under cultivation.

INDICATORS FOR THE PLANNING OF NON SUGAR CANE AGRICULTURE

This includes agricultural production of crops which because of their role in domestic food consumption, the supply of primary goods to industry, import substitution and the generation of foreign exchange are very important area of agricultural planning. The following are the indicators:

Gross Production

Mercantile Production

Finished Agricultural Production

Sales to the State

Area Cultivated with selected crops

Agricultural Yield

Surface to be planted

Production of seedlings and of seeds

Net Income per unit of the total area of the enterprise

Net Income per unit of the cultivated area.

INDICATORS FOR LIVESTOCK PLANNING

This comprises reproduction, development feed and the supply of livestock products through exploitation of different type of herd. In view of the economic importance of the different types of production which make up livestock it is broken down into six sub-branches: cattle, pigs, poultry, sheep/goat, horse and bee. The following are the indicators for each sub-branch:

a) Cattle

Gross Production

Mercantile Production

Total finished Production of Meat and Milk

Sales of Meat and Milk to State

Total number of animals to be slaughtered

Average Weight

Average number of milch cows

Daily yield of milch cows

Daily yield of cows producing milk a second time

Purchase of animals for Private Sector

Births

Pregnancies

Index of the efficiency of artificial insemination

Sale of animals for fattening

Final stock of herd

Variations in the total stock of cows and heifers

Final stock of preserved foods

Net income per unit of the area allocated to cattle farming

Consumption of concentrates

b) Pig

Gross Production

Mercantile Production

Finished on-hoof production

Total number of animals to be slaughtered

Final stock of herd

Animals for breeding

Annual production of pork

Consumption of concentrates

c) Poultry

Gross Production

Mercantile Production

Finished Production of eggs and meat

Sales of eggs and meat to state

Sales of eggs for hatching

Sales of animals for replacement

Index for the laying of hens

Index of conversion of feed to eggs

Average weight of the fattened birds

Index of conversion of feed to meat

Consumption of Concentrates

d) Sheep/Goat

Gross Production

Mercantile Production

Finished Production of meat and milk

Sales of meat and milk to state

e) Horse

Gross Production

Mercantile Production

f) Bee

Gross Production

Mercantile Production

Finished Production of honey wax and other products

Sales of honey, wax and other products to state.

VI. PLANNING OF TECHNICAL MATERIAL RESOURCES

a) Agricultural Services

These are services which support agricultural production through the provision of services which cannot be provided partially or totally by agricultural production enterprises.

The principal services are: services of agricultural machinery, artificial insemination, veterinary attention, phyto-sanitary service, agricultural aviation and chemical service.

The principal indicator mercantile production which is in this case similar to gross production and is valued at current prices.

b) Mechanisation

Through the level of mechanisation of the different jobs, one of the most important indices of the technical progress in agriculture can be assessed.

The following are the indicators which are used in the plan:

Area to be cleared

Area to be prepared for planting

Average daily working hours

Quality index on the preparation of land

Index of the availability of tractors

Amount of mechanisation required by each crop

Index of the availability of equipment for the cultivated surface area.

Implement/Tractor ratio.

c) Application of Chemicals

Through the availability of fertilisers and pesticides fixed by the material balances, it is necessary to prepare indicators which permit planning of the destination of these products and evaluation of the levels of utilisation of these.

The following are the indicators used:

Consumption of fertilisers by crop

Area to be fertilised

Index of fertility of each crop

Value of production per peso invested in fertiliser

Consumption of herbicides by crop

Area to be treated with herbicide

Index of the application of herbicides by crop

Consumption of pesticides by crop

Surface to be treated with pesticide

Value of pesticides

Surface to be treated with manure

d) Irrigation

Given the geographic and hydrological conditions, water is a scarce natural resource. Taking into account this reality, as well as the decisive effect of this on agricultural yield the planning of artificial watering is a very important factor in agricultural planning. Apart from the indicators to measure the efficiency of the use of irrigation and its effects, it is necessary to combine during formulation of the plan, the other factors which satisfy the demand for this resource such as, drainage, pumping, stations, watering systems etc.

The following are the principal indicators:

Mercantile Production

Available irrigated area

Form of Irrigation

Total expenditure in water

Value of investment per unit of surface irrigated

e) Collection of Agricultural products

This constitutes a large scale operation in the process of production and it is through this activity that the production circle is completed.

The indicators which are utilised are the following:

Purchase of Agricultural products

Sale of Agricultural products by destination

Index of packing

Losses in commercialisation.

VII PLANNING OF PRIVATE AND CO-OPERATIVE PRODUCTION

a) Meaning of private and co-operative production

The active participation of private farming in certain areas of production which are fundamental to the agricultural economy (tobacco, coffee, vegetables and peas) is an important factor which it is practically impossible to under-estimate in the formulation of the agricultural production plan. It is sufficient only to mention for the purpose of illustration, that land tenure of private farmers represents only 27% of the total agricultural lands of the country. The benefits of the Agrarian Reform Law, promulgated less than two decades ago continue to be in force.

In keeping with present stage of development of agricultural production in our country as well as the forecast for the next few years the principal objective of planning of the production of the Private Sector is directed at transformation of the mini fundia method of production to superior forms of organization, which are, in our case, the co-operatives for agricultural production. This purpose, which is based on the principle of voluntary work by the peasant, an inviolable law of the Cuban State stems from the need to achieve maximum utilization of the land resource of the country through the application of adequate technology, which is not very feasible within the mini fundia organization. The peasants could not have been made to wait for the achievement of this noble objective. So, the agricultural production co-operatives established by the private farmers last year have more than doubled now. This represents collective use of 125,000 hectares of land containing approximately 830 co-operatives with about 19,000 members.

b) Definition of Co-operative

The Agricultural production Co-operative is an agricultural organization in which groups of peasants voluntarily come together to utilize, for a common good their lands, means of production and own labour force with the principal aim of working collectively to achieve a high level of efficiency in production and consequently an increase in their income and in the standard of living of themselves and their families as well as their cultural well-being.

The State provides the co-operatives with material and technical assistance so that they will gradually be able to utilize the technology which is used in modern agricultural production. In this way a mutually advantageous relationship is established.

From the Institutional point of view, the agricultural production co-operatives are ruled by the principle of co-operative democracy which defines the rules governing these co-operatives. Thus the co-operative is directed by the General Assembly of Associates, the Board of Directors and the President. The General Assembly is a collective governing body which as a result of its democratic character, discusses and approves all socio-economic activities inherent in the co-operative and chooses its leaders on the Board of Directors and its president. Their decisions have to be carried out by the co-operative.

c) Forms of Planning

The planning of the economic activities of the private farmers receives a different treatment from that which governs state enterprises, because the form of ownership requires this. The basic objective is, on the one hand, to determine with precision the commitment of these

farmers to the state with respect to social participation which is expressed in sales of their produce to the state and on the other to determine the supplies which these farmers require from the state to fulfil their commitment.

The fundamental aspects which ought to be the objectives in planning are as follows: production, material securities, human resources and investments. These aspects are planned by means of directive indicators and by calculation indicators. The directive indicators express in quantities the commitment of the private farmer to the state. The calculation indicators complement the directive by setting out the commitment which is established by the latter.

The directive indicators, after being approved by the Government Law to be carried out strictly, by the co-operatives and the farmers according to their respective form of property. The following are the indicators:

Sales to State

Planning of selected crops

Area already under sugar cane cultivation

Insurance for supplies of equipment

Implements and of principal agricultural services.