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TO SECOND MEETING OF PLANNING OFFICIALS IN THE CARIBBEAN
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PLANNING OF TRANSPORT

PLANNING IN THE SOCIAL SECTOR

D R A F T

THE CARIBBEAN SHIPPING SECTOR*: A PLANNING
AND POLICY PERSPECTIVE

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Traditional trade models ascribed a neutral role to the transport factor in the development of international trade. Empirical evidence has invalidated this hypothesis. Studies on non-tariff barriers to the exports of the developing world have identified shipping cost as a significant non neutral factor in the formation of international prices. Consequently, there has been some recent attempts to extend the basic trade model to explicitly include a transportation sector.^{1/} A recent study on the movement of shipping cost in the developing world over the period 1965-74 concluded rather disturbingly that "the increase in the nominal shipping cost has cancelled out some of the benefits accruing from multi-lateral negotiations on international trade".^{2/} This study goes on to argue that while declining transport costs induced the development of periphery economies in the 19th century, this process was not repeated in the events over the period 1938-74. Developing countries are expected to face rising shipping costs in the future.

The incidence of rising shipping costs may be even greater in the Caribbean region. The geo-economic location of the region, and the structural openness and inherent dependence of the Caribbean economy do not insulate the region from rising shipping costs. In addition, a large part of the development effort in the area calls for greater penetration

^{1/} See for example Cassing, (2) and Falvey, (3) and (4).

^{2/} Glechowski and Yeats, (1) p. 263.

*In this paper the Caribbean refers to English-speaking countries of the region.

of export markets and dependence on import markets for traditional imports and more raw material sources, which will make further demands on the existing shipping services. Technological changes in the shipping world may produce a level of cost that cannot be efficiently absorbed through the scale economies prevailing in the region.

In these circumstances the market forces cannot be relied upon to produce a socially optimum allocation and distribution of resources for the shipping sector. These factors underline the need for a clear focus on shipping policy. In these circumstances the market prices cannot be relied upon to produce a socially optimum allocation and distribution of resources for the shipping sector. These factors underline the need for a clear focus on shipping policy.

Features of the Caribbean Shipping Economy

Traffic: The international ocean freight traffic in the Caribbean is concentrated on specific trade routes which have remained largely unaltered even during the post independence period.^{3/} Export and import cargoes are not in balance. In addition, the characteristics of export freight differ from those of imports. This in turn makes for differences in the respective transport markets and freight structures. A large part of the Caribbean exports are of a bulk commodity nature and utilizes tramp-like vessels. On the other hand, imports are mainly manufactured goods transported by regular liners. Freight rates for export commodities are subject to

^{3/} It has been estimated that over 75% of Caricom imports of general cargo and 40% of Exports are with the USA; Canada and Western Europe. 40% of the several cargo exports are intra-regional.

fluctuations which are caused by changes in the demand for the products themselves and by the low elasticity of the supply of ships. Import freights are generally established through the liner conference system.

Firms: In the operating environment, firms face "a structure and level of cost that are determined by forces largely outside the region's control. The cost of acquisition of vessels, the cost of chartering vessels, insurance and fuel costs, the cost of port equipment and in general the cost of technological changes are all determined thru the interplay of international market forces".^{4/} This feature reinforces the cost dependency of the region. On the revenue side, shipping firms find their rate earning capacity to be constrained by local economic factors like the level of income, cost of living, and what the market will bear. International carriers do not however face the full effect of this constraint, as the foreign part of their tariff are exogeneously determined, while the local part is largely influenced by non competing considerations.

Links: In the Caribbean environment, extra regional links are more developed than intra-regional links. This is due partly to the history of the region but has been reinforced by the existence of unchanging commercial forces. An internal transport network would only be commercially viable on a self sustaining

^{4/} Dookeran (7).

basis if it were to extend to the external network or employ cargo reservation techniques within the region's economy. Since neither of these two measures were employed (there is strong international opposition to both approaches), intra-regional links developed in a slow and almost haphazard manner. Also, the intra-regional carriers (both sea and air) were charged primarily with a service function and were called upon to discharge a social responsibility to the region.

Service: Shipping services for general cargo could be categorized into three groupings: external lines, regional lines and small vessel shipping. All of the external trade are carried by external lines. Some of the external lines are Columbus Line, Geest Line, Sea Land, Sea Train, Saguenay and Carol (Caribbean Overseas Line). Recently, nationally owned lines (Jamaica Merchant Marine, Guybulk Shipping Corporation) have entered the trade and are currently moving externally bound cargo. The major regional line is the West Indies Shipping Corporation (WISCO) which has traditionally operated a general cargo service within the region. Recently, WISCO has extended its service to Miami. NAMUCAR is another shipping line owned by Governments of the Caribbean Basin and serves the Caribbean and Central America. A large part of the small vessel trade takes place in the southern half of the Eastern Caribbean. The small vessel sector is very important to the region's economy. Apart from its contribution to saving foreign exchange, generating income, moving goods, and employing sea-faring personnel, this sector provides the main forum for developing entrepreneurial qualities in this field for the people of the Caribbean.^{5/}

^{5/} For further information see AMB (15).

Institutions: The major public Institution is the Standing Committee of Ministers responsible for Transportation which was established in 1975 and succeeded the Regional Shipping Council which came into being in 1962 at the dissolution of the West Indies Federation. The Caribbean Shipping Association is a grouping of shipowners interest and has been a major forum for public discussion of shipping matters. Attempts to form Shippers Councils have not been very successful. In this regard, Export Corporations expect to play an important role in protecting the shipper's interest.

Conferences: There are many liner conferences operating in the region. The most important is the Association of West Indian Trans-Atlantic Steamship Lines (WITASS). WITASS has been in operation since 1896 and represents 33 shipping lines, 5 associated lines and 21 different nationalities. Its services cover more than 100 ports in Europe and about 120 in the Caribbean and Latin American countries. Other conferences include US Atlantic and Gulf Jamaica conference, Japan/Latin American Conference, Brazil/Caribbean/Brazil Freight Conference and US Atlantic/Leeward and Windward Islands Conference.

Legislation: There is no uniform legislation in the Caribbean governing maritime affairs although this has been on the agenda of the Standing Committee for a number of years. The most significant legislation in the area is the recently enacted Jamaica Cargo Preference Act

which provides cargo preference in favour of the Jamaica Merchant Marine. The existing legal framework is an open one rendering the Caribbean environment totally dependent on external legal constraints and conditions.

**National
Shipping
Lines:**

State owned shipping companies in the region include Guybulk Shipping Limited, Transport and Harbour Shipping (Guyana), Jamaica Merchant Marine-Atlantic Line Ltd., Puerto Rico Maritime Shipping Authority (PRMSA), West Indies Shipping Corporation (WISCO), NAMUCAR (Naviera Multinacional del Caribe) and the Shipping Corporation of Trinidad and Tobago (SCOTT). SCOTT however is not in operation.

Historically, the shipowners have played an important role in forming the shipping environment in the Caribbean region. In many cases, agents who represent the shipowner's interest (i.e. for external lines) were also large exporters and importers. As such, external lines were partially vertically integrated into large local plantation conglomerates. This feature is peculiar to the region and may partly explain the difficulty of forming effective Shipper's Councils in the region. Within recent times, the public sector has shown a major interest in influencing the Caribbean Maritime environment. The main vehicle used by the public sector for increasing its influence in the shipping world of the Caribbean has been thru the establishment of national shipping lines in joint venture arrangements with foreign firms. In addition, there have been attempts to effect consultation procedures with the Conference system. Attempts to establish consultative machinery have met with little success^{6/}. Cargo reservation practices have not been employed

^{6/} In 1969 the Eastern Caribbean Consultative Committee was established. WITASS refused to cooperate and the Committee did not receive sufficient inputs from interested private and public sector organizations. Although there have been many attempts to revive the idea of "consultation" since that time, there have been no meaningful results.

in any significant way.

A Framework for Analysis

Planning and policy analysis requires an identification of the goals, the selection of means to achieve these goals and the development of an organic process that generates appropriate directional impulses. Too often the planning exercise identifies the goals and the means that may be used to achieve these goals and leaves the mechanics of change, the process by which change will take place, largely untouched. For instance, to merely state that the establishment of a regional shipping network is desirable and to provide a planned programme for resource use will not be enough if the commercial forces operating in the environment lead towards opposite goals. A key to planning in the shipping sector, as indeed to other sectors of the economy is to concentrate on generating appropriate directional forces that would be consistent with the programme of action.

Like the rest of the economy, the shipping sector of the Caribbean is characterized by an open dependency relationship. The nature and degree of this dependency constrains the policy choices that are open to positively influence the economic environment. The limit of policy prescriptions will depend on the extent to which exogeneous factors could be endogenized. In situations where this is not possible, policy and planning measures may attempt to contain the adverse impacts of structurally exogeneous factors.

The distribution system of which the shipping sector is a part lubricates the production structure and the consumption pattern in the economy. There is an interactive process among the distribution system, the production structure and consumption pattern. The distribution system mirrors the production structure and consumption patterns existing in the economy and at the same time provides the basis upon which the

production structure is built and the consumption pattern is formed. This is seminal to the understanding of the economics of change. The distribution system, the production structure and the consumption pattern are cumulatively self-reinforcing.

This framework leads to two approaches to policy formulation: the aggregate approach and the incremental approach. The aggregate approach focuses on the interactive processes, the cause effect relationship and may result in a multi-faceted policy approach. The incremental approach is directed to responses to contest specific situations. Ideally, the incremental measures should be integrated into the aggregate programme of action. In general, there has been a variance between micro economic efficiency and social efficiency in the methodology for transportation planning in the Caribbean region.^{7/}

Planning and Policy Issues in the Caribbean Shipping Sector

In the context of the framework for analysis as outlined above public policy initiatives in the shipping field during the last decade have been of an incremental nature. The following major policy interventions were employed during the period in the region:

- i) A planned programme of investment was agreed to so as to expand the intra-regional shipping service. (WISCO).
- ii) National shipping lines were established. (Jamaica, Guyana, Trinidad). In addition, Jamaica and Trinidad became full members of the Multinational Shipping Corporation of the Caribbean (NAMUCAR) which was formally established in May 1975 by Costa Rica, Cuba, Jamaica, Nicaragua, Mexico and Venezuela.
- iii) There were attempts to set up Consultative Machinery between Regional Governments and the Conference System (Caricom).

^{7/} For a full discussion of this point see Dookeran (5).

- iv) Caribbean Governments established the Standing Committee of Ministers responsible for Transportation (Caricom).
- v) There were attempts to set up Shippers Councils so as to increase the bargaining position of Shippers (Jamaica).
- vi) Legislation was enacted to encourage cargo reservation practices (Jamaica).
- vii) There were discussions on a proposal for the establishment of a Caribbean Shipping Corporation (Trinidad).
- viii) Numerous technical reports on the provision of training facilities for all levels of shipping expertise were reviewed.

These policy interventions on the part of Caribbean Governments fall into the categorization of "incremental" as they were measured responses to contest specific situations. The geopolitical situation of the Caribbean did not encourage a common extra regional policy towards international shipping. In fact, it is somewhat paradoxical that the establishment of a Standing Committee of Caricom Transport Ministers came at the same time when a new wave of subnationalism rolled on the Caribbean scene. The situation manifested itself in independent action by each Government on the question of extra regional shipping and in some instances also with regard to intra-regional shipping.

In general, the focus of public policy in the shipping sector has been in terms of accommodation to developments in the world shipping economy. Frequent increases in freight rates led to the establishment of a Consultative Machinery and to suggestions and attempts to form Shippers' Councils. The expansion of the intra-regional shipping service was meant to provide feeder capacity that will be required to serve the extra regional shipping network, oblivious that such a feeder system would structurally be not financially viable in the current environment. The establishment of

national shipping lines were partly in parallel to such developments among large developing countries (India, Nigeria, Brazil, Mexico) and partly a result of the changing fortunes of international carriers. These public interventions in the shipping sector were of an incremental nature and provided a "visibility content" to Caribbean shipping measures without affecting the direction of commercial forces existing in the region.

The Need for Policy Reappraisal

The Caribbean region will face an increasing demand for shipping services and if the economies were to expand this demand would increase even further. Secondly, the rise in the cost of shipping will adversely affect the terms of trade which are already deteriorating in response to falling export prices and rising import prices. World protectionist policies^{8/} may reinforce these trends. Thirdly the international nature of the shipping industry and the openness of the Caribbean economy almost make transport technology an exogenous factor in the planning process. In a dynamic sense, high technology levels may consume larger quantities of resources and in the absence of scale operations yield a proportionally lower output. This implies that there must either be a lower level of technology or an increase in the scale of operations, otherwise the balance between resources used and macro benefits may not be achieved.

In light of these considerations, there is need to develop a methodology for a policy reappraisal and the evolvement of a new planning perspective in the maritime economy. In this methodology, a clear distinction between the short and long term must be made. As was pointed out by Sturme^{9/}y "in the short

^{8/} Protectionism embodies several facets including subsidies (constitution, operation, financing), bilateralism, flag discrimination (cargo reservation), coastal trade reservation, UNCTAD code (40/20/20 principle) and national monopolies.

^{9/} Sturme^y (8) p. 202.

run the responsiveness of total international trade to changes in transport costs is quite low because it is generally only goods with inelastic demands for which carriage constitutes a large part of total cost. In the long term falling costs of carriage are a significant factor in increasing trade." In addition, changes in the structure of shipping (vessel, type, routes, commodity carried etc.) takes time. During this period, immediate measures are necessary to protect and improve the terms of trade.

A second aspect of the methodology will be to examine shipping priorities in terms of other factors that may affect the terms of trade. There may be a high trade off between heavy capital investment in shipping and the removal of tariff and other non-tariff barriers (or higher export prices/lower import prices). The possibilities for such a trade-off must be explicitly measured, and a program of complementary action developed. Included in the action plan must be measures on tariff and non-tariff barriers to trade, fiscal measures and retaliatory responses by affected countries and parties.

A third aspect of the methodology is to integrate shipping policy with development of trade policy so as to plan in unison and within a policy reinforcing framework. A recent example of the absence of such a synchronization mechanism is the decision of some countries to join NAMUCAR without effective trade promotion policies which will ensure new trading opportunities and greater use of the NAMUCAR services. This has meant that the anticipated benefits to be accrued by such membership did not materialize.

A fourth aspect of the methodology is to separate the endogenous factors from the exogeneous factors and develop adjustment mechanisms that will maximize the net social benefit to the regional economy. In this regard, it is

somewhat paradoxical that in spite of the political geography of the region which makes ocean and coastal shipping a principal mode of transport, there has been little evidence of a maritime tradition among the peoples of the area. The development of human skills remains still an exogeneous factor that could be easily endogenized. In this context, the linkage effect of shipping must also be examined.

Shipping policy reappraisal must take into account the distinction between short and long term measures, the complementarity of action programmes between shipping and non-shipping measures, the integration of trade, shipping and development policies and the endogenizing of exogeneous factors wherever appropriate. Such a reappraisal scheme may be more appropriate if pursued in a regional context consistent with the global aspirations of the developing world.

Factors in Planning Perspectives

The most important factor in developing a planning perspective for the future is the drive for national shipping. A large part of the current north-south dialogue is pre-empted by the recognition that developing countries should share more equitably in world commerce. It has been argued that the development of national fleets is one way to move in this direction. The drive for national shipping fleets is partly in response to recurring complaints against the conference system by the developing countries. While developing countries export 60% of sea borne cargo by tonnage, they own only about 8% of world tonnage. Some of the arguments against the conference system are itemized as follows:

- major decisions on shipping services and freight rates are made by conferences accountable only to their members and are inimical to the interest of the national economy.
- liner rates are not subject to free bargaining between carrier and shipper.

- the conference system encourages collusion on price fixing and discriminatory competition to non-conference operators, including "closed shop" admission rules.
- the conference system is based on cross subsidization where freight revenue from the developing world supplements the freight revenue in the more advanced countries based on a ton mile measurement.

These arguments are reinforced by positive arguments for the development of national fleets. Some of these arguments are as follows:

- national fleets may improve the balance of payments either through savings on foreign exchange or foreign exchange earnings especially on cross trades.
- national fleets may earn income directly or via linkage effects in other sectors of the economy.
- national fleets may provide diversification of employment opportunities and generate entrepreneurial qualities in shipping.
- national fleets reduce economic dependence on other nations and provide a security of service even in periods of unusual disruptions.
- national fleets may more effectively influence shipping conferences and the level and structure of freight rates.
- national fleets may be used to promote exports and foster economic integration movements.

A second factor for the planning perspective for the future is the introduction of the Code of Conduct for Liner Shipping. This has not yet received sufficient international support to bring it into operation. The basic objectives of

the Code are, as expressed by UNCTAD^{10/} are:

- "(a) The objective to facilitate the orderly expansion of world seaborne trade;
- (b) The objective to stimulate the development of regular and efficient liner services adequate to the requirements of trade concerned;
- (c) The objective to ensure a balance of interests between suppliers and users of liner shipping services;
- (d) The principle that conference practices should not involve any discrimination against the shipowners or shippers of the foreign trade of any country;
- (e) The principle that conferences hold meaningful consultations with shippers' organisations, shippers' representatives and shippers on matters of common interest, with, upon request, the participation of appropriate authorities;
- (f) The principle that conferences should make available to interested parties pertinent information about their activities which are relevant to those parties and should furnish meaningful information on those activities".

The Code provides for a 40:40:20 formula which is in conflict with the philosophy of liner shipping as it has evolved. It gives the trading partners the carriage of 40% of their trade, leaving 20% for third flag operators. Several traditional Maritime states have not found this proposition acceptable. At the UNCTAD 5 meeting in Manilla it was proposed that the cargo sharing principle be extended to bulk shipping and that Flag of convenience shipping should be phased out.

A third factor in the planning perspective is the crucial need to reduce the cost of shipping in the short and long run. This factor is related to the development of national fleets and the adherence to the Code of Conduct. The Code of Conduct enunciates an environmental framework within which national fleets may expand and operate at higher levels of viability. This does not necessarily

^{10/} UNCTAD (14).

mean that the cost of shipping may reduce commensurately.

There are provisions within the Code which may allow for more accountability by ship operators to national governments. It is unlikely that these measures would significantly reduce the cost of shipping. The form of technology, the economic exploitation of scale considerations, the adequacy of infrastructural facilities, the level of shipping expertise and the industrial climate prevailing in the shipping sector are all important factors that would influence the level of cost in the shipping sector. The planning perspective must harmonize the internal and external factors as they affect the cost of shipping to the region.

Conclusion

Control of the Caribbean Shipping Sector is today largely outside the influence of the national or regional economy. It is still too early to say whether the UN Code of Conduct, and the development of National Shipping lines in the region will form the basis for reducing the shipping dependency in the region and the prospects for independent action by the region. A policy reappraisal requires the development of a methodology that incorporates the short and long terms perspective, the reordering of priorities in terms of shipping and other terms of trade factors, the integration of shipping, trade and development policy and the separation of the endogeneous and exogeneous factors in the Caribbean shipping environment. A planning perspective may take these factors into account and in the context of the peculiar features of the Caribbean shipping sector provide a framework within which private and public policy decisions in shipping may be both evaluated and effected.

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MARITIME TRANSPORT IN CUBA
ITS LINK WITH ECONOMIC PLANNING

By the Central Planning Board

Introduction

Economic planning opens great possibilities for nations and entire regions to make use of their resources. Nevertheless in order to realise the advantage of economic and national planning, favourable conditions for this planning are necessary.

The emergence of the socialist society in Cuba allowed for the first time in Latin America for the posing of serious objectives and the ability to count on the involvement of all workers towards achieving these objectives. The fundamental objective of social production within socialism is the full satisfaction of the growing material and spiritual needs of man. In trying to achieve this general goal, different intermediate tasks have emerged.

The nature of these tasks has been determined by the level of development of the productive forces in each given period and by the objective economic conditions, but all these tasks ought to be used to achieve the fundamental objective - and that is to increase peoples' well-being and to develop the productive forces within the society.

On preparing their plans, the developing countries pay great attention to the development of production for export and also to foreign trade. The economy of almost every liberated country depends, to a great extent, on the world market. One of the most difficult problems of this group of countries is the lack of qualified personnel to man the modern sections of the economy, for that reason the liberated countries make great efforts to train their key personnel.

It will be necessary to continue the efforts of giving to the national economy the infrastructure in accordance with the needs of the development that is foreseen.

The economic development of a country demands the increase of transport facilities for freight as well as passengers, with all of these working under principles of proper security, promptness, reduction on the time spent waiting and reliability of the established schedule. All the indices and

measures within the plan for the development of transport in Cuba ought to have economic bases, by means of the use of planning methods and economic stimulus according to the principles established by the System of Direction of the Economy. The fundamental task within the area of transport is to ensure interrelated development of all the means of transport, with the aim of fulfilling all the growing needs of the national economy.

The transport plan includes the performance indices and also the development of rail, sea, air and motor transport. This plan is based on four fundamental elements:

- (i) The transport demand;
- (ii) The efficiency of the transport facilities at our disposal;
- (iii) The circulation capacity of the existing infrastructure (railroads, highways, ports, etc.) and also the available modes of transport;
- (iv) Determining the capacity of the modes of transport and infrastructure necessary to satisfy the demand for the future.

Taking into account the importance of foreign trade in our economy, special attention is given to international freight and also to movements within the ports.

Important investments are allocated for the expansion and modernization of port facilities, providing them with techniques of high productivity. Shipyards are built and expanded and the merchant fleet are increased with modern ships for international transport as well as coastal transport.

Maritime Transport (Background)

In the years preceeding 1959 maritime activities in Cuba were not directed towards the interest of the country. Freight transport was carried out mostly by regular transnational lines, because there did not exist a truly Cuban enterprise which had the necessary experience to negotiate shipping contracts and manage ships of foreign flags.

On the other hand coastal transport with truly Cuban characteristics did not exist in the context of freight traffic in the territory.

After 1959 there emerged enterprises which were responsible for promoting and managing a national fleet not only for coastal trade but also for

international voyage. In addition, there was the creation of an enterprise wholly in charge of the freight transport of Cuban foreign trade, as well as the hiring and management of ships of foreign flags. Since then the growth of the merchant fleet has been rising at a fast rate.

The new dynamism given to the Cuban economy, made it possible to locate markets for its products in much farther places than before. It also allowed for the growth of the volume of the country's foreign trade to outstrip the growth of our own merchant fleet. This reality has led to the adoption of new measures aimed at avoiding a situation whereby these maritime activities become the unequal link limiting the progress of the rest of the economy.

General Considerations of the Plan

As its objective, the Transport Plan must satisfy, with as little expense as possible the needs that the national economy and the population has of it as well as the improvement of the quality of services given.

To this end it must guarantee increased efficiency in operations in the use of the means of transport and of basic investments. It must also accelerate delivery of freight and produce economies in labour, material and fuel expenses.

a) Specifics

The plans for the development of transport must anticipate the subsequent improvement of the use of the basic means, the development and technical reconstruction of all types of transport components of unified transport system for the country, the mechanization of the processes of loading and unloading, repair and other works and measures in order to increase work productivity, reduce the transport cost and increase income and profitability of the different types of transport.

The transportation volume which determines the level of development of the technical means of transport must be internally consistent to freight transport and must correspond to the demand resulting from the activities that may develop in the production of goods and services - passenger transport must fulfill the needs that the population has to move from one

place to another, taking into account the most economic means of transport and the preferences of the user. The development plan for permanent facilities and of the supply of means of transport must guarantee not only the meeting of incremented demand but also the creation of the necessary reserve capacity in infrastructure and transport mode.

The development of the unified transport network must be co-ordinated with the development and location of the productive forces, as well as with the increase in foreign economic links of the country. The bases for its development is the rational links between the economic regions and the industrial centres as well as the optimum freight transport distances for the different modes of transport.

In the development of the different modes of transport one must make allocations based on the rational distribution of transportation between the modes of transport bearing in mind both the physical capacity of a given mode and also the capacity of the infrastructure. These allocations must also be considered in the development of permanent facilities.

All the indices and measures included in the plan for the development of transport must have economic foundation by means of the use of planning methods and economic stimulus in accordance with the principles established by the system of the Direction of the Economy.

The value of the production (Gross Production) of the transport sector is equal to the value of the transport services, destined for sale, created by specialised transport enterprises, in addition to other income produced by them. Included in the value of transport services are the value of transporting goods and passengers and other operations related to it. Specifically the values reflect the cost to state transport enterprise for the transportation of goods, passengers and mail, the loading and unloading operations carried out with the resources of the enterprises within railway stations, ports and airports, as well as storage. Apart from these it includes the income received from the renting of equipment to other enterprises, as well as rail, port aeronautic and airport services.

- Assessment of Production of the Transport Sector

All the elements that make up the Gross Production of transport will be valued according to the tariffs in force, - they will take into account the criteria relative to economic benefits derived from use of the transport modes, the transport distances and the agreements on international tariffs.

For the elaboration of the Balance of the Overall Social Product, one must take into account while elaborating the transport balances a breakdown of the transport gross production, according to the end use (industry, agriculture, export and individual consumption).

The transport plan is linked to the remaining sectors of the plan of the national economy, by way of the balances elaborated for the transport activities and by the resource requirements of the different categories of the plan. In elaborating the national transport balance it is necessary to have:-

The Country's Production and Foreign Trade Plans

The value of trade production and the imports of the different sub-sectors of the industrial and agricultural sector, as the physical production in tons and the value of the mercantile production and physical import and the nominal value of products are used to elaborate this balance. This information will permit the elaboration of the transport coefficient and determine the quality of the information given about the transport demand.

The demand for transport is calculated in tons according to origins and destinations.

The Construction Plan

Port facilities are put into operation within planned periods with basic guidelines such as length gauge speciality and capacity. These elements will permit analysing of the link between the volume of the freight and the capacity of the transport infrastructure.

The Foreign Trade Plan

The demand by Cuba to transport general as well as specialized cargo, requires that attention be paid to the origin and destination of

goods. One has to make clear distinction between the geographical areas of embarkation for imports and the overseas reception areas for its imports in such a way as to define the international transportation plan.

The demand for freight transport facilities for imports and exports within the national ports, is the basis on which the port services are determined. For each section of the plan the resources needed for its successful implementation are identified.

b) Planning of the International Freight Transport Demand and Port Services

The international freight transport plan guarantees the satisfaction of the demands resulting from foreign trade, while aiming for the highest efficiency of external costs, without underestimating the possibility of earning foreign exchange when the operational conditions so permit.

The international service is structured by classifying freights and/or movements according to the direction of the exports or imports, a matter which is governed by the analysis of maritime activities.

In order to calculate the demand of activities two types of analysis should be done:

- (a) The port (services facilities) demand;
- (b) The international freight transport for Cuba resulting from foreign trade.

Port Services Demand

It is determined by the services demanded by foreign trade of the total exports and imports as well as the traffic from other countries and also coastal cargo.

The basis of the calculation of each element is as follows:

- Freights for foreign trade must be defined in terms of ports of destination for imports and ports of embarkation for exports. All of this is the result of a plan drawn up by the Ministry of Foreign Trade and according to information given to it by the agencies using it as to the place of consumption of the imports and the origin of the exports.

- Passenger transport handled within the national ports are as a result of agreements signed between enterprises of socialist and capitalist countries and from the Ministry of Transport, who will inform of the effects of these on the elaboration of the plan.
- The service given to coastal transport will be a result of the national freight balance for internal transportation.
- International Freight Transport Demand

This is a result of the agreements foreseen by the Ministry of Foreign Trade from the FOB imports and CIF exports. In order to calculate the necessary capacity for its operation, the origin and destination of the cargo at the level of selected geographical areas will be defined, classified as imports and exports. In order to define the possible countries for contract or sale the foreign trade organization will take into consideration the value of transportation services with the aim of achieving the most efficient alternative for the national economy. The allocation between the national fleet and the rented fleet is defined, based on the balance between the demand and the needed capacity.

To elaborate the balance between the port capacity and the international maritime transport, a product index has been created, which includes classification at the packing stage. The latter (corresponding to a breakdown of the foreign trade demand) permits the separation of the nominalized products by type of packaging, facilitating its classification. In order to calculate capacity, it is classified in terms of exports, imports and coastal products, making groupings of basic products.

Taking into account the importance that irregularity of demand of services has on maritime activities, the annual demand must be presented and examined on a quarterly basis, with the idea of maximising service at any given time.

Planning of the Capacity of Different Means of Transportation

On determining the level of transportation for freight and passengers for each mode of transport, the next step is to calculate the capacity needed for each, in order to fulfil the demand of the proposed services. Two basic indicators have to be taken into consideration:

- (a) Performance of the functioning capacities, which the transport production shows (tons or tons/miles) related to each ton operating capacity.
- (b) Operating coefficient of the capacity which expresses the percentage of total functioning capacity.

The calculation is done on relating the transport demand resulting from the capacity yield, determining the capacity that must function, and the latter is divided by the operating coefficient capacity will show the total capacity demand.

Within the area of maritime transport the calculation to determine the needed capacity of ships and port facilities is determined.

For the calculation of the capacity demands of fleet the following is established:

$$CT = \frac{Ql}{Rce - Tde} + Cr + Ci$$

Where: CT is the total capacity of the fleet in tons per dead weight. (DWT)

Ql is the freight traffic in tons/kilometres.

Rce is the operating capacity (tons - kilometres by ton of dead weight yearly).

Tde is the tons per daily operation of a ship in a year. (Tons per dead weight).

Cr is the capacity of the fleet under repair.

Ci is the idle capacity.

In order to calculate the operating capacity the following calculation is done:

$$Rce = a.e.v$$

Where: a is the coefficient of cargo operating capacity

\underline{e} is the coefficient of the sailing capacity
 \underline{v} is the average speed under operation (weighted
by the capacity).

For these capacity calculations the types of ships and where they operate must be taken into account. The following pointers are used as well:

- (a) Coefficient of the operating capacity (in freight and passenger ships).
- (b) Available tons per day.
- (c) Coefficient of dynamic operation of the passengers' capacity.
- (d) Average monthly price per ton of dead weight rented.

In order to determine the annual receival in tons operated by a dock for general cargo the following calculation is made:

$$Q_a = \frac{30 \cdot Q_{ad} \cdot C_m \cdot C_{oc}}{i_m} \cdot N$$

Where:

- Q_{ad} is the daily receival capacity
- C_m is the meteorological coefficient
- C_{oc} is the dock operation coefficient
- i_m irregularity coefficient (peak month)
- N number of working months in the year

In the calculation of the daily receival capacity the number of daily work shifts and the tons per brigade, will be taken into account, considering the latter, the level of mechanization, the type of ship and the freight.

In the case of docks handling bulk freight the same is used but each indicator will have the value resulting from the technology installed in the docks, thus affecting mainly the daily receival capacity indicator.

For the elaboration of the plan, the following indicators will also be used:

- . Utilization of the receival capacity (tons operated/tons capacity).
- . Dock meter in use.

- . Tons according to meters in use.
- . Gross intensity.
- . Net intensity.
- . Average yield per worker.

Operation of Ships for Long Voyage

Attending to the need to ensure transportation of Cuban cargo as well as taking into account the volume and the character of trade our country has established a set policy as regards buying and selling with the main countries of the socialist bloc with developed capitalist countries of Europe and Asia as well as under-developed countries of Asia, Africa and Latin America. It is usually on the basis of CIF (Cost Insurance and Freight) and FOB (Free on Board) for imports and exports respectively.

Cuban Freight Enterprise (Cuflet) has the function of ensuring the shipment of goods for foreign trade, in those cases where the sea transport is paid by Cuba using the capacity of the fleet for such shipment and using additional capacity from foreign ships within the international freight market or by means of bilateral agreements on sea transport.

Statistical Data before the Triumph of the Revolution Units and Capacity

Before 1959 the Cuban merchant fleet was comprised of 14 ships with 58 thousand D.W.T. (Dead Weight Tonnage), all of which were operated by transnational corporations and enterprises. After 1959 the Revolutionary Government embarked on a wide programme for the development of the Cuban fleet, so that from the beginning of that year state entities emerged destined to promote and manage the national fleet. Shippers enterprises were created with the aim of assuming, on behalf of the state, the monopoly of the maritime transport for goods as well as for passengers.

Sea Transport Enterprises

The organization structure of sea transport is as follows. There are two shipping enterprises which operate the ships of the national fleet and one operator enterprise which is in charge of the use of the capacity of the national fleet as well as those ships which are chartered in order to guarantee the international sea transport.

The forming of the two shipping enterprises is a result of the interest of the national economy to develop its fleet. The Mambisa Shipping Enterprise operates the biggest ships and these are used for making the longer runs in international waters. The Caribbean Shipping Enterprise has smaller ships and they are responsible for making the coastal runs and runs within the Caribbean Basin.

On account of our country being an island which corresponds to a country with an open economy, international maritime transportation has exceptional importance to our external relations.

The development of coastal transport is conditioned by the harmonious and proportional growth of the national system of transport. On having a planned economy, it is possible to study the role and area of influence of each type of transport. In the specific case of the Republic of Cuba the situation exists where there is a developed system of public roads, (railways and highways) throughout the country; as such the three basic means of transportation - railway, motor and sea transport - compete with each other.

After having done some investigation, it was suggested that the main role to be played by coastal transport should be to make the long journeys between ports moving specialised cargo. This constitutes the basic conditions governing the operations of the coastal fleet.

a) Mambisa Shipping Enterprise

(This makes international journeys)

It has 61 units consisting of general freighters, container-carriers, carriers, refrigerated units, multi-purpose and training ships. Total capacity is 779,000 D.W.T. The average age of the fleet is ten years.

b) Caribbean Shipping Enterprise

This is reserved mainly for making coastal runs. However, it sometimes extends to the ports of the countries of the Caribbean and occasionally trans-atlantic voyages. It has a total of 23 freight ships with a capacity of 113,634 D.W.T., including freight tankers, cement-carriers, tankers and trans-shippers. It has 13 ships of different types and capacity for passenger service.

c) Cuban Freight Enterprise (CUFLET)

As a state entity, this is designed to carry out the operations of its own ships as well as the ships of the national fleet. It must obtain cargoes from third world countries in order to utilize the fleet in moments when there is very little work to be done, this being a result of the seasonal characteristics of transport demand. In addition, a goal is to try to earn foreign exchange.

Coastal Transport, Port Facilities

a) Coastal Transport

The merchant fleet that deals with coastal cargo, transports general cargo, liquids and dry cargo between the Cuban ports and also to other ports in the Caribbean.

It is important to emphasize the projected development for the merchant fleet responsible for coastal transport.

At the end of the five year plan 1976-1980, almost all our ships will have been replaced with highly specialised ones, ships for transporting bulk cement, ferries and cistern ships for all types of liquid.

With the development foreseen for transport of national traffic, the demand for sea transport within the national economy will be satisfied and, as it is well known, at the end of this five year plan, we intend to be able to cover the coastal transport of oil with our own ships by increasing the capacity and achieving the highest efficiency.

b) Passenger Transport between Cuban Ports

At present the main ports for this type of traffic are Batabano and Gerona in the Isle of Youth, this is due to the steady growth of the student population that come from this region, as well as from other ports in the eastern provinces of the country.

c) Port Facilities

In order to improve the performance of port facilities and to achieve the maximum from the capacity of the fleet, an improved operative planning system was established with the aid of the USSR. In addition, investigations were carried out jointly with foreign firms and they came up with immediate measures to solve the most urgent problems.

The operative planning system began with efforts aimed at speeding up the withdrawal of goods from the ports with the help of the other state organizations. The building up of regular lines has contributed to improvement of the freight traffic between national and foreign ports.

Other measures adopted in order to achieve increased efficiency include the development of a standardization of freight; to such an end a National Commission for Freight Standardization was created. In addition, there has been increasing tests in the use of pallets, containerization and unslinging elements.

The country has more than 20 ports which handle all types of cargo. Of these the most important ones are those in Habana Santiago de Cuba, Cienfuegos and Nuevitas, since these handle container cargo.

Maritime Trade with Member Countries of the Council for Mutual and Economic Aid (COMECON)

The existence of a Council for Mutual and Economic Aid as an organization in charge of establishing economic links for the development of the socialist countries, offers through this organization an example of multinational co-operation within the area of maritime transport. The organization studies the participation of the countries in relation to transportation; it looks into the efficiency of the use of their respective fleet, tariffs, tonnage of port loading and unloading and other aspects of maritime transport.

On account of the present level of development of maritime transport in Cuba, it finds itself favourable in its relationship with the other countries of the COMECON in terms of the different issues agreed on in this area.

One concrete way in which this relationship was brought about was with the forming of regular multinational lines, Bulcuba and Cubalco, which links the Cuban ports with the European ports guaranteeing the transportation of the cargo resulting by their trade relationship.

The Present Problem of Transportation in the Caribbean Basin and Cuba's Trade

Since 1974 great efforts have been made aimed at promoting our foreign trade mainly in the Caribbean area and Guyana. Relative advance

can be seen in this process since this area holds the greatest possibility for the export of our non-traditional and new products. Export management has been achieved in spite of the fact that the underlying infrastructure has not always been in existence.

For more than one reason there exists the need to develop a transport policy particularly for the area of greatest commercial activity - that is the Caribbean Basin. At present, by virtue of the bilateral trade relations established by Cuba in the region we can identify this geographical zone as one which holds trade possibilities for our country.

In terms of maritime transport, based on the fact that it involves small ship operations where schooners of 60 MT capacity and even ships of 800 and 1,000 TM can participate, all these capable of transporting dry cargo and/or refrigerated cargo for this early stage. However, for the bulk of our products there is need for regular lines and a small tramper fleet which can withstand eventualities and at the same time ensure its profitability by carrying cargoes between the Caribbean ports.

On the other hand, the Caribbean Shipping Enterprise was formed with the idea that it was needed to operate in an area of the service of foreign trade.

Cuba as a Member Country of NAMUCAR

During the last decades several independent movements have emerged in Latin America. Regional and sub-regional mechanisms have been gradually growing with an aim to integrating their economy and have even openly suggested the possibility of the economic integration by means of the formation of Latin American Multinational Enterprises.

The first step was an attempt to break the established methods, creating an efficient transport mechanism that would serve as an instrument for development of the markets and promote the economic and social sectors that comprise the Caribbean Basin, thereby complementing the services already given by the established Naviera national lines.

It is an obvious fact that the Caribbean Basin has at present a wide range of products that can be quickly traded. On the other hand, much of its economy is not complementary, but concerted efforts must be made aimed at increasing the exchange terms and to decrease the factors of dependency.

In order to increase the volume of intrazonal exchange we need to remove once and for all the obstacle that presents itself. The irregularity and the deficiency of maritime transport, limit the production capacity of the countries and hinder trade to a great extent.

Caribbean Naviera Multinational is the response of eight countries, including Cuba, which have resolved to stand up to the test of time and hoist the flag of independence and dignity in the heart of America. The formation of multinational fleets with state participation offsets the negative effects caused by the prices of export products on having to pay high freight rate to Conferences that impoverishes our economy.

NAMUCAR now receives attacks from those who receive benefits from the Conferences, and who barefacedly try to usurp the rights to carry the trade of the Caribbean countries.

NAMUCAR has three ships of its own with more than 15,000 D.W.T. It has an average of two ships leased, with a tonnage between 1,500 and 2,500 D.W.T. The enterprise's capital is about 30 million dollars and its agreed capital is 14 million dollars, and the contribution made by the following countries amounts to \$10,700,000. (Costa Rica, Cuba, Jamaica, Mexico, Nicaragua, Venezuela and Trinidad and Tobago). The cargoes carried by NAMUCAR have represented an annual average of 70,000 tons which constitutes less than the 18% of the cargo available in the area.

NAMUCAR economic management has been below expectation because since it has been in operation it has lost more than \$5,600,000.

Starting with the last councils, measures were taken to modify the situation considering that at present the personnel in charge of the management of the enterprise has the necessary conditions to achieve its goals; that is, not to obtain a profit but to give service to help trade's development by at least breaking even.

Our country is willing to search for formula and ways to increase the efficiency of our operations as a means of avoiding disbursements

which impoverishes our economy. All of this will bring concrete benefits which will allow us to improve the standard of our people and the development of the countries of the Caribbean area.

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TRANSPORT PLANNING IN HAITI: ORGANIZATION AND MAIN PROBLEMS

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I. PRESENT SITUATION OF THE TRANSPORT SECTOR

Development of transport is among the main priorities of the 76-81 Five Year Plan. During the 1979/1980 fiscal year, the sector absorbed almost 19% of the national investment budget. Its significance is explained by the fact that the demand for transport is a secondary one. Indeed, a transport plan is linked in particular to agricultural development, industrial development and urbanization.

In the case of Haiti, transport must above all else satisfy the needs of the primary sectors and more particularly of agriculture, which contributes over 40% to the gross national product. Furthermore, in order to sustain the government's decentralization programme, whose aim is to develop the provinces, reinforce the economic integration of the territory, create new markets and increase social contacts, it was necessary to strive very hard to provide access to the principal towns of the national urban network. In this light, efforts were concentrated on the construction and repair of roads that were national in scope and of bridges, as well as on the improvement of the port and air infrastructures so as to increase mobility and access facilities and reduce transport costs.

Thus, the government implemented an extensive transport programme, the general aims of which, for the 76/81 Five Year period, are, in short, as follows:

"to upgrade the transport infrastructure of the country and improve efficiency; to plan transport infrastructures at the most economical cost to users and the Haitian State, so as to allow year-round access to the various regions of the country and to facilitate efficiency and expansion of the transport services."

However, in spite of the setting up of operational plans to implement these objectives, it must be admitted that the sector has multiple problems.

II. ORGANIZATION OF TRANSPORT PLANNING IN HAITI

Transport planning within the framework of a general development plan is fairly recent in Haiti. It came about with the elaboration of the first Five Year Plan 71/76. In the past, the sector's activities consisted of intervention whenever immediate action was called for to meet urgent needs. In practice, activity was therefore limited to repairing sections of roads and other transport infrastructures that were completely destroyed so as to ensure accessibility to certain parts of the country. The few new facilities that were built were done without prior planning. At that time, a project feasibility study was seldom done; technical studies alone were sufficient. Nevertheless, for some ten years now, it has been observed that a new orientation has been given to the sector. This was direct entry into the planning phase without really having all the basic administrative structures necessary for such an activity. When the Government became conscious of this weakness it created the following principal planning structures:

- The Independent Transport Service (Service Autonome des Transports/SAT);
- The National Transport Council (Conseil National des Transports/CNT);
- The Planning Unit (Unité de Programmation/UP) of the Department of Public Works, Transport and Communications (Département des Travaux Publics, Transports et Communications (TPTC).

II.1 The Independent Transport Service (SAT)

The SAT was formed by decree dated 20 January 1977 as part of the Department of Public Works, Transport and Communications. Its main functions are:

"to define all national policies on Transport: road, air and sea; to decide on the implementation of any feasibility study or studies of any other nature and on the preparation of all relevant projects."

In order to achieve this, it is organized in the following manner:

"a technical control division, a physical planning division and a transport planning division". The function of the transport planning division is to "seek essentially to establish any transport policy in relation to needs and possibilities and in close cooperation with any institution or agency equally interested."

However, SAT has not yet managed to carry out its mission to the fullest. The main reasons for this seem to be:

- a) budget limitations which do not allow recruitment of a sufficient number of qualified technicians needed to execute the various tasks allocated to this service;
- b) the various administrative structures involved in planning in the sea and air sectors, which do not seem willing to submit up to now to the technical leadership of the SAT and which, as a result, continue to act on their own;
- c) the various local institutions, in particular those responsible for integrated projects (DRIPP, CDN, CDPG, ...), which do several things in the area of transport without cooperating or consulting with SAT. This hinders in a way the activities of the Independent Transport Service;
- d) the problems of inadequate dissemination of information both within the administrative structure of SAT itself as well as with respect to SAT's relationships with other technical branches of the transport sector.
- e) the external aid agencies which sometimes exert very strong pressure on national technical services in the area of transport by channelling external funding to the financing of projects not identified in the Five Year Plan and the annual plans being carried out, which makes any real planning impossible.

II.2 The National Transport Council (CNT)

The CNT was formed by decree dated 31 March 1978. Its main functions are:

"to establish and formulated national policy in the field of transport. It supervises, directs and co-ordinates the activities of the various public or private services in the transport sector: land, air and sea. It approves the objectives of their work programmes as well as the amounts of their working budgets and the costs of all work to be undertaken".

However, since its inception, the CNT has not yet become operational, which constitutes, considering its functions, a real bottleneck for planning and development of the sector. Indeed, the sector's complete policy should, in fact, be formulated by the National Council which should at the same time determine priorities. In the absence of such a guiding light, the intra-sectorial institutions study and submit their own plans which are accepted or rejected in part or totally depending on financial availability.

II.3 The TPTC Planning Unit (UP)

The UP was formed in 1978, as part of the Department of Public Works, Transport and Communications, and made operational in 1979. Its essential functions are:

- a) to consider proposals of the Five Year Plan and annual plans from the sector;
- b) to articulate the sector's plan throughout the regions;
- c) to plan measures, projects and budgets for each objective of the sector's plan;
- d) to study and evaluate all projects of the sector;
- e) to contribute to the preparation of development and operating budgets for the sector.

The above mentioned functions make of the UP "the theoretic equivalent of a central planning body" within the TPTC. But it must however be pointed out that, after only one year's operation, it has not been able to satisfy all the hopes placed in it. Projects meant to strengthen this branch of planning are underway.

However, the problems encountered in transport planning in Haiti would be incomplete if we did not turn our attention to sector planning.

III. TRANSPORT SECTOR PLANNING: THE MAIN PROBLEMS

Four essential phases can be distinguished:

- the global planning phase
- the project formulation phase
- the execution phase
- the control and evaluation phase

III.1 Global Planning

In the above discussion of the branches of planning (SAT, CNT, UP) we briefly outlined certain problems encountered in global planning. However, we can further underscore these problems by going into them in more detail, in liaison with programmes and projects.

The limits assigned to the sector in the general development do not stem from a clear definition of transport needs in relation to the various growth objectives. Resource allocation is not determined by identification of priorities, of demands created by growth and of development possibilities to be derived from the improvement in transport.

The notion of programmes and projects is not well assimilated by most of the sector's services and bodies. One finds, for example, in the present Five Year Plan (76/81): road programme, sea programme, air programme...etc. Whereas on going through the projects comprising these programmes and re-classifying them according to certain criteria, one could find:

- construction programme
- maintenance programme
- equipment programme
- urban renewal programme, etc.

In addition, the statistical data indispensable for the forging of the tools of planning are not always available, and when they are, they are unreliable.

There is no available model for transport planning. Now, as it turns out, data and models are two components useful in the analysis of an important range of variants.

One also notes a lack of coordination between transport services and bodies and the productive sectors (agriculture, industry...).

The result is therefore that one cannot, at the present time, elaborate a global transport policy and that one is often forced to be content with the juxtaposition of projects and to come more and more with projects calling for immediate action.

III.2 Project Formulation Phase

At this phase, the objectives, as well as the relevant indicators, are not always well defined. Is it a question, in fact, on a particular project, of increasing the length of the pitched section from X kilometres in 78/79 to Z kilometres in 79/80? Or of making an investment of Y million gourdes during the year 79/80 in order to increase "transport's" share of the GIP from L% in 78/79 to R% in 79/80?

Furthermore, the need for the project in relation to development is not often expressed. Now development of transport can make accessible new agricultural lands, encourage peasants to shift from subsistence farming to market-oriented production, procure for industry the means of obtaining raw materials, and allow towns to improve their food supplies. This can also increase the possibilities of social exchanges and improve school attendance. But very often a road, for example, is constructed on the simple supposition that the economic activity induced will gradually provide it with traffic. In this case, the project must be part of a series of development measures, for, otherwise, the expected traffic may very well not appear at all.

It can be seen that weaknesses stem in particular:

- from the lack or non representation of data;
- from the inadequate number of professionals qualified in transport planning, project study and formulation.

Furthermore, external agencies exert appreciable pressure on national technical structures in order to have them subordinate the project studies to the demands of external financing and very often they decide to finance a project that has not yet gone beyond the "idea" stage.

III.3 The Execution Phase

This phase, passing from the abstract to the concrete, presents problems of a different nature from those encountered during elaboration.

Among problems linked to execution we shall consider only those whose effects are at the level of financing:

- There is a considerable gap between the time a project has been studied, the scheduled starting date and the time its execution actually begins. Nevertheless, funds allocated are never related before execution to national and international inflationist factors. This leads either to an inadequate execution quality-wise, or to considerable disbursements in order to satisfy specifications while provoking great pressure on internal public resources of financing.

III.4 The Evaluation Phase

Since planning is a repeated process, the problems encountered during the above-mentioned phases are echoed at the evaluation level. Indeed, since objectives and indicators are not sufficiently defined at the so-called formulation stage, it becomes extremely difficult to evaluate the impact of a project on the standard of living of the population, on production or on employment. One is thus content to draw up a "completion sheet" and not an evaluation in the true sense of the term.

IV. PROGRESS TO BE ENVISAGED

The main courses of action to be undertaken, on a short term basis, to deal with the various problems indicated would be the following:

- a) The systematic collection of data on transport from basic structures, the strengthening of the system of production of information and diffusion thereof to all services and planning branches of the sector. This would allow for correction of a situation which results in this current fact as pointed out in a report:

"imported technicians must at times not only study and build roads..., but begin by collecting the slightest data, which not only proves expensive but also gives less good results in the sense that a complex global situation cannot be sized up in a few weeks or a few months, unless it is not previously partially well characterized".
- b) The improvement of the national capacity for transport planning through recruitment of new trained personnel, founded on objective tests, national and methodic organization of institutions, continuous in-service training of technical staff and strengthening of external technical cooperation in this domain.
- c) The use of new techniques of analysis to translate into terms of transport needs the production objectives of the different sectors and development perspectives both on the national and regional level.
- d) The improvement of the "evaluation technique" in order to judge all the better the impact of a project on the national economy.

POPULATION POLICIES IN THE CARIBBEAN

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This paper is restricted to the former British colonies in the Caribbean, including Guyana, Belize and the Bahamas. They include a number of independent or self-governing countries which, with the exception of the Bahamas, share a basic common population history.

BACKGROUND

The first population policy in the region involved the importation of labour from wherever they could be obtained (Europe, Africa, Asia) and under whatever conditions appeared at any given time most advantageous for the sugar plantations (free workers, slaves, indentured labourers). This extended over a period of about two and a half centuries. During the heyday of African slavery no attention was paid to the possible contribution of the other components - births and deaths - to increasing population, so that mortality (and morbidity) were high and fertility very low, though some limited attention was given to these towards the end of slavery. In those countries where there was still a shortage of labour for the plantations at the time of emancipation (particularly Guyana and Trinidad), there was recourse to indentured immigration mainly from India.

Since the single-minded purpose of this first population policy was to provide and maintain "adequate" labour supply for the plantations, population settlement concentrated in and around the plantations, while there was a single important town which served as the sea-port and the banking and commercial centre. Peasant agriculture and small-scale business unrelated to the plantations were met with either unconcern or hostility.

During slavery and even after, there was strong opposition to the education at any level of the masses of the population since an uneducated and ignorant work-force was ideal for the plantations. Similarly there was strong opposition to any efforts to give religious instruction to the

slaves and later indentured workers. For the most part, the children of the white population in the colonies were sent 'home' to England for their education. To meet the demand for education for the children of the less wealthy white population, a few schools were started in the various colonies with grants from the planters and merchants. Children of the non-white population were accepted into these schools, particularly after slavery, as a means of providing the clerical and low-level administrative workers required.

The population history of the Bahamas is different. Efforts to develop the plantation cultivation of sugar during the eighteenth century failed because of the poor soils. Instead, significant population increases came as the result of a flight of 'loyalists' with their slaves to the Bahamas from the United States of America following the latter's war of independence. This was later augmented by runaway slaves from the non-British territories in the Caribbean and by Africans freed by the British from ships still plying the slave trade, after the abolition of slavery by the British.

After this brief historical background, we now look at the current population policies in the region.

POPULATION POLICY ADOPTION AND IMPLEMENTATION

Immigration

Now that the region has shifted from one of a shortage of labour to having a critical labour-surplus (see below), immigration policy has shifted to restricting immigration of unskilled and relatively low-skilled workers which formerly formed part of an intra-Caribbean migration from the less prosperous countries. This action was first necessary on the part of Trinidad and Tobago which earlier had received large numbers of population from Barbados and the Windwards. Professional and highly trained workers traditionally came from the 'mother country', but with self-government and, in many countries, full independence as well as improving levels of education and aspiration on the part of the nationals; most countries have adopted a policy of restricting the immigration of foreign workers at all levels as far

as possible. To achieve this, would-be employers of foreign workers must obtain a 'work permit' for each such worker, and this is given only if no national competent to fill the particular post is available. In such cases, employers are often required to undertake to train nationals within some reasonable period so as to overcome this need for employing foreigners. In general this has not worked satisfactorily for a number of reasons, including an absence of genuine support of the policy on the part of employers, on the one hand, and the 'brain drain' and other factors affecting the supply of nationals, on the other. These are discussed below.

The two mainland countries - Guyana and Belize - which continue to have an overall low population density, with vast sparsely populated areas in their hinterlands, can still benefit from appropriate large scale immigration. They are both receiving some immigrants but would be interested in more rapid population growth to develop their hinterlands. There is, therefore, in each case, an absence of restrictions on immigration such as obtains in the islands, and a willingness to accept immigrants from anywhere if they are prepared to assist in developing the unused areas. Despite this, both countries, and more particularly Guyana, are losing population who are emigrating mainly to the U.S.A. and Canada.

In the case of the Bahamas, prior to 1967 when the newly elected national government introduced a hard-line immigration policy, there had been a tradition of a virtual open-door policy on immigration. There was a continuous stream of immigrant unskilled workers mainly from Haiti and to a lesser extent from the Turks and Caicos Islands. But the massive inflow of unskilled workers in the post-World War II period led to the eventual passing of the first restrictive immigration Act in 1963 which required deposits for unskilled workers. But there was also growing concern among Bahamians about the immigration at the higher levels as well, and the consequent increasing expatriate dominance of the economy and the high-level work-force. There have, therefore, been further restrictive legislative acts in 1967 and 1970 affecting immigration at all levels. This restrictive legislation has been associated with government campaigns

to deport illegal unskilled immigrants though the problems of illegal immigration continue.

Emigration

Since World War II, with the rapid population growth, many Caribbean governments have seen emigration as the quickest means of controlling an over rapid population growth, and more, particular, of dampening the high levels of unemployment and under-employment. A variety of measures have been taken to encourage emigration either on a permanent or a temporary basis. These include bilateral agreements for the recruitment of persons from the region to work in the U.S.A. and Canada as domestic servants and other categories of unskilled workers including seasonal agricultural workers. There was serious concern on the part of most countries of the region when Britain introduced its first legislation in 1962 which virtually ended the large-scale emigration to that country that was then taking place.

More recently Canada and the U.S.A. tended to encourage qualified and highly skilled workers rather than unskilled workers. This, along with the other well known reasons why developing countries tend to lose high-level manpower to developed countries, have led to the emergence in the region of the 'brain-drain' of professional and highly trained personnel. In an effort to get skilled and qualified nationals to return home, a number of countries, notably Jamaica, Trinidad and Tobago and Guyana, have sponsored official visits to some metropolitan countries and through other avenues such as extensive advertisement in the technical journals and the newspapers in those countries, have sought to encourage such nationals to return home and make their contribution to the home country's development. These appeals do not appear to be backed up in all countries by administrative arrangements for prompt action to take advantage of responses to these appeals.

In recent years, because of world economic problems and new concern about immigration on the part of the U.K., the U.S.A. and Canada, migration to these countries from the Caribbean is becoming once again extremely difficult. As a result, once again there has developed important streams of intra-Caribbean migration, particularly from the poorer islands to Trinidad and Tobago and Barbados.

Internal Migration/Rural Development

Most governments of the region have a policy, either explicit or implicit, of trying to slow down the rate of growth of the principal urban centre (in terms of the "greater" city rather than the much more restricted "legal" city) as an effort to obviate problems related to over-rapid urbanization. The principal measures taken to effect this policy include: cautious efforts to develop the rural areas in terms of amenities (e.g. electricity, roads, secondary schools, etc.) and in terms of employment opportunity outside of agriculture principally through the re-direction (through encouragement) of industries. In addition, for reasons of population distribution but also of food production and of employment, efforts are being made to upgrade agricultural employment in the minds of the population through the inclusion of training in agriculture in both primary and comprehensive secondary schools and other means including repeated exhortation.

In a number of countries, including Jamaica and St. Lucia, for example, special government organisations have been set up to deal with the important matter of rural development. As indicated earlier, Guyana and Belize are especial cases in that they have an extreme pattern of settlement with most of the population residing in very small proportion of the area of the country and the bulk of the country remains virtually uninhabited. Moreover both of these countries are faced with territorial claims from neighbouring countries (Venezuela and Suriname in the case of Guyana and Guatemala in the case of Belize) which emphasize the risks associated with these vast, unused territories in their cases. Guyana is actively seeking to encourage significant migration by its citizens to the hinterland in addition to considering the possibility of encouraging immigrants from neighbouring Caribbean territories already discussed.

Family Planning

The countries of the Caribbean have long faced a variety of serious social and economic problems that are seen as in part resulting from rapid population growth. These include: high and increasing levels of unemployment and under-employment, land shortage, low and

unequal incomes, malnutrition and poverty associated often with large families. The traditional popular response to these problems, as is shown elsewhere in this study, has been large-scale emigration, either to less unfortunate countries within the region, or to countries outside of the region. The Government response, in recent decades has been to seek to speed up national social and economic development as the only final solution of these problems. Increasingly, however, the people and the Governments, usually in that order, have been acknowledging that the reduction of the very high birth rates and of the large family size which have existed in the region, could make an early impact on some aspects of these problems both at the national and at the family level.

As a result, family planning programmes now exist in all countries of the Commonwealth Caribbean except Guyana. The introduction of these programmes has, in almost every case, been the subject of much controversy and serious opposition by certain sections of society. The most consistent objection, in earlier years, came from the Roman Catholic Church. However, while this source of objection undoubtedly delayed the introduction and obstructed the progress of a programme in Trinidad and Tobago, in the case of the smaller islands, family planning programmes were started in the Catholic Windward islands, St. Lucia and Grenada earlier than in the non-Catholic Leeward islands.

Usually, the provision of contraceptive supplies was started in the various countries by voluntary workers who soon after have come together to form a family planning association. In the absence of Government support in the early years, with a few notable exceptions indicated below, the local programmes have relied heavily at the beginning on external support, mainly from the International Planned Parenthood Federation (IPPF). The national associations have also received important advice and guidance as regards their programmes from the IPPF. While the larger associations (Barbados, Jamaica and Trinidad and Tobago) have held full membership of the IPPF for many years, the associations of the smaller islands have been receiving financial and other support from IPPF without the benefit of membership. These islands associations (Antigua, Grenada, Montserrat, St. Kitts/Nevis, St. Lucia and St. Vincent) came together in 1972, with some of the French

and Netherlands Caribbean countries, to form the Caribbean Family Planning Affiliation (CFPA) with UNFPA membership to IPPF. The CFPA has been involved in providing training to critical staff, advice and assistance as regards education and information programmes and more generally on all aspects of their programmes to the members of the affiliation.

More recently, in Jamaica, Trinidad and Tobago and Dominica, the Government has become involved in a national family planning programme with the objective of lowering the level of fertility. This has meant that considerably more funds have become available for the programme not only from the Government itself, but also through the Government from international organizations such as UNFPA, the World Bank, USAID and others in addition to the IPPF which was continued and in many cases increased their support. Two general tendencies for national programmes are:

- a) that the Government increasingly takes over responsibility for the clinics while the voluntary association concentrates on education and information and related services; and
- b) the clinic services are provided at general health clinics and are increasingly integrated into the national health service.

There are plans for such integration in Barbados as well. Integration has meant that contraceptive supplies and other family planning services have become available much more widely over the country and not in selected areas as previously. On the other hand, there is a danger of some reduction in the quality of the service as persons seeking such service must take their place with all other users of the clinics, particularly in those cases where the added burden has not yet been balanced by an increase in these clinics' staff and resources.

In most other countries in the region, there is a voluntary family planning programme which receives financial and other support from the Government. This is the case in most Windward and Leeward Islands.

The contraceptive supplies most popularly provided by these Government and assisted programmes are 'the pill', the condom, the IUCD, and especially through the Catholic Marriage Advisory Council in Trinidad, advice on the use of 'temperature' and other more advanced methods of 'natural' contraception through more accurate determination of the 'safe' period. The programmes in the various countries extend beyond the providing of advice and services at clinics. In Barbados, for example, there are in addition, an 'outreach' programme which takes information and education, services and follow-up to youth groups, church organizations, schools and other such institutions. The programmes in many of the other islands are organised along somewhat similar lines.

In addition to the contraceptive supplies and methods mentioned above, both male and female sterilization are performed in Trinidad and Tobago and will soon be available in Barbados through the voluntary programme. Amid growing demands for modification of the existing abortion laws in the region, Barbados will soon be introducing a bill to legalise abortion, while both Trinidad and Tobago and Jamaica are giving consideration to modifying their laws.

For the reasons already given, there is no official family planning programme in Guyana and the voluntary programme, started in 1974, is concerned with fostering better family life and not with contraception. In the Bahamas the contraceptive pill and other devices are provided at Government clinics and hospitals to persons who request them but because of some still strong religious opposition the Government has not formulated any official family planning policy.

Human Resources

For all countries of the Caribbean, with the exception of the Bahamas and the British Virgin Islands, there has been a remarkable twist in their human resources situation in that from being countries reportedly very short of labour and needing to import labour for much of their modern history, during the past fifty years or so, and more particularly since the end of World War II, they have become countries of massive unemployment (13-25 per cent of the labour force in most countries) and even higher

under-employment. In the case of the Virgin Islands and the Bahamas this phenomenon of a high level of under-utilization of manpower is very recent. There are a number of reasons for this "twist". One is that the plantations, in the days of the importation of labour, were interested in obtaining not an adequate supply of labour, but rather a surplus labour supply, as this assured low wages and more docile work-force. Moreover, they were interested in their surplus labour supply at sugar cane crop-time, so that in the off-season there was always high unemployment or under-employment. Added to this, more recently the countries of the Caribbean have experienced their own "population explosion" as indicated earlier and hence, particularly since the end of the Second World War the numbers requiring jobs has been increasing rapidly. Furthermore, there has also been an "explosion" of attitudes and expectations so that increasingly persons, particularly young people, are turning away from agriculture, from self-employment in marginal occupations, and in general from low-income and low-status employment, so that the availability of such jobs does nothing to reduce the high levels of unemployment.

The policy of all governments of the Caribbean has been to seek to reduce the extremely high levels of unemployment and under-employment, with full-employment as the ultimate, even if difficult, objective. To this end, governments have tried different measures, including attempted industrialization through invitation to foreign investors to set up industries in the region. This approach received considerable impetus from the successful efforts of Puerto Rico in this regard, but it has now been realized that Puerto Rico's success was in large measure associated with its special relationship with the United States, and also that in any case industrialization has not succeeded in reducing the unemployment and under-employment problems of that country. In a number of countries tourism has been encouraged as a "labour intensive" industry and one which has benefitted from political problems or political differences with the United States in previous tourist centres in the region (e.g. Haiti and Cuba). Despite these and other

efforts to create genuine employment opportunity, there has been no improvement in the employment situation, and in fact unemployment rates at the 1970 Census of Population were generally appreciably higher than at the 1960 Census. Faced with such stubbornness of unemployment, governments have attempted to provide some relief through the provision of jobs of special public works programmes. This method of course depends on the availability of government funds for special works programmes. To try to spread the employment to as many persons as possible, governments have often limited the number of days' work that can be given to one person under the scheme. Special works programmes have been particularly important in Trinidad and Tobago and in Jamaica. In Trinidad and Tobago the government has in fact instituted an "unemployment levy" on the profits of business and on the taxable income of individuals where this taxable income exceeds \$10,000 (TT) per year (approx. \$4,000 US). In Jamaica a similar measure was introduced in late 1976, and the levy is paid on taxable income exceeding \$10,000 (J) per year - approx. \$8,000 US.

These measures have provided some income to persons but have not had noticeable effect on unemployment as many of the persons employed in the special works programmes have been persons who were employed in low-income and probably low-status occupations previously. In this sense the special works programmes have probably reduced under-employment rather than unemployment. Moreover, they have tended to reduce the supply of labour for agriculture and small non-agricultural establishments and, in addition, are blamed by many for an apparent erosion of the work ethic.

In the midst of the high level of unemployment and under-employment, however, there is a serious scarcity of skilled and highly qualified manpower in most countries. For this reason permission has had to be given to employers to employ non-nationals but, as indicated earlier, this is generally tied up with a "work permit" programme aimed at ensuring that employers take active steps to train nationals to fill these posts. In addition governments have been paying particular attention to education and training programmes with the hope that it would be possible to ensure that school-leavers would have the necessary qualification to fill most of

the skilled and high-level occupations. Here the concern is as much with national needs for such persons as with alleviating the employment problems.

Education

In the post-war period, with the countries of the region achieving internal self-government and in many cases, full independence, there has been a remarkable increase in the importance of education for the masses in the view of the governments and of the people themselves. Moreover, education is now seen as a vital instrument for achieving the maximum fulfilment of the nationals and the economic and social development of the society in each country.

All of the countries have, for some time, had laws which make schooling of children compulsory at the primary level. It is generally believed that the region's achievement in the field of primary education is tolerable, although problems such as the shortage of school places and inadequate facilities in schools are among the serious problems now being faced in the light of the large increase in the school-age population in the post-war period. Throughout the region primary education for the general population was first introduced by the various Christian churches and these have continued to play an extremely important part in providing such education in most countries. In Trinidad and Tobago and in Guyana in more recent times the non-Christian religions (e.g. Hindu and Muslim) also became involved in education at this level. In all countries the Government has made large contributions to the church organizations with respect to their schools. With the increasing financial assistance and direction from Governments denominational involvement in primary education has been reducing. Secularization of the schools was completed in Guyana in 1976. The policy of all Governments in the region is to ensure that free primary education is available to and used by all children.

So far, most countries have not been involved in pre-primary education (3-5 years). Recently, the two 'socialist' governments - Guyana and Jamaica - have become involved but no other governments appear likely to become involved in the immediate future.

The principal concern in the post-war period has been to provide adequate secondary education, and other-post-primary education. Formerly the proportion of children advancing to post-primary education was very small. This has completely changed with the considerably increased demand for secondary education from the population, on the one hand, and the high priority given to it by the governments on the other. This greatly increased official concern with secondary education stems, in large measure, from the awareness that a better educated and trained manpower is essential for national social and economic development in the context of independence. The three principal objectives of policy here have been:

- a) to make secondary education available to all children of appropriate age in the shortest time possible;
- b) to enable all children to take advantage of this post-primary education by making this education free. Since such education is not yet available for all, most governments provide free education to all or most of those who attend these schools on the basis of selection through a competitive examination at about the age of 12 years;
- c) to modify the secondary education system including the curricula, to make them relevant for the society. This is particularly important in the light of the origin of this education already discussed.

Serious problems still remain in all of these areas. Because of the much larger school population it has been difficult to provide the school buildings, the facilities and the teachers to meet the demand for secondary education. In place of the complete dominance of grammar school education that existed in the past, much attention is now being given to comprehensive and other non-grammar secondary schools. Also, particular attention is being given to expanding the secondary school curricula to include technical and vocational subjects. These efforts are still far from being fully successful for a variety of reasons, one of which is the resistance to such changes on the part of the older schools and the parents.

There has been considerable expansion in University education in the region. Before 1948 all university education had to be obtained outside of the region. The University of the West Indies was set up in 1948 and the University of Guyana in 1963. The University of the West Indies now has

campuses in Jamaica, Trinidad and Tobago and Barbados, and Extra-mural departments in the other Commonwealth Caribbean countries which contribute to its support. As the campuses and faculties have increased over the years, so have the number of students receiving post-secondary education.

But the proportion of the population with university education is low, being 1 per cent or less in the different countries, and hence there is concern about increasing university attendance. At the same time, the governments are concerned at the high cost of university education, and at the tendency to over-production of graduates of some faculties, e.g. Arts and Social Sciences and the reverse in other faculties, e.g. Agriculture and Engineering. This concern is no doubt accentuated by the proneness of Arts and Social Science students and faculty at the University to be involved in political and related activities in opposition to the government in power. For these and other reasons, the Heads of Governments of the Commonwealth Caribbean at their Sixth Meeting held in 1972 affirmed the need for an assessment of requirements for trained manpower at the professional, administrative, managerial and sub-professional levels in the region in order to provide a firm basis for determining how the University and other post-secondary education facilities should be expanded. The larger countries all have institutions of technical training at the tertiary level and there is a feeling that these facilities for technical training need to be particularly expanded and developed in countries where they do not exist, while at the University it is the technical faculties (medicine, engineering, agriculture, etc.) that should be given particular attention.

KNOWLEDGE REGARDING POLITICAL PROCESSES
AND THE DEVELOPMENT AND IMPLEMENTATION OF POLICY^{1/}

There is little precise information on the extent to which the population in the Caribbean is aware of the political processes by which population policy is formulated, or of the development and

^{1/} The remainder of the paper is taken from Jack Harewood (1978b).

implementation of such policies. The evidence is that in the Commonwealth Caribbean there are a number of factors which contribute to a fairly high level of knowledge. These factors include:-

- a) the relatively high level of general education, the proportion of the population 10 years old, and over with at least 6 years of primary schooling being just over 95 per cent in 1970;
- b) the small size of the countries, the country with the largest effective size being Jamaica with its 11,000 square kilometres, as so large a proportion of the mainland countries are uninhabited;
- c) the efficiency of communication, a point related to both (a) and (b) above, and to the availability of radio to most persons throughout these countries and the availability of television to a fair proportion in the countries which have television;
- d) the tradition of political democracy inherited from Britain which requires general elections to be held about every five years and results in both governments and the non-government political parties being continually involved, but especially at election times, in providing information to the population as part of their campaigns to retain or gain political ascendancy.

Of the areas in which we are particularly interested, publicity and information is good in the area of fertility control, where there is an official family planning programme, and in the areas of employment creation and education. Where special organisations exist to encourage or direct rural development, or to organise emigration schemes publicity and public relations are again fairly good though in general this has been less than with respect to fertility control and human resources. Nationals are in general aware that there are restrictions on immigration in the many countries where such restrictions exist but since these do not directly affect nationals details of these policies and measures are less well-known.

Some indication of the level of awareness can be gleaned from a study of the participation and involvement of Jamaicans in the General Election of 1972 (Carl Stone (1974)). This study found that 82 per cent of the electorate listened to party speeches on the radio, 48 per cent attended mass political meetings, and 43 per cent read party advertisements in the daily newspapers, while 53 per cent are recorded as discussing the election

with other voters. A study in connection with the 1976 General Election in Trinidad and Tobago also indicates a high level of awareness of political issues. Since the surveys referred to relate to general elections they are not directly indicative of knowledge about the political processes relating to population policy. Furthermore, it is to be expected that awareness and involvement in political issues would be much higher at the time of a general election than is normally the case. Despite these points, the two surveys can give us some indication of this knowledge as we would expect persons with a high interest and involvement in general political issues would also be aware of specific matters of importance to themselves. In this connection, the study by Stone compares a number of the above and related indicators with the level of participation in the United Kingdom and the United States in general elections of 1964 and 1966 respectively. Apart from "watching party speeches on Television", for which the proportion in Jamaica is appreciably less than in the United Kingdom and the United States of America, the indicators for Jamaica are as high as and for many indicators significantly higher than for the other two countries.

The level of knowledge is much higher in Barbados than in Jamaica and Trinidad and Tobago because of the smallness of the island (431 square kilometres), and the higher proportion of persons with some education, while it is believed to be lower in most of the Windward and Leeward Islands.

A point worth stressing here, is that popular knowledge of the political processes or of policies does not necessarily result in popular support for or even acceptance of such policies. There is evidence that where there is popular support for a policy it is often for reasons different from those which prompted the policy. An example of this is fertility control where those governments that have adopted a fertility control programme have done so because of the national problems associated with too rapid population growth, while the population have embraced the programme because of individual and family problems related to too many children. On the other hand, policy decisions taken in the best "national interests" are sometimes

not accepted because they do not appear to be in the best "personal/family interests" of the population. One example here is the effort to increase technical education, including Agriculture at the secondary level in preference to the earlier preponderance of emphasis at the secondary education level of grammar school type education, in the interest of national "economic and social development". However, for persons of African origin, and those of Indian origin in Guyana and Trinidad and Tobago where this group is very large, grammar school education has been and continues to be the one means of getting their children out of Agriculture and other "technical" occupations into the highly-paid and high status jobs (in the professions such as Medicine and Law and in the top administrative posts in Government and large non-Government establishments) formerly reserved for the white, the half-white and the lucky black. To them, secondary education is not a means of up-grading occupations in agriculture and technical fields, but a means of getting away from them. The lesson from the above and other examples that can be quoted is that much more attention needs to be given, both by policy makers and researchers, to the values, attitudes, habits and aspirations of the population, both in terms of formulating policies which take these into account, and in terms of undertaking necessary educational and public relations programmes to change these values, attitudes, etc. where this appears necessary.

OTHER ELEMENTS IN THE "TRANSLATION" OF RESEARCH
FINDINGS INTO THE POLICY FORMULATION PROCESS

Problems relating to the "translation" of research findings into the policy formulation process in the Caribbean are not unique. They arise, in large measure, from the fact that the individuals and agencies undertaking relevant research, whether in government, the universities or elsewhere, are not usually directly involved in policy formulation or in advising on policy formulation. Furthermore, except in special cases, e.g. where the research is specifically requested for that purpose, the release of results of research do not necessarily coincide with the periods when policy is being formulated or reviewed. This means that at the

critical periods in policy formulation and review, pertinent research which has been completed may not be brought to the attention of the policy makers. Another point is that for the most part the policy makers are not persons with academic backgrounds in the particular fields and the results of research are too often presented in a form and length appropriate for the information of other academics rather than busy policy makers. A related point is that to the extent that the researcher is divorced from policy making and administration, as is often the case, the researcher usually pays inadequate attention to factors outside of the research which are vital for the policy maker administrator and for this reason the research findings tend to be unrealistic in the eyes of the policy maker.

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SOME ASPECTS OF MANPOWER PLANNING IN
JAMAICA - ISSUES AND PROBLEMS

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Introduction

The primary objectives of the Manpower Planning and Utilization process are the provision of education, training and productive employment for all persons requiring such services.

Several attempts have been made by Government, to establish institutions and to enact a policy to arrest and solve the persistent problems of the planning training and utilization of human resources.

Unfortunately the success of Manpower Planning in Jamaica has been limited because the planning system which evolved from the colonial period put very little emphasis on manpower planning as an integral part of social and economic planning. As a consequence the collection of sufficient manpower statistics was neglected. In addition, the meagre financial resources has led to insufficient technical expertise and tools with which to attack the problem. Moreover, the lack of systematic coordination of the various agencies and programmes resulted in a high degree of duplication, waste, disorganisation and an ineffective evaluation and feedback system.

As a consequence, conditions of insufficient knowledge of the labour market, training needs and other supply and demand developed. The combination of all these problems made comprehensive and integrated manpower planning in Jamaica a myth.

This paper deals essentially with Jamaica's experiences in manpower planning, the problems encountered in the process and measures taken to correct the problems.

Section I deals with the methods used in forecasting manpower requirements. Section II outlines Jamaica's experiences and the problems encountered - An evaluation of the 1970-75 manpower projections and PREALC study presented. The problems of manpower data availability and utilization are discussed in section III. Section IV examines the main issues which led to the establishment of the Manpower Planning, Training and Employment Project (M.P.T.E.). The trend of future manpower planning activities are highlighted and conclusions drawn.

SECTION I

MANPOWER PLANNING PROCESS AND METHODOLOGY

There is no internationally and rigidly accepted definition of manpower planning. Whatever the differences in definition, or level of planning, it is clear that manpower planning is concerned with matching manpower supply with demand. In Jamaica, at the moment, manpower planning is not fully integrated with the overall development planning process of the country.

The issues related to manpower planning process are diverse. They range from manpower assessment and forecasting to Manpower Action Programmes. The manpower action programmes are dealt with in section IV. The manpower assessment and forecasting is divided into several components - The manpower assessment component which deals with Labour Force and Training surveys of households and institutions respectively on the supply side; and on the demand side, manpower assessment involves a survey of large and small establishments and the public sector. In order to keep the paper within reasonable limits, these issues won't be discussed here. Instead, attention will be focussed to manpower forecasting methodologies.

METHODS OF MANPOWER FORECASTING IN JAMAICA: A REQUIREMENT APPROACH

In Jamaica, there are four methods frequently used to determine manpower requirements:

- i. Manpower requirement method
 - ii. International comparisons
- Other supplementary methods are:
- iii. Direct questioning or Direct estimates of future needs.

iv. Special studies of specific industries

(i) Manpower Requirement Method

The manpower requirement approach is the most supported method of manpower and educational planning, since it treats education as a source of high and middle level manpower and employs rather simple techniques for calculating the skilled labour required to accomplish specific development targets. Here the quantity of skill input per unit of output is used in conjunction with the targets for output growth in projecting future requirements for each skill in each sector. Furthermore, the relationship between absolute labour input and output can be determined, subject to the assumptions regarding magnitude, direction and nature of productivity changes.

(ii) The Second Method is the International Comparisons

This method is used to circumvent the problem of data availability in the local situation. The theoretical justification of the use of data from one country to another is that productivity in an industry is a function of the occupation structure of the same industry regardless of location or national boundaries. This method is particularly used for forecasting the future requirements of new industrial sectors.

(iii) The Direct Estimate of Future Needs

This method consists of appraising employers' anticipations for demand of occupations in their establishments. This type of analysis is used for short-term planning, and, at best, serves as added information to check on other types of projections.

(iv) The Analytical Studies of Special Industries

This method is directed at manpower planning at the micro-level. This method is limited to a few industries like Automobile, Electronics, Building etc. These studies are used by the Vocational Training and Development Institute (V.T.D.I.) to develop training programmes to meet the manpower requirements of those industries.

Since Development Plans are not detailed enough to include plans at the plant level, this method is not extensively used at the macro manpower planning. The methodological issues outlined above, form a concrete basis for describing and analysing the Jamaican Manpower Experiences - both at the micro and macro-level.

SECTION II

THE JAMAICAN MANPOWER EXPERIENCES - MACRO-LEVEL

There have been three (3) major attempts to deal with the Manpower Planning in Jamaica. The first major Jamaican Experience in manpower planning at the macro-level dates from the late 60's during the preparation of the 1970-75 Five Year Development Plan. The second attempt was in 1976 by PREALC* in collaboration with the National Planning Agency. The third attempt started in 1978 with the establishment of a manpower planning, training and employment project with the objective of establishing an integrated and comprehensive manpower planning system. The details of the activities of the project are dealt with in section IV.

(a) The Five Year Development Plan 1970-75 Experience

The 1970-75 manpower planning exercise aimed at forecasting manpower requirements and supply in the target year in 1975 according to crude occupational categories and industrial sectors. There were eight (8) occupational groups identified for a sixteen (16) sector breakdown of the economy.

Manpower requirements for the year 1975 were forecast for the major industrial sectors by applying alternative output growth targets to an occupational skill matrix of labour requirements conducted by the Manpower Research Unit of the Central Planning Unit (now the National Planning Agency).

* PREALC is an international organisation whose headquarters are in Chile and specialises mainly in studies related to Labour Force in the Latin American Countries. This organisation is linked to the International Labour Organisation.

The data was processed, i.e. classified and tabulated within the Agency. Data for new industries expected was derived from other sources. Projections of government sector requirements were done mainly by extrapolating observed trends.

Manpower supply 1975 was forecast on the basis of the composition of the Labour Force in 1968 as provided by the Department of Statistics on the basis of household surveys. The forecast was based on assumptions regarding attrition due to migration, death and retirement from the Labour Force, accessions to the Labour Force based on alternative projections of population, and assumptions regarding Labour Force participation rates in the acceding age groups. The occupational/skill composition of the acceding persons were estimated on the basis of the expected output mix of various educational institutions under assumptions of normal growth of these institutions and of the skill mix of returning migrants.

The resulting forecast allowed the estimation of the gap between jobs and persons wanting work, the imbalance between the requirements and availability of various skills, and hence the gap to be filled by increasing the supply through training or by bringing in people on work permits. These projections were not achieved without problems.

Problems:

There were many problems and short-comings experienced in projecting manpower requirements. These are described as follows:

1. The Labour Force Survey used a different occupational skill classification from the Manpower Survey which made it necessary to make adjustments before requirements could be compared with supplies. ^{1/}

^{1/} In the absence of a standardised classification of occupations the problem was and still is of great significance. We have already experienced the same problem in the pre-testing of the Manpower Survey Questionnaire in August/September 1979. In the PREALC Study the same problem was reported. At present efforts are being made to standardise the classification of occupations.

2. Manpower Requirements were not converted into full time equivalents nor were those wanting jobs asked to indicate how many hours they were willing to work. This resulted in the projection of a job gap which did not say anything about the under-employment.
3. The occupational structure of the Labour Force forecast was very crude due to the imprecision in matching educational output and occupational/skill categories. Furthermore, they failed to take into account on-the-job training and other facilities for skill upgrading.^{1/}
4. The assumptions about productivity change were admittedly unrealistic because "it was assumed that productivity change would lower the ratio of labour to output without changing the skill mix". Furthermore, capital/labour ratios were assumed fairly rigid in that while productivity change tended to be associated with rising capital/labour ratios, the ratio of capital to particular skills required were changed differently for all skills.
5. Finally, no account was taken of the changing skill shortages on the required skill mix.

(b) The second manpower planning experience was in 1976. This was the study by PREALC. This study is fairly comprehensive and brings out clearly a number of problems any manpower planner in Jamaica should expect in attempting to use sophisticated methods which demands a gamut of detailed manpower data.

^{1/} This is a very serious problem and it may have contributed to the inaccurate projections in labour force supply for the target year 1975 - see section on evaluation below: This problem has been corrected. Information on on-the-job training has been collected and will be incorporated into the manpower planning and forecasting exercises.

Methods Used By PREALC In Forecasting Manpower in Jamaica (1976)

According to the PREALC Study, the methods used for projecting future manpower needs for Jamaica were based on what they called a mixture of elements of the so-called Mediterranean Region Project (M.R.P.) approach as well as historical trends and international comparisons.

The basic assumptions were that "the growth rate of each occupational group in each industry could be determined for the time horizon and that the rates of growth of employment by industry, the rate of labour productivity by industry, and the elasticity that relates to the proportion of a specific occupation group in the employment level of a specific industry to the assumed change in labour productivity in that industry were known. "In other words, before the application of the above methods, the growth rate of employment by industry, average labour productivity and the elasticities by each occupational group by each industry must first be determined. (See Appendix A for projection equation). They further assumed that "the natural growth rate of each occupational group i in sector j could be compounded by the arithmetic sum of the growth rate of employment in sector j plus a component that results from multiplying the corresponding elasticity for occupational group i and industry j , by the percentage change of labour productivity for sector j ." The derived elasticities would then be used to estimate manpower requirements by each occupation i and industry j .^{1/}

Specific growth patterns of value added and employment by detailed sector and occupations were used to project manpower required in the target year. The occupational profile was estimated by using the Zymelman equation (See appendix A for details of the equation).

^{1/} The type of elasticity coefficients are claimed to reflect the influence of technological progress at the industry level, measured, by the rate of change of labour productivity on the rate of change of requirements of a specific occupational group. These elasticities could be derived by relating time series on labour productivity, both by sector and occupation.

Problems

The basic problem was the determination of the elasticity of occupational group i in industry j ^{1/}. The times series required to derive the b_{ij} s are scarce and where available were too aggregated; and where disaggregated, for instance, from the census data lacked consistency. All these problems forced PREALC to use b_{ij} s from international sources ^{2/}. The second problem was that there were neither long, medium nor short term plans/targets available at the national level. The alternative used, for example trend in output, employment and occupational structure by sectors during the intercensal period was full of uncertainties. Equally important, Jamaica has not yet developed a standardised classification of occupations, therefore, resulting in the occupations with different meanings and interpretations. Finally data used was derived by interpolation based on the assumed growth rate in the past.

Since there is no standardised classification of occupations, some adjustments were made on certain groups of occupations based on subjective judgement, which is subject to individual interpretation. The methods used in projecting manpower supplies too, were constrained tremendously by the general lack of detailed data.

1/ The estimates of the b_{ij} s forms the basic problem. They are derived by relating time series of occupational structure to time series on labour productivity, both by sector and occupational. Since time series by detailed occupational groups and industry are scarce - therefore b_{ij} s were derived from international sources. This made the whole exercise a suspect since the b_{ij} s are the basics of the investigation.

2/ Unfortunately the PREALC does not explicitly indicate the countries where data was obtained. But the study mentions that the b_{ij} s were successfully used in the Dominican Republic. It is questionable whether the problems existing in the Dominican Republic were or are similar to those in Jamaica at that time. Moreover we do not know when these b_{ij} s were applied to the Dominican Republic in order to evaluate the success or failure of the methods in that country. These are areas of doubt which are subject to criticism.

On the supply side, the quantitative historical variables under investigation were:

1. Labour force by occupation
2. Participation rates by occupation, age, groups and sex
3. Migration by occupation
4. Historical trends of enrollment
5. Transition rates
6. Female participation rates in higher education
7. Drop-out of the educational system
8. New entrants into the labour market
9. Withdrawals from labour force by death and/or retirement

It should be noted however, that detailed manpower data by occupation on these variables are lacking. Therefore data were generated using linear programming techniques. With the interpolated data, regression analysis techniques were applied to estimate future manpower requirements.

(c) The Manpower Planning, Training and Employment Project was established within the National Planning Agency in 1978 in partial response to the problems of manpower data availability. The details of the project's purpose and the spectrum of activities undertaken are discussed in detail in section V.

A brief quantitative evaluation of the manpower projections for the 1970-75 Development Plan showed mixed success. The projections for the demand for manpower were generally accurate. The relative accuracy ranged between 2% - 15% of the target period. The supply side however, in spite of the broad occupational groups, was inaccurate. The inaccuracies varied between 25% - 40% of the target year.^{1/} The PREALC Study's projections can be evaluated in 1981.

^{1/} The Labour Force Survey 1975 by the Department of Statistics were taken as the actual figures. The projected figures were derived from the 1970-75 Development Plan. Actual supply is derived by adding total employed to unemployed by occupation while the employed represented manpower demand by occupation.

The problems discussed here are to a large extent related to the problems of data availability, the level of aggregation, inconsistency in the definitions, and occupational grouping. These and other problems are discussed in detail in section III.

SECTION III

Manpower Data Availability and Utilization

From the above discussion it is clear that any method that demands a gamut of detailed manpower data, at present in Jamaica, is likely to experience problems. A selection of a method is usually dictated by manpower data availability. Manpower Statistics have been one of the most neglected areas of statistical data collection. The present basic statistical data is inadequate for any but the most rudimentary manpower planning. Before planning with any degree of sophistication can be undertaken, it is necessary to develop a manpower statistics programme to provide the primary inputs.^{1/}

^{1/} The NPA is developing a comprehensive manpower statistics programme. In that programme the top priority manpower statistics to be developed will be those used in: (1) employment planning; (2) projections of manpower requirements by occupations; (3) estimation of current and projected training needs; (4) planning of training systems and training projects; (5) developing occupational profiles of individual industries; (6) estimation of productivity trends; (7) regulation of wage rates for particular occupations and industries; (8) assessment of losses or gains for the skilled manpower through migration.

Aggregation of Manpower Data

A brief search into manpower data availability has shown that most, if not all, manpower data published by the Department of Statistics (D.O.S.) are highly aggregated. While aggregated labour market data at major occupational and industrial group level is required for long range planning, there is an equally urgent demand by training, placement, counselling, employment and planning institutions, apart from individuals, for very specific disaggregated data at minor occupational group levels for short range market adjustment.^{1/}

Apart from the level of aggregation, the inconsistency in the cross classification of the major data elements need serious consideration. For example in 1972 Labour Force Survey, no occupational classification by industry was given. Deaths were not cross-classified by occupations between 1965-1970.^{2/} This creates a problem for the compilation of time series from these sources. These two examples do not seek an infinite cross-classification of manpower data but rather a prioritising of these cross-classifications in accordance with the needs of manpower data users. The problem is exacerbated by a lack of standardised definitions and classification systems. L. Taylor found the similar problem with data in the labour force survey.

^{1/} Therefore if the seminar would wish to discuss the issues related to comprehensive manpower planning, training, employment and methodologies related to manpower forecasting, then emphasis should not only be put on the significance of dis-aggregated data but also on other limitations such as manpower personnel, funds for developing manpower statistical programmes etc. This will facilitate manpower planners to meet the challenges of the changing needs of the training, education, placement and employment institutions as well as individuals.

^{2/} Information on death by occupation is required in the elimination of manpower supply by occupation. This information originates from the Registrar of Births and Deaths. Therefore, there is an urgent need to coordinate all sources of manpower data.

We can do no better than quote him:

"The total labour force consists of employed and unemployed persons, but the data presented in the Labour Force Surveys is such that an independent investigator has considerable leeway in employing his own definitions and grouping the data accordingly"^{1/}

These observations were made in 1974, nevertheless their validity is unquestionable today. There are, however, a number of notable improvements that have been made. Where vagueness and imprecision exist, no effort has been spared for correction; and where a change of definition occurred, or vagueness and imprecision persisted, or still persist, data users have been cautioned.^{2/}

^{1/} The size of labour force is determined by the definition that relates to all persons age 14 years and over not attending school full time during the survey week; and who (1) worked; (2) did not work but had a job; (3) had no job but were actively seeking work; and (4) had no job, did not actively seek work but wanted a job and was available, (discouraged worker); See report on Human Resources and Manpower 1974. The unemployed are defined by (3) and (4) above. But this definition is controversial in the purview of some authorities in the area of manpower planning. All these definitions were not used consistently until after 1968/69. See pp 4 and 5 1973; p. 8 1974, Labour Force Surveys.

^{2/} See Labour Force Surveys 1968/69 p. 2, 1973 p.2. Efforts in correcting vague and imprecise terminologies, have transcended beyond definitions to the area of sampling. A scientific sample selection was introduced in 1968/69 Labour Force Survey under the continuous social and demographic survey to replace the unscientific samples that existed.

Such warnings as these below are not uncommon throughout the labour force surveys:

"Labour Force is a highly volatile and mobile entity and is very difficult to measure. It is important, therefore, when comparisons are being made, to take into consideration the concepts which have been employed at each enquiry along with the period during which each survey was conducted."1/

Equally important is the standardisation of definitions of occupations.

Lack of Standardised Definitions of Occupations

The lack of standardised definitions of occupations presents a lot of problems especially when dealing with data elements cross-classified by occupations. Since most manpower data are cross-classified by occupation, it is not difficult to imagine the magnitude of problems involved during the coding and tabulation of data.

The rudimentary classifications so far used in Jamaica are based on the International Standard Classification of Occupations (ISCO) developed by (ILO). The places using modification of ISCO include the Department of Statistics, for the Labour Force Survey and population censuses, and the Ministry of Labour's Employment Exchanges and Ministry of Education for counselling. The NPA used the ISCO without any modification when conducting a manpower requirements survey of the larger establishments in 1967.

The problem with the ISCO is that, as an international classification, it was not designed to suit the need and circumstances peculiar to any one country. Where certain industries exist only in a few countries and are not much known elsewhere, the ISCO is unlikely to include the occupations involved. Again in different parts of the world there may be variations in the set of tasks that make up the particular occupation.

1/ See Labour Force Surveys 1968/69 p.2, 1973 p.2. Efforts in correcting vague and imprecise terminologies have transcended beyond definitions to the area of sampling. A scientific sample selection was introduced in 1968/69 Labour Force Survey under the continuous social and demographic survey to replace the un-scientific samples that existed.

Above all, the ISCO as an international classification cannot attempt any ordering of occupation according to educational and training requirements, physical demands and working conditions, which makes it less useful for training, planning, placement purposes, counselling and personnel management.

The ISCO was in fact intended to facilitate international comparisons of occupational data originally organised according to national classifications which may be designed to be convertible to the ISCO. Actually, the ILO recommends that each country should try to develop its own occupational classification. The very sophisticated "Dictionary of Occupational Titles" developed by the Americans is impracticable for general use in Jamaica.

In response to these problems, the NPA in collaboration with the Ministries of Education, Youth and Sports, Labour, Public Service and Department of Statistics has just completed the updating of the D.O.S. list of occupation titles. The next step is the development of brief definitions for each of the occupational titles as perceived in Jamaica. This will act as a provisional coding manual until the National Dictionary of Occupational Titles based on the list is developed. In other words, the first step towards the solution of the problem is completed. So far we have examined the problems of aggregation and the lack of standardised definitions and concepts, the question is how reliable is the data collected under all these problems? The issues related to manpower data reliability and utilization are discussed in the next section.

Manpower Data Reliability and Utilization

The significance of manpower data reliability as related to manpower planning is unquestionable because the utilisation of any unreliable data, be it manpower data or not, leads to the production of unreliable information thereby defeating the whole purpose of manpower planning. Therefore a clear understanding of data unreliability beforehand will help to determine how the data may be used, and the scope and accuracy of the conclusions that may be derived.

According to the proposed manpower statistics programme, the only reliable and continuous sources of manpower information are:

1. the Labour Force Survey conducted by the Department of Statistics;
2. the monitoring of the annual output of training institutions in the country which is done by the National Planning Agency;
3. a quarterly survey of employment, earnings, and hours which covers the larger establishments in mining, manufacturing, construction and Jamaica Public Service; and
4. the vocational tracer study information on employment of new Secondary School graduates.

Historically, labour force surveys, prior to 1968, with the exception of the 1960 population census, are said to be unreliable. The basic reason stated is "the misgivings about the reliability of the samples which formed the basis of the investigations."^{1/}

Regarding the discreditation of the population censuses prior to 1960, it is contended that labour force data obtainable from census reports had, even up until 1943, been somewhat inexact and not directly comparable because the concepts applied were somewhat vague and imprecise.^{2/}

^{1/} The Labour Force Survey 1968/69 seems to imply also that other population census data are unreliable. Therefore, if this is true then 1844, 1861, 1871, 1881, 1891, 1911, 1921 and 1943 population censuses data should be used with caution. In any case, it is debatable whether it would be worth the risk of using the unreliable historical series beyond 1960.

^{2/} These problems led to the redefinition of the vague and imprecise concepts and re-designing of the sample, and the subsequent establishment of the continuous Social Demographic Survey CSDS, in 1967/68. See pp 20-25 of the labour force survey report 1968/69.

From the above information, the reliable labour force data dates from 1968/69 surveys and those sources cited above.

Manpower data utilization is a complicated function of the manpower data user. In general, however, any manpower data user would like to see that data: (1) are in proper form, e.g. level of disaggregation; (2) available at the right time; (3) have sufficient number of observations to permit analysis; (4) cover sufficiently the observed phenomena; (5) are reliable; (6) are comparable with other data from different or same source(s). There may be other characteristics expected of data availability, such as cross-classification of data elements, but all these are subjective issues related to the methodology used and the objectives of the planner.

One observation that should be noted however, is that although data adjustment is a normal function of a data analyst, nevertheless, excessive data manipulation should not be encouraged to cover data gaps, as it contributes to the problem of data unreliability, thereby undermining the rationale of manpower planning. It is therefore preferable to use a simple method to suit the available data than to employ a sophisticated method in the hope of manipulating the data to suit the method or model. With this observation, let us examine the issues related to the Manpower Planning, Training and Employment Project since it was established in direct response to all these problems.

SECTION IV

The Manpower Planning, Training and Employment Project (M.P.T.E.)

B. Overview of the Project - Its Purpose

The Manpower Planning and Employment Project aims at establishing an integrated and improved manpower development and utilization system responsive to the labour market needs and planning*goals of the country. This system will provide inputs aimed at:

- a. improving manpower data gathering on employment availability and seekers;
- b. upgrading the efficiency of occupational skill-training, vocational guidance and job placement services, making them more relevant to labour market needs.

In general the objective of project activities is to upgrade and coordinate the country's manpower planning, training and employment service activities, eliminate duplicative functions and increase the relevance and efficiency of its manpower related services. Ultimately, the goal is to increase the employment productivity. Furthermore, the Project is an inter-agency effort coordinated by the National Planning Agency and involves five other government agencies - the Ministry of Education, Youth, Sports and Community Development, the Ministry of Labour, the Department of Statistics and the Ministry of Finance. Within this inter-agency project are a series of programmes carefully selected to draw all manpower related activities into a comprehensive, integrated system. Appendix B gives a clear outline of the activities of the project and agencies. The action programmes are designed to meet the shortfalls and dispose of the surplus skills. Diagram 1, gives the dynamics and interrelationships of these activities which aim at improving manpower utilization in the economy.

Essentially, the project activities involve -

- a) the development of techniques and instruments for upgrading all manpower related programmes and services;
- b) training of staff;
- c) provision of guidelines and recommendations for future planning and coordination of manpower activities.

The objectives of each of these activities are outlined in (additional paper to be distributed at seminar.

CONCLUSION

The paper has dealt with some of the major issues and problems influencing manpower planning in Jamaica. The general problems experienced in other fields of planning also apply to planning in the field of manpower and are at times, exacerbated by the generally weak form of integration of manpower plans and programmes into the national planning process.

If meaningful manpower planning is to be achieved, then attention should be directed to the development of a sound reliable statistical manpower data base. In addition, the needs of Data Users and producers should be carefully considered, if the manpower information which is difficult and costly to collect is to be maximised in the planning process.

The manpower planning experience in Jamaica has shown that the demand for certain skills have not always been balanced by occupational supply. This is further manifested in the twin problem of skill shortages existing alongside high unemployment rates - partially the result of a mismatch between demand and supply. Moreover, training institutions have been operating on reasoned guesses as to the kinds of demand of the country. Furthermore, previous attempts at solving these problems have been hampered by (i) an inadequate manpower statistical base (ii) lack of systematic coordination of activities and (iii) meagre financial resources.

Consequently, the Manpower Planning, Training and Employment Project is an attempt to address the above problems and to integrate, more fully, manpower planning with the development planning process. This will be achieved through systematic coordination of all manpower related activities, improvement of the manpower information base, the development of projections aimed at improving the demand and supply match, upgrading techniques and instruments of occupational skill training, as well as improving job counselling and placement service.

It is hoped that the above efforts will greatly assist the country in ameliorating some of its problems related to labour productivity, unemployment and manpower development and utilization.

APPENDIX A

The Zymelman equation used is written as:

$$D_{it} = \sum_{j=1}^n (lij)_{t_0} e^{(bij rp_j + rLj)t}$$

Where D_{i_t} = the demand of occupation i in period t in absolute numbers.

rp_j = the rate of change of average productivity in industry j.

Lij = the absolute number of occupational group i working in industry j.

Lj = the absolute number of total persons employed in industry j.

Qj = value added of industry j.

B_{i_j} = elasticity coefficient of occupational group i in industry j.

Taking a derivative of equation $\text{Log } \frac{Lij}{Lj} = \log + bij \log \frac{Qj}{Lj}$

With respect to time, it can easily be shown that for each percentage increase in average productivity of industry j the proportion of occupational group i will tend to increase bij time one percent.

so that $rLij = eLj + rp_{i_j}$

where $rp_{ij} = bij \frac{dQj/Lj}{Qj/Lj}$

where rp_{i_j} = the rate of change of the proportion of occupational group i in industry j.

rLj = the rate of change of the employment level of sector j.

$rLij$ = the rate of change of the absolute number of persons in occupational groups i in industry j.

thus $rLij = rLj + rp_{i_j}$ states that the growth rate of persons in occupational structure rp_{i_j} plus the growth rate of total employment in industry.

COUNTRY PAPER - APPROACHES
TO MANPOWER PLANNING IN GUYANA

by Clarence Blue
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Introduction

The problems of manpower and employment planning and policies within the Guyanese economy over the last few decades has to be understood within the context of a series of competing objectives which the socio-politic-economic development policies of various regimes consistently sought to achieve. Such objectives as a very rapid rate of economic growth, the maintenance of a minimum critical level of foreign reserves for balance of payments management, the achievement and maintenance of a given level of price stability, and even the achievement of full employment at reasonable standards of living within a short period of time, have all been put forward at some point as targets for development policy. However, because of the interdependent nature of many of these objectives it has always been necessary to rank them (implicitly or explicitly) so as to minimise the impact on the economy's general welfare over time. This has meant that the manpower and employment planning and policy objective has not always been achievable. For instance, when a certain critical level of say balance of payments surplus could not be maintained, the manpower and employment planning and policy objectives were revised downwards or abandoned altogether. Consequently, the impact of the management of these macro variables on the labour market, must be constantly borne in mind.

PART I

A Statistical Outline and Structure of the Guyanese Economy

Guyana (formerly British Guiana) is located on the north eastern tip of the South America continent and occupies a land area of 83,000 square miles. Significantly enough and mainly because of colonial domination, it is the only English-speaking territory in the whole of South America and traditionally had closer economic and cultural ties with the English-speaking Caribbean.

The current population is estimated at a little over 800,000 people of which a significant proportion is young persons under 25 years. The population stood at 560,000 persons in 1960, giving an annual growth rate of just under three percent. The per capita G.D.P. in 1970 stood at approximately \$700G. Current estimates indicate that this figure has almost doubled. Estimates of labour force in 1965 and 1970 were of the order of 175,000 and 177,000 respectively with the corresponding unemployment rates of 21% and 12% approximately. Figures from the 1977 labour force survey are not yet available. In passing, it is instructive to note that the statistical base for employment and economic planning leaves much room for improvement.

Over time, the growth in the Guyanese labour force has been much lower than anticipated and this has had serious implications for labour force participation and out migration.

Structure of the Guyanese Economy:

A knowledge of the structure of production and employment in Guyana are also crucial for an understanding of the manpower and employment policies pursued by Government. Here, total production is dominated by the performance of the Sugar, Rice and Bauxite industries. Together they currently contribute over 30% to G.D.P. and account for nearly 90% of exports. Moreover, their contribution to employment is of the order of 33%. The structure of the labour force is also heavily weighted in favour of the agriculture and service industries with a significant proportion consisting of unskilled and semi-skilled workers. By contrast the manufacturing sector is very small by the three criteria set out above, namely - its contribution to G.D.P., exports and employment.

It is therefore very evident from the foregoing that a major task of development policy, over the years in Guyana, has been concerned with attempting to transform the economy - to diversify the economy and to try and reduce the heavy dependence on a few exports; to provide the institutional setting and other infrastructure and last but not least, to provide the necessary skills and other high level manpower if certain goals were to be realised. Consequently, employment creation, in many instances, was only pursued in so far as it was likely to contribute to the achievement of these changes.

PART II

APPROACHES TO MANPOWER AND EMPLOYMENT PLANNING

Review of the impact of early economic policies on employment of Guyana's manpower resources

Prior to the achievement of independence in 1966, economic development policy placed heavy emphasis on agriculture and the development of the rural, infrastructural works such as roads, sea defence, and drainage and irrigation. At this stage two additional characteristics of Guyana's economy may be noted. These are that the coastal area bordering the Atlantic seaboard and covering about 240 miles, is below sea level and over 80% of the population is located on this thin coastal strip, which constitutes only about 4% of the total land area. Moreover, the interior soils though very poor for agriculture are potentially rich in minerals and there are vast timber, fishing and water resources.

Employment generation in this period nevertheless has been achieved mainly through the absorption of vast numbers into peasant agriculture, mainly rice and the employment of large numbers on various public works projects. In the meanwhile Government had also pursued a policy of expanding the civil service to take care of the aspirations and expectations of young school leavers who by virtue of their higher education had come to snob jobs in the agricultural sector. On the other hand, the private sector which was dominated by foreign interests in sugar and bauxite were left to absorb the rest of the labour force into Industry and Commerce.

As can be expected, this policy did not provide a solution to the employment problem especially in the urban areas where a growing informal sector was developing much in the manner described by Lewis. - Many young school leavers and also older workers not being able to find jobs in the modern urban sectors have had to content themselves with selling their services for whatever price it could fetch as hucksters or in the small retail shops, mechanic workshops and other very small businesses whose viability depended upon the payment of a very low wage.

These results were in part due to Government pursuing a policy of rapid economic growth without due regard to careful employment and manpower planning. The implicit assumption that the pursuit of economic growth per se would lead to a satisfactory solution of the employment problem was misplaced.

During the late 1960's and early 1970's a growing awareness of the dissatisfaction of the masses with the distribution of the benefits of economic growth led to significant changes in policy, in an attempt to deal with this problem. A greater emphasis was being placed on self-reliance and other attitudinal changes and the provision of basic needs of the masses. Consequently, the elaboration of certain basic needs objectives such as feeding, clothing and housing the nation subsequently led to many lower income groups being able to own their own homes with significant short-term consequential effects on employment and the diversification of food and agricultural production in general.

This trend gained momentum during the early 1970's following on a continuing but growing dissatisfaction with the contribution of the private sector to development and the employment and basic needs strategy. The policy of transformation was henceforth to continue with a socialist framework with Government and co-operative take-over of the major private sector agencies. This resulted in subsequent Government control of over 80% of the economy and subsequently led to the expansion of the basic needs to include free education for all citizens.

Unfortunately however, these policies came at a time when there was a major upheaval in the international monetary system, coupled with the oil crisis and a depression of the prices of Guyana's main foreign exchange earners. Consequently, the significant employment benefits which were likely to flow from such policies and in particular the Hydro Power project have had to be postponed for the future.

EARLY APPROACHES TO MANPOWER PLANNING IN GUYANA

Laissez-Faire

While the identification of a systematic and consistently applied approach to manpower planning in Guyana over the last twenty-five years is in itself a difficult exercise, the problem is compounded by the additional difficulty of identifying, even at a single point in time, a consistent approach, at both the macro and micro levels, by the principal agents on both the supply and demand side of the labour market.

The initial approach to manpower planning in Guyana relied more on independent action at both the macro and micro levels by all agencies within the labour market in the hope that with the guide of the "invisible hand" there would automatically result a satisfactory balance between the supply and demand for labour in general and skills in particular. This approach was very fashionable in the colonial period when in the final analysis the mother-country provided a ready solution by way of absorbing migrants or injecting needed funds.

Autonomous action was often undertaken by and within the following institutions and institutional arrangements on both the supply and demand side of the labour market. On the supply side we have:

- (a) The formal education and training system which attempted, the initial and terminal preparation of individuals via, the primary, secondary, post secondary and technical schools for the world of work and the improvement of the quality of workers in the labour force. The principal institutions here were:-
 - (i) The Ministry of Education with its formal school system, university and technical and craft training centres.
 - (ii) The Public Service Ministry with its facilities for training and retraining, with special emphasis on upgrading and improving and transforming manpower and executing job evaluation activities.
- (b) The Ministry of Labour and the employment exchange with responsibility for recruitment and placement, job counselling, labour management relations, occupational safety and labour standards, minimum wage legislation and policy supervision of wage, fringe benefits and other working conditions, negotiations, incentives, productivity, health and old age protection.
- (c) The national insurance scheme with responsibility for pensions, sickness and workmen compensations and other insurance benefits.

- (d) The personnel sections within ministries as well as in enterprises both within and without the Public Sector with responsibilities for recruitment, on-the-job and other training and other aspects of company manpower planning.
- (e) The statutory recruitment agencies like the Public Service Commission.
- (f) The Trade Unions, who in an atmosphere of collective bargaining, exert an influence on both the wage rate and the demand for labour.
- (g) Other training institutions, either in industry (like the Guymine and Port Mourant Training Schools and the Critchlow Labour College), or those operating autonomously like the Guyana Management Development and Training Centre.
- (h) The Immigration Department within the Ministry of Home Affairs with responsibility for external migration; and
- (i) The Overseas Recruitment Unit within the Office of the Prime Minister.

On the demand side we have -

- (i) The Ministry of Economic Development with responsibilities for project selection and articulation of development plans which were supposed to determine the long run need for labour and skill requirements in particular. In recent times, the State Planning Commission has been added as part of the planning arrangement. In this exercise, the Ministry was supported by the major data gatherer, the Statistical Bureau, which provided a limited data base to inform manpower planning decisions. Major data support was provided by:-

- (a) the population census and fertility surveys;
- (b) the intermittent Manpower and Labour Force surveys and establishment enquiries;

- (c) consumer price indices surveys;
 - (d) wages, hours of work and employment statistics;
 - (e) participation rates;
 - (f) G.D.P. and National Income data.
- (ii) The Ministry of Finance and the Central Bank with responsibility for the manipulation of policy instruments which determine variations in employment and its composition in the short-term and perhaps even the longer term. The principal tools in these institutions having an impact on employment creation are:-
- (a) the fiscal and tax policies;
 - (b) monetary and credit policies;
 - (c) foreign exchange and tariff policies, etc.
- (iii) The various public and private sector enterprises and institutions which utilise labour.

The Preoccupation with Unemployment

Following on from the above, economists, statisticians and manpower planners had subsequently identified a major analytical approach for dealing with the problems of our manpower resources and this was to focus on the level of employment, unemployment and underemployment using a Labour Force concept. Given this framework, the analysis of the manpower planning problem tended to follow some of the approaches adopted in the literature. In one instance a case was made out to support the arguments of the structuralist school who favoured an active manpower policy to deal with the problems of deficiency in the structure of production and employment. In other instances the proponents of arguments in favour of a "deficiency of aggregate demand" as a major cause of unemployment and underemployment held sway. In yet other cases, arguments were put forward in support of the advocates of Marxian unemployment (i.e. a shortage of capital relative to the size of the labour force) as the major cause of the problem.

Given some preoccupation with the second approach articulated above, it is clear that the approach to the manpower problem de-emphasised the vexed question of skills and focussed more on the numbers to be employed. A solution to the numbers unemployed was always seen to be a solution to the skills problem.

The persistence of high levels of unemployment within Caribbean economies had subsequently led to the de-emphasising of the focus on the level of unemployment and gave way to a new preoccupation of manpower plans - it was with finding the labour to meet production needs. One, henceforth, proceeded on the assumption that there was always enough labour with the appropriate skills to meet the demand. Even if there was a temporary shortage of skills the market mechanisms were supposed to operate to ensure a speedy correction of this imbalance. In essence the preoccupation in a "Lewis" sense appeared to be more with the transfer of enough labour from the subsistence sectors to meet the demands of production rather than with the level of unemployment.

The Demand Output based approach versus the supply side approach

The general approach to planning in Guyana at this time also emphasised:-

- (a) The growth of output to the detriment of the labour mix in production; and
- (b) The need to maintain external balance.

In essence, neither the budget nor the development plan seriously attempted to synchronise the rate of job creation flowing from projects, etc. with the level of unemployment. This is perhaps explained by the shortage of capital to develop resources, given the technological mix and the population growth rates.

The general approach then, from the side of demand type institutions was one which said that given our production targets, what amount of labour can we utilise and in what categories? On the supply side, the general approach tended to react to:

- (a) The unemployment problem: if supply type institutions perceived that unemployment of people was due to lack of training or skill, the traditional response was to suggest more training and training institutions. On the other hand, if the problem was perceived to be one

of a general shortage of jobs self-employment was normally emphasised. However, given the allocation of scarce funds to other priority activities, the use of self-employment as a general solution met with little success.

- (b) A perceived shortage of skills: here training may be the response when in fact the source of the problem may be the remuneration structure.
- (c) The social demand for education: if people and politicians perceive that the gateway to a better life is bound up with higher levels of education and training, the numbers educated and trained for various occupations may bear no relation to the absorptive capacity of the economy.
- (d) The structure of wages and incomes: young people in planning their careers may be significantly influenced by the life-time income earning expectations in various fields but the rigidity of the wage structure may not reflect the changing occupational needs as given by the development or investment plan.

Given this background we find that in a manpower planning context vocational training institutions, the universities and others on the supply side are often operating independently of demand side institutions responsible for wage policy, investment and job creation projections. The result is very often a divergence rather than a convergence between labour demand and skill requirements and supply.

At this point we come to the crux of the matter regarding the initiation of action in the manpower field. In the absence of a recognised central direction, the initiation of action could originate within any institution depending upon the way the special need for action in the manpower field impinges upon the activities of the particular institution. While some co-ordination may be solicited from other agencies in the field in an attempt to evoke corresponding action vital to the success of the venture, the autonomous authority structure in other institutions coupled with the lack of a macro focus on the various aspects of the overall problem, may militate against very effective results.

Another aspect of the approaches to manpower planning is that surveys have often been undertaken to justify or negate the need for the establishment of a manpower institution of one sort or another (be it for training, recruitment migration, wage fixing or whatever). However, while the justification for the institution may be based on examination of too few aspects of the problem, the establishment and existence of the institution may continue in the absence of a data base that could provide continuous Global focus to inform decisions made. Moreover the clout necessary to stimulate corresponding actions in other agencies whose activity impinges on the exercise is often lacking. The result in many instances is the persistence of the identified problems despite the establishment of the new institutions.

MAJOR SURVEYS - A note on the Employment and job vacancy approach versus the demand Forecasting approach

In Guyana, considerable interest in Manpower Planning has often been evoked at the time of population censuses, Labour Force and manpower surveys and employment and job vacancy surveys which have generally been regarded as providing once-and-for-all basic information that would inform decisions to be made affecting the quality, quantity, (and perhaps) remuneration and the future shape of the occupational and institutional structure of the labour market.

The most important of these were that:-

1. The survey of Employment, Unemployment and Underemployment by McGale 1956.
2. The Guyana Population Census 1960.
3. The Survey of Manpower requirements and the Labour Force by O.J.C. Francis 1965.
4. The Guyana Population Census 1970.
5. The Survey of Employment and Job Vacancy by O. Mehmet 1971.
6. The 1976 and 1977 Labour Force Survey conducted by the Statistical Bureau.
7. The Survey of Manpower Training into the 1980's by Percy Anderson.

As can be observed, while most of these studies relied on some statistical sample survey techniques, they tended to incorporate various aspects of the manpower forecasting methods based on time series analysis of social and economic structure or the employer's survey and international comparison methods.

In Guyana it has become fashionable at the time of manpower and labour surveys to attempt to project the future needs for skills in various occupation categories. These projections are generally based on one of three approaches.

- (a) Employers' estimates of future needs;
- (b) An assumption of the continuation of past trends in time series employment data combined with the growth of G.D.P.
- (c) The growth of labour productivity in various sectors.

Of these the employer's estimate has been relied on most extensively. However, given the uncertainty about the direction and levels of prospective resource allocation these forecasts tend either to be too optimistic or too pessimistic.

On the other hand, attempts have been made to get a better handle on the problem by the use of employment and job vacancy surveys which tend to focus on the change in demand for labour in various industries and occupations on a current basis. The problem with this approach is that not much can be said in advance about the changing need for skills. The skills therefore in this approach could only be provided with some time lag. Some combination of the forecasting and employment and job vacancy approach would appear to provide the best answers to the need for skills.

CONCLUSION:

It appears obvious that if substantial results are to be achieved from the manpower planning exercise within the Guyanese context, then

- (a) The Manpower plan itself must aim to solve at least five basic socio-economic problems facing the Guyanese economy. These are:-
 - (i) the achievement of a rapid and sustained growth of labour productivity;
 - (ii) the effecting of a continued increase in the real and money earnings of members of the labour force as the principal way of improving the level and quality of life of the population;
 - (iii) the rational distribution and redistribution of labour resources (both skilled and unskilled) between sectors and regions;
 - (iv) the development and maintenance of a body of competent cadres in accordance with national requirements; and
 - (v) the maximum utilisation of the available labour resources consistent with other objectives.
- (b) Greater initiative will have to be exerted by institutions on the demand side to
 - (i) generate continuously vital information on prospective requirements on both short and long term basis;
 - (ii) to skilfully intervene in the structure of remuneration to provide the kind of flexibility in keeping with the economy's skill needs;
 - (iii) to attempt a greater degree of co-ordination, preferably through the State Planning Commission, of the institutions in both the demand and supply side of the labour market.

Until this is done, not even the planned targets would be properly known. Moreover, unless this inadequacy in the approach to manpower planning is corrected, a proper assessment of the adequacy of existing and prospective institutions for meeting planned needs would continue to be a futile exercise.

UNIVERSITY PLANNING AND REGIONAL DEVELOPMENT

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Introduction ^{1/}

It is advisable to outline the main boundaries of this subject by a few preliminary observations.

The role of the University within the framework of Planning in the Social Sector has very broad dimensions, the extent of which can be envisaged by recognition that a comprehensive approach is the only meaningful one to planning. For whether or not one is concerned with the national, regional or sectoral level, there are always interactions between components of the planning model. My main concern will be to focus on the educational component in social sector planning, without losing sight of related development in other sectors.

Closely connected with the above is the fact that within the social sector, adjustments have to be made since all components are inseparably related to one another. I am here referring to the education component, the housing component, the medical care component, etc., all of which fall within the category of the social sector. Within the education sector the sub-components both with regard to level and vocational orientation should be considered in relation to one another.

It is also useful to make a distinction between policy and planning, since by doing so an insight can be gained into problems which are related to decision-making, goal formation, alternatives and means. In this regard, the administrative sector plays an important part in relation to policy-making and planning.

The views of Third World scientists on roles of universities in their countries have been accorded dominant weight in my thinking because many of them have addressed themselves to the urgent need to introduce innovations which could bring university courses nearer to development needs in their own countries. In so doing, they have had to reject some

^{1/} This refers to the Caribbean countries. Regional in a sense.

of the approaches of universities in the industrialized world and also to alter the direction of many Third World universities and other institutions of higher learning whose curricula had been determined in pre-independent eras by foreign or local academics trained abroad with a western frame of reference.

Though the whole Third World scenario provides background for this paper, our main concern will be with the Caribbean in its post-colonial period. Due to the lack of comparable statistically relevant data^{2/}, the approach to the subject will be of a thematic character, and some supplementary observations will be made on political and social independence in relation to education and research at universities.

II. ABOUT SOCIAL INDEPENDENCE

The premise that the granting of political independence necessarily brought an end to colonialism is false. The falsehood in this equation stems from the notion that political independence implies social independence. But in fact all historical patterns of reference (socially, culturally and politically) were either adopted from the colonial period, or imposed by the colonial European countries, and are still dominant in many of our states. Many problems derive from this. In the first place development concepts, the philosophy related thereto, and the values and standards derived therefrom, are embedded in the structure of interests of the former colonial powers, and cause stagnation in the process of defining development objectives tailored to the needs of our own societies.

This is not the case in all Third World countries, some of which clearly indicate in what manner and by what means they intend to bring about their development. In this respect they do not apply a number of values stemming from colonial patterns as central standards, but rather a number of solutions which are based on concepts derived from interpretations of their own social and economic needs. These countries attained a certain measure of social independence, defined as the capacity of a nation to attempt solutions to a number of its development problems in accordance with what it deems relevant in its own social, economic and political system.

^{2/}: Referring to the investigation of the UNESCO 1974 on University planning. Detailed data necessary for the purpose of this paper are not available.

I do not advocate rejection of all values originating in the former colonial European countries, but the determining factor should be that the criteria should be relevant and meaningful. The term social is to be interpreted in its broadest sense, namely: "everything that is concerned with people". Interpreted in that sense it includes technology, economics, politics and societal and cultural factors.

Social Independence and the University

As has been pointed out in the foregoing paragraphs social independence is characterized by the capacity of a nation to solve a number of development problems that are deemed relevant within its own social systems in a purposeful and meaningful manner. Striving to achieve social independence and/or self-management^{3/} entails the need to train local and regional intellectual cadres who are able to make essential contributions to defining relevant problems, to finding adequate solutions and providing managerial expertise required for overall development. Universities in the region should therefore be viewed as having an important development role.

Cooperation between governments in the region and universities is essential in order to give substance to the contribution expected from the university.

Where in the region a development philosophy is non-existent, governments cannot make a substantial contribution towards this end. The innovating, criticizing and counselling nature of the university is socially effective when, as was stated before, governments and universities in the region are striving for the same objectives in the development process and are operating in relation to one another. Research and expertise are both necessities in order to generate a well-aimed development process.

3/: I make a difference between:

Social independence which refers to a certain attitude and level to find solutions for developing problems. Mostly this capacity can be illustrated in ad hoc situations. Here is supposed that the solutions are related to a long term goal. Self-management is used here to refer to qualified trained persons who can "handle" the process. Self means trained local persons. In a way self-management can be interpreted as the "know how" that is available to operationalize self reliance and social independence.

Research in the context of social independence

In many countries of the Third World universities have not succeeded in giving sufficient content to the formulation of a number of relevant problems and in indicating solutions.

Research done within the universities is too often determined, not so much by priorities related to development needs of the countries, but rather by individual spheres of interest. Much of the work was done by foreigners and certain subjects hardly received the attention they deserve.

For example, a comparative research of development models can be envisaged. Research of this nature could provide important information about the relation between a development model and, for instance, the spreading of welfare and the participation of the population in the labour process.

Or at the micro level one can consider problems relating to planning and implementation of projects.

There is an obvious need to shift from partial and fragmentary research to more integrating and synthesizing studies that address themselves to the society - social structure and economy - in its entirety. Since the attainment of independence, significant changes have occurred in the political systems of many countries. The process of modernization has brought about fundamental changes in the social and economic structure and a great number of varieties in the approach of development were introduced in several countries. This offers a unique opportunity to scientists to undertake analytical and interpretative studies on the transformation process and on new orientations of our societies and economies.

A similar phase in the history of the present day industrialized countries has led to the production of a range of classical works that succeeded in defining the dynamic forces and in characterizing the form of the emerging societies. Only a small number of such books have been published in the Caribbean countries.

Secondly, it should be observed that for a realistic analysis of the nature of development problems it is essential to liberate oneself, to some extent, from methods and theories that have been worked out in the context of the industrialized countries.

There is need, in all disciplines that fall within the category of

social and economic sciences, for the development of new concepts including analytical categories and models that fit within the situation which is characteristic of our countries. In like manner statistical methods applicable to developed countries should be adapted to the conditions of our economies in order to be serviceable to development goals, policy and planning.

The empirical research methodology which is still dominant in social sciences in the Western societies has, to some extent, contributed to the views held by the social scientists in our countries with respect to social problems. For a long time there was an aversion to so-called finalities (goal - means). In the conception of science strongly dominated by positivism, the central question was the explanation of phenomena, the so-called empirical research methodology.

The starting point was the so-called principle of falsification, whereby verification offered the possibility to reject hypotheses or not. The emphasis thereby is not laid on uniqueness but on the unvarying uniformity of phenomena under identical conditions.

For a contribution to policy-making and planning the central issue is how to induce change. The pivotal question is the goals-means relationship, in other words, not only causalities, but finalities are at the centre of interest. Hence, at issue is not only the empirical scientific methodology, but the methodology of decision-making, also referred to as normative theory because priorities on the basis of alternatives are the main concern here. The central point is not the principle of falsification, but the principle of rationality.

For our purposes therefore empirical methodology and normative theory are both important, for empirical research results help to modify normative prescriptions. Emphasis has been placed on decision-making or the normative theory rather than on empiricism which presupposes central theories on the basis of which hypotheses can be formulated. For it is often premature and restricting to accept truths that may be relevant only for other societies, without having a good insight into our region and own societies.

Finally to achieve greater efficiency of policy-oriented research it is mandatory to go further than the technical analysis of a given development problem. Special attention should be paid to the political and administrative feasibility of the totality of applicable political instruments. Attention should also be paid to the various groups and classes that will be affected by the proposed changes. Nor can a policy-oriented research neglect:

- a) the means and methods to get the support of those groups that are involved in the proposed changes and
- b) the steps necessary to diminish and neutralize the counter action of groups with divergent vested interests.

Research of this nature can only be successful if the scientists have a thorough understanding of institutions, traditions and values of the populations in the countries.

EXPERTISE WITHIN THE CONTEXT OF SOCIAL INDEPENDENCE.

The training of experts and the creation of expertise at universities is of major importance within the framework of the struggle to achieve social independence. Practically all studies on the universities in developing countries focus primarily on the formal and material aspects of education.

For example, there is a constantly ongoing discussion on innovation in the curriculum. Although the importance of this cannot be underestimated, it is striking that little attention is paid to curricula within a societal context. For it is precisely that which is associated with the transfer of values and standards as they occur in the halls outside the lecture rooms, the commenting on a variety of domestic and foreign affairs, the attitude of the lecturer in a conflict, the manner of dressing, all this I should like to classify under the "unwritten", concealed curriculum, which I deem of invaluable importance for the training of young people to achieve social independence.

Often indigenous values that serve as central standards to assess a number of major social problems are not dealt with through lectures but through informal contacts, especially with members of staff with critical and analytical minds. It may concern reference to the colonial cultural pattern, or reference to modern conceptions in the former colonial country, or it may concern the adoption of an attitude of consistent aloofness. In all three cases certain values are transferred to students.

It is frequently asserted that there exists an identity problem in many Caribbean countries. But we should bear in mind that we can only speak about an identity problem when there is alienation from the familiar environment without accommodation into the new one, or in case there is only a partial adaptation. A person who is not entirely at home anywhere, in fact, does not know who he is and sets out "in search of his identity". But whoever is searching for something assumes that the object of his pursuit is somewhere to be found and alas, there is no identity if there is nothing with which one can identify oneself.

In so far as the identity problem is relevant, it is of importance to train people who, on the basis of involvement in their own societies, are able, with expert knowledge, to recognize and formulate relevant

development problems, and to indicate adequate solutions.

I shall now refer to two problems that are extremely relevant.

Social needs versus national and regional manpower needs

Costs of universities in the third world countries are continuously on the increase. The fact that increasing capital expenditure has not been accompanied by comparable growth in employment for graduates, is criticized in publications on universities in the Third World. It is stated that the education policy has resulted in an increase of the number of unproductive university trained experts. Lack of planning has resulted in enrollment of students for various studies without consideration of future manpower needs. Increases in the number of students enrolling for courses every year are due to:

- a) the status and material remuneration accorded to holders of university degrees, and
- b) the fact that secondary education in the region is primarily geared to further training at universities.

It is worthwhile noting that in our societies there is also an emancipatory aspect of university education, so that the desire to bring about structural reforms in the social and economic areas also implies the promotion of social mobility: Offering the opportunity to people from all walks of life to acquire that position which is in line with their talents, interests and capacities.

The annual growth of the number of jobless academics has led, in many South-east Asian countries, to efforts to arrive at a more selective education rather than mass education.

The solution attempted ignores the structural nature of the problem, for it will only be possible to solve the problems relating to supply and demand of the growing number of university trained people, if there is an insight into the future need for manpower in various sectors.

UNIVERSITY: RESEARCH AND EDUCATION

The provision of scientific education and the performance of research are important functions of our universities which can make significant contributions to regional development. But their ability to do this will be limited if they function as exclusive institutions for producing elitist cadres in society. At the same time universities embedded in exogenous value systems can contribute very little to development of the country. Monumental problems also arise where a university is made into an instrument of a government-imposed and strictly defined development programme derived from an explicit socially doctrinal context. Such a university does not train scientists who will be able to give substance to principal tasks of the development-oriented university, such as: the innovative, critical and analytical monitoring of a planned development process.

UNIVERSITY PLANNING AND POLICY

The policy of the university can be entirely or partially formulated by the government, or more or less, be entirely a concern of the university itself.

With respect to autonomy one can therefore envisage a continuum from absence up to total autonomy.

UNESCO has carried out an investigation in a great number of universities most of which were situated in Third World countries. This investigation has resulted in four publications entitled: "Planning the development of universities" 1974. ^{4/}

It can be concluded that comprehensive planning is desirable for "the whole and the component parts" even when proportional growth is the central theme. The common practice among universities is restricting themselves to tailoring financial to physical planning. There is need for greater rationalization and a more structural approach to university planning.

Higher education is multifunctional and multi-stratified. Its functions include training of experts, contributing to science by the practice of science, provision of education, and undertaking relevant research in technology and socio-economics. The multi-stratified character is reflected both in the range of qualifications universities confer and the wide variety of lectures given.

Three prime functions of our universities need to be considered:

a.) Scientific

Whether regional universities should concern themselves with scientific problems focussed on by universities in the industrialized world, or whether they should meet the requirements of development-oriented universities; to design models, to contribute to technology and science, to draft strategies based on their own societies; is a matter of great concern. Universities in the Caribbean also belong to the international university community, and cooperation in a regional context can considerably widen the scope for research. Common positions should be taken on the practice of science and on development, and since scientific standards are related to academic attainments of the staff,

^{4/}: UNESCO publication (4 parts). "Planning the development of universities" 1974.

qualitative improvement must also receive consideration. This can be determined through professional attainments of lectures, through scientific and socially relevant research and through setting high levels of standards. In this context the content of education is relevant to achieving progressive, scientific, technological and socio-economic development.

The professional qualifications of young staff can be improved through study leave, and active participation in regional and international scientific meetings.

b.) Social

Consideration should be given to the socio-economic needs of the country in enrolling students. There is a quantitative imbalance in the supply of and demand for graduates. In countries with scarce financial means where manpower planning is not practised, universities themselves should carry out surveys on job opportunities for graduates. The results of such surveys can help to rationalize intake of undergraduates. A start could be made through an annual survey relating the number of graduates to employment opportunities for them.

Development Institutes in the region can help to provide greater orientation of students toward Caribbean needs by exchanges of lecturers and by running courses both for students and citizens in general. The Law Faculty of the University of Suriname has already set up such a course.

Activities of this nature can be institutionalized to great advantages. They could lead to inter-faculty activities, to multidisciplinary approaches to development problems, to increasing the access of the community to the university, to broadening regional experiences, to increasing the level of the university and non-university staff members and students, and to intensifying the contact between lecturers and the community.

c.) Training of Student

The university must also reflect on the training of academics. Apart from the intellectual achievements, personality development is also important to our society. Recruitment of staff exclusively on the basis of intellectual qualities does not ensure that the teaching staff will pay attention to all aspects of student development.

It is only in certain socialist states that both the professional training and the mental training have been incorporated as general objectives. In view of the fact that in many third world countries it is chiefly the university that trains the executive and managerial cadres of the society and that, on account of the shortage of these cadres, academics in most countries are called upon, soon after graduation to bear great responsibilities, it would seem desirable for universities to pay much more attention to Caribbean societal goals in character development.

Restrictions and Constraints

There are many restrictions and constraints to good university planning in the region.

In order to take right decisions it is desirable to have an insight into regional problems in their full dimensions. To this end a good information system is a pre-requisite.^{5/} Data are required on the dropping out of students, the costs of various study programmes and activities, and insight into the patterns of applied information systems. This will require both the re-organization of existing information, and also the collection of new information essential for decision making. In this respect a first step in the right direction might be the publication of a regional university information bulletin through which interested groups in and outside the universities in the region could be informed on development within universities.

This preliminary examination of some problems in regional universities shows that apart from the socio-economic, financial, pedagogical and political fields, there are demographic constraints. The number of disciplines which can be offered in the university must be related to the minimum number of students required to run a course. One of the ways of overcoming this problem is cooperation between universities in the region.

Regional concern with these and other constraints is important for comprehensive university planning. Even if governments show little enthusiasm for planning, universities should among themselves seek to establish closer linkages in efforts to overcome regional problems in the field of education.

^{5/}: The functioning and meaning of an information system however is directly tied to the political system in which the university is embedded.

PLANNING OF AGRICULTURAL PRODUCTION
IN THE REPUBLIC OF CUBA

By: Central Planning Board

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'etre* 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 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.

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 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 resources 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 of 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.

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 areas 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 types 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 of state.

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.

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.

SCOPE, OBJECTIVES AND SPECIAL PROBLEMS OF PLANNING FOR
AGRICULTURAL DEVELOPMENT WITH REFERENCE TO BARBADOS

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Introduction

Barbados is a small island. Its area is only 166 square miles or 40 500 hectares and 77% or 24 300 hectares are available for agricultural purposes. During the last decade, there was an annual average of approximately 28 000 hectares cultivated and about 18 500 hectares of these were planted in sugar cane which is the predominant and traditional crop of the country. The remaining 91 500 hectares are shared by such crops as yams, sweet potatoes, onions, vegetables and others. It has been estimated that there are about 800 hectares in vegetables with approximately half of this area under irrigation and 800 hectares in citrus, mango, avacado, bananas, coconut and other fruit trees scattered throughout the island, and about 10% of the remaining land of poorer quality is in pasture. Around 80% of the sugar cane and 75% of the rootcrops are produced on the large estates and the rest on small or medium size holdings. Most of the vegetables have been traditionally produced by small or medium size farmers. However, a few plantations have, within recent years, been increasing their production of vegetables. The yields on small holdings are lower by about 20 - 30% than those on the plantations. It is apparent that, with the exception of sugar cane and a few other crops, the yields of most farm crops are well below the potential standard, which suggests the need for organization and technical efforts.

It is only within recent years that livestock, especially poultry production, has developed on a commercial scale. The poultry, egg and dairy industries are, to a large extent, concentrated in the hands of the medium and large scale producers. Yet, over 70% of the cattle, 80% pigs, 90% sheep and goats are on the small farms.

Water resources for irrigation are limited and a significant increase in the irrigated area is not expected in the near future. However, with different and more modern techniques and a higher level of education, it is possible that a wider area than at present could be irrigated from the same amount of water currently used. Approximately 400 hectares are irrigated at present and this is mainly by small and medium size vegetable producers. The average annual rainfall is about 150 cms and favourably distributed. However, a high degree of technical skill is required to retain soil moisture during the dry season. Most of the soils are shallow but of fair quality and suitable for cultivation of a variety of crops. Drainage is also a problem, especially in the Scotland District area during the rainy season.

The population of Barbados is estimated at 250 000 persons and about 25% of the working population is employed in agricultural and related occupations. It is reported that over 98% of the population is literate and primary and secondary schools exist all over the island.

Though the techniques employed in agriculture are fairly advanced on the large farms, there is still need for improvement in productivity especially of vegetables, food crops and livestock. This is particularly so among the small farmers. There is need for better production practices and the application of more effective farm management in order to obtain greater output from the land, water and labour.

The Ministry of Agriculture and its Services

The Ministry of Agriculture, Food and Consumer Affairs assumes a wide range of responsibilities in the field of agricultural development, planning, research and extension. In 1965, the old Department of Agriculture was renamed the Ministry of Agriculture, consequent upon the introduction of Ministerial Government. It was also in that year that the post of Deputy Chief Agricultural Officer for Research was established with responsibilities for non-sugar crops and livestock production. This was seen clearly in support of Government's policy to diversify agriculture and to show some regard for the development of the small farm sector, for it must be pointed out that prior to this time the staff of the old

Department of Agriculture had represented only the needs of the sugar and plantation sector.

It is now regarded that the Ministry of Agriculture, Food and Consumer Affairs is the governmental organization with total responsibility for fostering, guiding and monitoring the development of the agricultural sector. This Ministry must therefore formulate and implement those policies and programmes which are consistent with the stated objectives of Cabinet. It is in fact the main governmental contact with the general public in matters related to agricultural development and policies. In order to formulate and implement the agricultural policies and programmes, the Ministry is subdivided into functional units and employs about sixty technicians and a larger number of persons in the related fields.

The major areas (or departments) through which the Ministry functions and have its outreach are as follows:

- (i) The Extension Services Organisation
- (ii) The Research Services Organisation
- (iii) The Planning Unit Organisation
- (iv) Other Support institutions
 - (a) Barbados Marketing Corporation
 - (b) Agricultural Development Corporation
 - (c) Barbados National Bank

The Agricultural Planning Unit in the Ministry of Agriculture, Food and Consumer Affairs has the responsibility for agricultural planning. It must submit its sector plan to the National Planning Division in the Ministry of Finance and Planning which incorporates the plan into the National Plan. The latest plan to be published is the Barbados Development Plan 1979-1983 and the Sectoral Plan on Agriculture and Fisheries is attached as an appendix II to this paper.

In addition to the Agricultural Planning Unit, operating units under the Chief Agricultural Officer may formulate and implement programmes without going through the Agricultural Planning Unit. Further efforts of the Planning Unit are aimed at developing a more co-ordinated planning mechanism within the Ministry of Agriculture.

Other Government controlled agencies such as the Marketing Corporation, the Agricultural Development Corporation and the Agricultural Credit Bank form part of the planning machinery. In addition, there are privately controlled agricultural organisations which play a role in the planning process.

I. Current Patterns of Agricultural Planning

During the past two decades, national planning for economic development as one sector of the overall plan, has become widespread. Mellor in his book "The Economics of Agricultural Development" states that "the purpose of planning for development is to achieve greater efficiency through co-ordination. Effective co-ordination is based on an overall view of the development process. Plans may concern themselves with direct provision and allocation of resources through the manipulation of market forces and incentives. Resources to be allocated include not only traditional forms of capital but administrative talent and skilled manpower necessary to develop new institutions."

The literature contains several good summary statements - almost idealized models of agricultural planning. These reflect the current concern with the place of agriculture in economic growth, the concern with food supplies, and the concern that vigorous programme action is necessary if agriculture is to grow at an acceptable pace. Szeze Panik of FAO presents a brief outline of the common steps in agricultural planning, dividing the process into formulation of objectives and preliminary targets, research, formulation of development policies and measures, formulation of investment schemes and projects, programming, implementation and evaluation.

II. Objectives of Agricultural Plans and Policies

The fundamental purpose of development planning is to promote human welfare and growth. Increase of national income or the rate of economic growth is only the means to this end. Within this broad aim are always certain specific objectives, e.g. to maximise employment, to diversify the economy, or to deal with problems of balance of payments. To these may be added many more objectives which may be partly economic and partly social. Thus the long term development strategy in recent years for Barbados has been the diversification of the agricultural sector, expansion of tourism and development of industrial exports.

In recent years Barbados Development Planning has attempted to come to grips with the pre-eminent economic problems of its agriculture: an over dependence on one single crop - sugar. Although sugar cane is well adapted to the natural environment of Barbados the essentiality of agricultural diversification is recommended for the following reasons:

1. To overcome the structural rigidity of the agricultural sector due to its heavy dependence on sugar.
2. To overcome a growing deficit in the balance of payment on current account resulting mainly in increased quantities and costs of food imports.

While it is recognised that sugar is likely to remain the principal generator of foreign exchange in the foreseeable future, a hedge must be established against potential problems whose exact nature cannot be analysed now. The obvious remedy lies in a greatly increased emphasis on programmes for modernizing and expanding the production of non-sugar agriculture.

The years to come, must see an increasing emphasis on the positive contribution of agriculture to the overall pattern of economic growth and with it, a considerable change from planning for agriculture as a kind of welfare sector to a new emphasis on seeing agriculture as an essential, fully economic sector of a growing economy. Lewis notes, "if one were asked to pick a single factor as the most common cause of a low rate of economic growth it would have to be the absence of a vigorous agricultural policy. He goes on to say that agricultural stagnation is the main constraint on the rate of growth ... It contributes to a shortage of foreign exchange, either by failure to earn more, or by failure to supply the growing urban demand for food and raw materials, which must then be imported. Except for countries which have rich mineral resources, no under developed country can grow rapidly in which farm output is stagnating. "Hence a vigorous agricultural policy must head the list of developing measures". Much of the recent work of development economists focuses on the inter-relationship between agriculture and other sectors, with significant implications for agricultural planning. Much of this new concern for agriculture has grown from the fact that countries like Barbados are losing the capacity to feed themselves, evidenced by the growing food import bills. In addition foreign exchange earnings which chiefly come from agriculture have been declining at an increasing rate.

III. Plan Strategy Outline

Goals

The goals for the development of the agricultural sector in Barbados, which may be achieved by the implementation of an integrated production and marketing system, are to:

1. Increase sugar and non-sugar agricultural exports and import replacement.
2. Improve the standard of living of the agricultural community and the nutritional status of the community at large.
3. Maintain an adequate agricultural community.

4. Minimize the fragmentation of agricultural land.
5. Conserve land and bring under-utilized land into cultivation.

Resources

1. Land

- (a) Erosion in the Scotland District
- (b) Idle and underutilised lands
- (c) Uneconomical use of land

2. Water

- (a) Underdeveloped irrigation facilities
- (b) Absence of dams to conserve run-off water in the Scotland District

3. Manpower

- (a) Undertrained agricultural labour force
- (b) Shortage of technical and professional skills in research, administration and management.

4. Physical Capital

- (a) Inadequate stock of farm equipment
- (b) Poor infrastructure in the Scotland District
- (c) Underutilization of existing equipment owing to poor distribution of services.

5. Finance

- (a) Low retention of earnings in sugar industry
- (b) Inadequate credit facilities for small-scale farming
- (c) Inadequate funding for agricultural support schemes.

6. Management

- (a) Adherence to outdated and ineffectual management methods.
- (b) Poor managerial performance in key statutory institutions
- (c) Inefficient extension and other farmer services.

IV. Special Problems of Agricultural Planning

Planning for agricultural development in Barbados presents a number of special problems and difficulties. Unless these are clearly understood and adequately provided for in policies and measures for the implementation of plans the objectives sought are unlikely to be attained. This is the more serious since a shortfall in agricultural production can seriously hamper and dampen the growth of the whole economy where agricultural exports (sugar) is a major source of foreign exchange, where food is a considerable item of consumer expenditure and where a rise in food prices therefore gives rise to grave inflationary pressures. Among the more important of these special problems are:

- (1) The need to establish a pattern of land use, cropping and animal husbandry which will conserve or increase our very scarce soil and water resources.
- (2) The large seasonal and year to year fluctuations in output. These coupled with the low price elasticity of most farm products largely account for the great instability of agricultural prices. While the importance of price stability at the consumer level is generally appreciated, the serious disincentive effect on production of low and unstable farm prices appears to be of secondary importance.
- (3) The seasonal peaks of demand for labour tend to reduce farm productivity and make it more difficult to shift manpower to other occupations. This imposes the triple problem of finding systems of farming with more steady labour

requirements, of finding ways of usefully utilising under-employed farm labour during slack periods and of substituting mechanised systems for labour intensive systems without the resultant retrenchment of labour.

- (4) The need to rationally transfer capital from agriculture to finance investment in other sectors, without at the same time checking the growth of agricultural production or making the farm sector unduly unprofitable. Much more research is needed to reach a better understanding how agricultural taxes in general and land taxes in particular can be used to provide compulsory savings for economic development on the one hand and how tax incentives can be used to bring about increases in agricultural production, to give some indication of the net fiscal burdens on agriculture, relative to other sectors and to show how administration of agricultural taxation may be improved.

It seems worth emphasizing that by no means all the transfers of resources from agriculture take place through the medium of taxes. If agricultural land prices are too high and are unable to give a return consistent with the level of investment, if the cost of credit to the farmer is too high in relation to the returns to the farm investment, then in effect resources are transferred out of the agricultural sector. If because of defects in the marketing system, the producer must sell at low prices and in the end get a very small share of what the consumer paid, again there is effectively a transfer of resources out of agriculture. Perhaps the best recent general discussion is that of Stephen Lewis, in his paper "Taxation of Agriculture and Economic Development" - who reviews the main trends in post-war professional thinking about agricultural taxation and non-tax policies in the context of their possibility for resources transfer from agriculture to other sectors.

- (5) A characteristic of investment in agriculture of considerable importance in planning, is that to an extent greater than any other major sector, the bulk of the capital needed to raise agricultural productivity is not fixed capital but short term working capital. This applies particularly to the purchase of fertilizers, pesticides, improved seeds, animal feeds, etc. Because of the quick turn over of such inputs, conventional national accounting methods may miss changes in their use. They do not figure in capital output ratios, and this may lead to an underestimation of the real capital needs of agriculture. This gives the impression that capital output ratios in agriculture are very low and may lead to an underestimation of total investment requirements by leaving out the particular need for short term credit.
- (6) The presence of outmoded institutions in agriculture which until remedied will effectively block rational development. This applies especially to land distribution and condition of land tenure, of credit and marketing.
- (7) The small scale, the dualism and dispersed nature of agricultural production. Since the course of production depends on the independent decision of thousands of small and scattered producers who cannot be effectively coerced, it is essential to enlist their co-operation if plans are to be effectively implemented.
- (8) The dispersed nature of agricultural production makes it very much more difficult than in other major industries to obtain reliable statistics or to implement measures (e.g. of land reform, credit or price stabilization) designed to increase incentives to expand production.

- (9) The dualistic structure of agriculture and the pre-eminence of part-time farming in Barbados are important considerations. A further dimension to the planning process is the thousands of landless farms that form part of the agricultural sector.
- (10) Then there is the "specialness" to agriculture as a production process that differentiates it from other forms of production. It is a biological process and is characterized by heterogeneity in its physical inputs and climatic factors. The time span required in agricultural production involves a large number and wide variety of decisions. Agricultural production involves a "crop cycle" or time lag between planting and reaping and the decisions to be made throughout this gestation period are many and require different skills and knowledge; which crop to choose, which variety, when to plant, when to weed, when to fertilise and when to harvest.
- (11) There are key identifiable factors that are essential to agricultural growth and will accelerate it. Mosher in his book "Getting Agriculture Moving" has identified five (5) essentials: (1) Transportation, (2) Markets for Products, (3) New Farm Technology (4) Availability of Purchasable inputs and (5) Incentives; and Five accelerations: (1) Education (2) Production Credit, (3) Farmer Association, (4) Improving or expanding land base and (5) Planning. The relative importance of one or more of these factors must be based on the unique agricultural problem situation and most important each problem situation must be studied in totality. It is vitally important to recognize that uniqueness and totality are essential preconditions to the formulation of successful programmes for agricultural development in Barbados.

V. Decentralisation of the Planning Process

A major weakness in agricultural planning to date has been the failure to decentralise the planning process further. The weight of opinion in the literature is that more decentralization is necessary if agricultural planning is to enlist the support of cultivators, local agricultural leaders and government administrators. As Waterston says: "The Planners task becomes a matter of trying to reconcile, or at least to strike a workable balance between a whole series of divergent interests. This can best be done by making the preparation a plan combined operation in which everyone and every group likely to be affected by it - government authorities and administrators, legislative and other representative bodies, regional and local authorities, technical and advisory bodies, the private sector and the public is involved in the process in some appropriate way.

A number of analysts feel broad support for planned programmes and participation in the development effort can come only if there is more public debate about planning policy and subsequent programme formulation. Effective agricultural planning calls for a national seminar on development where the plan designers, the programme formulator, the programme implementers and those affected by the programme have, in a sense, an equal responsibility in the formulation of policies and programmes. The best way to ensure acceptance is to bring into the implementation of the plan representatives of those who have to carry it out".

An agricultural planning is basically a political process and should embody and express the concensus of the society in terms of the strategy for agricultural development. Accordingly the preparation of a plan for agricultural development should provide the occasion for the Minister of Agriculture to exchange views with the Nation's agricultural leaders and scientists - Technically sound development programmes which fail to take political realities into account are destined to fail. By the same token, political plans which ignore the technical facts of agricultural science and economics are unlikely to accelerate agricultural progress.

Price Gittenger of the World Bank submits that "developing countries with the best economic growth records are those where national development objectives are widely discussed, where programmes are argued over and formulated throughout the society, and where everyone from the Government Minister to the lay worker understand the harsh realities of economic growth".

VI. Organisation for Planning

The type of organisation for economic planning (including agriculture) naturally depends on the traditions, the political structure and other special circumstances of the country. But normally provision has to be made, however simple or elaborate the form of planning at three levels:

1. Determination of broad policies, such as the main objectives of development, and of the plan, the overall level of investment, the balance between different sectors of the economy, etc.
2. The more technical aspects of planning including the analysis, comparison and co-ordination of proposed development projects and programmes, reviews of trends and prospects on world markets for those commodities of economic importance to the country, formulation of targets, etc.
3. After the plan has been finalised implementation of the individual projects and programmes which make up the plan.

The main point for emphasis here, is the great importance of close consultation and co-ordination at all stages and levels if economic planning and development is to be coherent and effective. A plan for one sector, such as agriculture indeed becomes fully meaningful only within the framework of an overall plan.

By far the most extensive and best work dealing with general organizational problems, of development planning is Waterston's which draws on the planning experience of virtually every country in the world. After reviewing the experience in a number of countries Waterston recommends a Central Planning Agency or Ministry with rather aggregative responsibilities and establishment of "programming units" in the operating Agencies or Ministries.

Based on Waterston's model of plan organization in his "Development Planning - Lessons and Experience", and adapted to meet the specific needs of agricultural planning in Barbados, an organization plan structure is conceived of in the following ways:

- (1) A Central Planning Unit residing in the Ministry of Finance and Planning which has the responsibility for general economic analysis policy formulation and review and integration of sector plans. To this Unit obviously falls the task of estimating gross domestic product, balance of payment, ordinary government expenditure and revenue and similar national aggregate indicators, the articulation of national economic development objectives, the establishment of target rates of growth, and the integration of sector proposals into the final plan. To encourage co-ordination of sector plans the central planning agency must exercise a general administrative function of establishing deadlines and criticizing the programme submitted for individual sectors.
- (2) Programming Unit (Agricultural Planning Unit) residing in the Ministry of Agriculture, Food and Consumer Affairs adequately backed up by the various operating units, (crops, livestock, extension, fisheries, co-operatives, soil conservation, marketing credit, etc.).

The primary function of the Agricultural Planning Unit would include

- (1) the combining of projects and proposals of the operating units in the Ministry of Agriculture into agriculture sector programmes;
- (2) submitting and defending them before Central Planning Unit;
- (3) recommending policies, instruments of economic policy, administrative or other measures and machinery required to implement the Ministry of Agriculture programme;
- (4) reviewing and evaluating agriculture sector projects and programmes; and
- (5) co-ordinating the Ministry's demand for, and the use of technical assistance.

From time to time the Agricultural Planning Unit would be required to undertake special assignments, such as drafting loan application for projects, preparing project reports for foreign aid missions and international agencies, or assessing the impact of a specific project or programme.

To permit the preparation of the required studies and reports, the Agricultural Planning Unit would need to collect, record, process and analyse relevant statistical data provided by the operation units and from elsewhere. A desirable way to organise the Agricultural Planning Unit would be to set up two loose, flexible sections. One of these would be concerned with general analysis, research and statistics; the second with programming, progress reporting and evaluation.

The Agricultural Planning Unit should occupy a crucial position in the agricultural planning process and should be the main channel of communication between the Central Planning Unit; and the Ministry of Agriculture. It should receive information from central planning about planning objectives and directives which will permit the Ministry of Agriculture to prepare projects and programmes for incorporation into the national plan. In turn the Agricultural Planning Unit should act as an agricultural information reservoir for central planning. An agricultural plan prepared by the Agricultural Planning Unit is necessarily tentative until central planning reconciles it with other sectoral plans and available resources.

The Agricultural Planning Unit should not prepare or execute projects, since these are properly the functions of the operating units in the Ministry of Agriculture. It should however set up forms and standards for the various operating units to follow in the preparation and execution of projects. These should provide among other things for (1) feasibility and engineering studies, and cost benefit analyses; (2) the identification of "milestones" in executing projects which permit the setting up of realistic work schedule and phasing of a project with other related ones; (3) building into the project suitable means for determining, on an up-to-date unit with other costs, as well as physical progress during the execution of the project; (4) assigning responsibility for each task (5) training programmes required to produce personnel qualified to operate a project when completed; and (6) the creation of a suitable organisation and management cadre to run the finished project.

Because the Agricultural Planning Unit transcends organisation lines in a Ministry of Agriculture and because it must transmit certain guidelines and directives to which operating units must conform in preparing and executing their projects, it is desirable that an Agricultural Planning Unit be established as an independent staff unit reporting directly to the Minister through the Permanent Secretary.

The Agricultural Planning Committee should be made up of the Minister of Agriculture, his Permanent Secretary, the Chief Agricultural Officer, the Deputy Chief Agricultural Officers, and the Head of the Agricultural Planning Unit as standing members and the Heads of the various operating units to be co-opted as needed. Such a committee would constitute the planning group for the Ministry of Agriculture and as such should review policy proposals which the Ministry's Agricultural Planning Unit has prepared for consideration for the Minister or Permanent Secretary, and where appropriate for Cabinet or Central Planning Committee. This planning committee should also endeavour to evolve means for achieving economy avoiding waste and ensuring efficient execution of projects.

It is further desirable for the Ministry of Agriculture to have an advisory body (National Advisory Council) composed of persons outside the Ministry to participate and help in the process of preparing and executing the Ministry's programme. Representation on this committee should be wide as possible and should aim at covering the range of problems that impinge on agricultural development, institutional, production, marketing, financing and credit and manpower. The size of this council should be determined on the basis of compromise. Such an advisory body would be composed of representatives of important producer groups, of the processing and distribution trades of consumers, of agricultural co-operative organisations, technical staff of other Ministries, outside experts and the like.

The National Agricultural Advisory Council not only should prepare policy suggestions for the Minister, but should also act as a sounding board for contemplated policies. It should perform an educational and extension function as well, since the Minister should call upon it for co-operation in disseminating information about adopted policy. The council's suggestions should be studied and analysed by the Agricultural Planning Unit and submitted to the Agricultural Planning Committee for consideration.

To summarize therefore the simple outline of the planning machinery (see Agricultural Planning Organisation chart) thus identifies five important components: the central Planning branch whose main function would be to undertake the considerable task of co-ordinating and integrating all sector programmes in an overall national development plan, providing advice and guidance for the Ministry of Agriculture on general resources distribution and broad economic objectives: An Agricultural Planning Unit to work in close co-operation with appropriate operation units and other departments in the assessment of agricultural resources, the preparation of development projects and programmes, the economic appraisals, policy alignments and identification of priorities, as well as in the implementation of schemes and the evaluation of results: the operating units which will prepare and execute their individual projects following guidelines and standards set up by the Agricultural

Planning Unit: the Agricultural Planning Committee, concerned with broad formulation of development policy and with the general shape of the overall national development programme, and the continuous direction and adjustment of agricultural planning activity: a National Agricultural Advisory Council composed of outsiders to recommend policies and otherwise to assist in preparing and executing the Ministry's programme.

THE HISTORY OF THE UNITED STATES

The history of the United States is a complex and multifaceted story that spans centuries. It begins with the early Native American civilizations, such as the Mayans, Aztecs, and Incas, who built sophisticated societies in the Americas. The arrival of European explorers in the late 15th and early 16th centuries marked the beginning of a new era, as they sought to establish trade routes and colonies. The Spanish, French, and British all played significant roles in the early history of the continent.

The British colonial period saw the growth of the eastern seaboard, with the establishment of major cities like New York, Boston, and Philadelphia. The American Revolution (1775-1783) was a pivotal moment in the nation's history, as the colonies fought for independence from British rule. The signing of the Declaration of Independence in 1776 and the subsequent adoption of the Constitution in 1787 laid the foundation for the United States as a sovereign nation.

The 19th century was a period of rapid expansion and growth. The westward movement, driven by the desire for land and resources, led to the discovery of gold in California and the settlement of the Great Plains. The Civil War (1861-1865) was a defining moment in the nation's history, as it resolved the issue of slavery and preserved the Union. The Reconstruction period (1865-1877) followed, as the nation sought to rebuild and integrate the newly freed African American population.

The 20th century was a time of significant social and political change. The Progressive Era (1890s-1920s) saw the rise of reform movements that sought to address social inequalities and improve government efficiency. The Great Depression (1930s) was a period of economic hardship that led to the New Deal, a series of programs and policies designed to provide relief and recovery. World War II (1941-1945) was a global conflict that tested the nation's resolve and led to its emergence as a superpower.

The post-war period saw the rise of the Cold War (1947-1991), a period of tension and competition between the United States and the Soviet Union. The Civil Rights Movement (1950s-1960s) was a struggle for equality and justice for African Americans, led by figures like Martin Luther King Jr. The Vietnam War (1955-1975) was a controversial conflict that tested the nation's military and political leadership.

The late 20th and early 21st centuries have been marked by significant technological advancements, including the space race and the digital revolution. The 9/11 attacks (2001) were a tragic event that reshaped the nation's foreign policy and security. The current era is characterized by ongoing challenges, including climate change, economic inequality, and political polarization.

APPENDIX II

(Extracted from Barbados Development Plan, 1979-83)

Chapter 5

AGRICULTURE AND FISHERIES

INTRODUCTION

The agricultural sector in Barbados, by virtue of its dominance in the economy has always been the major sector in any development plan strategy. This sector contributed significantly to foreign exchange earnings and to employment. As the economy diversified and developed in the 1960's the agricultural sector was also diversified. The strategy was to pursue an agricultural diversification programme aimed at encouraging the shift of some sugar cane lands from producing sugar to producing vegetables and livestock products.

The agricultural diversification strategy of the decade preceding 1975 was part of a land use policy which was initiated to permit the subdivision of selected estates into two and four acre lots. This policy was theoretically to give momentum to the non-sugar diversification programme, but it failed at the implementation stage. This land use policy, because of its flexibility, failed to differentiate between the development objectives of land ownership redistribution and agricultural land redistribution. As defined here, a land ownership re-distribution policy is a socially and politically oriented policy to cater to the need for wider ownership of land; whereas an agricultural land re-distribution policy is an agriculturally oriented policy to re-distribute holdings of a viable size according to intended use. The adverse long-run effect of this past policy was a significant build up in the portion of idle lands in the agricultural sector.

Future agricultural policy will ensure that land use is maximised and that the benefits of the agricultural diversification programme are economically, financially and socially maximised.

OBJECTIVES AND STRATEGIES FOR AGRICULTURAL DEVELOPMENT

The major thrust of an agricultural development policy will focus broadly on the areas of land use, import substitution, export generation, employment opportunities and farm income improvements, efficiency in administration and resource conservation.

Objectives

These areas of thrust may be translated into the general objectives which follow:

- 0 to implement a land-use policy which will ensure the economic use of the existing arable land;
- 0 to maintain and if possible increase agricultural export earnings from sugar and to develop exports of other agricultural commodities;
- 0 to reduce agricultural imports where import substitution is technically and economically feasible, and not unduly costly to the consumer, and where the overall effect on the balance of payments is favourable;
- 0 to encourage a policy of employment stability and where financially feasible to encourage employment generation in the sector;
- 0 to improve the level of efficiency in the administrative elements of the sector;
- 0 to ensure a fair return to producers and workers and reasonable prices to consumers;

- O to conserve and protect the resource land from erosion and to develop and utilize efficiently the resource water.

THE STRATEGY

Land-use

A land-use policy must firstly focus on the future of sugar cane production, which now occupies about 85% of arable land in Barbados.

In order to formulate a strategy for the future of sugar production, the Government, the sugar industry and the Barbados Workers Union agreed to support a comprehensive study of the future of the sugar industry. This study, which is well underway, has as its major terms of reference:

- O to identify those areas presently under sugar cane cultivation which could economically be put to other agricultural use;
- O to identify the resources required to optimise the use of the lands suitable for sugar production and the use of those suitable for non-sugar agricultural purposes;
- O to evaluate the applicability and efficiency of available and existing machinery for use in the industry;
- O to evaluate the efforts of mechanization and the utilization of labour on the financial and economic performance of the sugar industry;
- O to make recommendations on the organisations and institutions necessary in order to realise the potential contribution from sugar.

The findings of this sugar study will form the basis for formulating the future development strategy for this most vital industry.

As for the future of non-sugar agriculture, the viability of continued expansion in vegetable production will be influenced by the development of our irrigation water resources. In 1978, the findings of a comprehensive Water Resources Study were submitted to the Government. That study found that some 52.6 million litres of water per day were available for irrigation use. This water is found in areas with a gross area of 3,725 hectares. However, not all this area is arable land. The development of this water resource will require the assistance of the Government and the international agencies in providing the required investment capital for irrigation.

The statistics show that Barbados is markedly increasing its per capita consumption of meat. Given about 80% of this consumption is imported, it is imperative that the economics of increased livestock production, within the land-use context, be examined. Therefore, where feasible, Government will encourage the expansion of areas of lands not suitable for sugar or vegetable production, for livestock production.

Of significance to the future strategy is the land-use policy which will be adopted. Previous land-use policy permitted the indiscriminate sub-division of agricultural land. During the Plan period 1979-83 the land-use policy will ensure that no indiscriminate sub-division of agricultural land is permitted. Rather it is intended that an agricultural land re-distribution policy be the focus of the land-use policy.

To this end, Government has embarked on an Integrated Rural Development Project which will result in the development of plantation tenancies as agriculturally viable units. This project will first transfer title of land to the tenant and then develop infrastructure and irrigation facilities, and provide adequate credit for those tenants who wish to become viable producers. It is expected that funds for this project will be provided by the Inter-American Development Bank. In addition Government will implement a land-lease project at Spring Hall.

This project will involve the leasing of Government owned land to about twenty-four (24) farmers to embark on full scale small farming. It is expected that investment funds for this project will be provided by the Caribbean Development Bank.

Of relevance to the land-use strategy is the need to get arable fallow/idle lands back into production. There are about 2429 ha of former sugar cane lands now lying idle. Some of those lands are undoubtedly lost to agriculture. For the remainder, the Government will analyse and formulate appropriate measures to get such lands back into production.

Generation of Foreign Exchange

Sugar

The foreign exchange generating capacity of the agricultural sector will be exploited to the fullest. The sugar sub-sector is undergoing an indepth analysis and a sugar strategy will be implemented to maximise the foreign exchange receipts from sugar within the marketing constraints facing sugar exports.

Indications are that the existing major sugar markets will continue to experience instability and depressed prices during the Plan period. Therefore, more than ever, a skillful marketing strategy will be implemented to maximise the receipts from available markets. Barbados will continue to support the ACP efforts to gain maximum price levels from the EEC and on the U.S. market.

To supplement sugar receipts, efforts will be made to increase significantly the receipts from rum exports. In addition Government will continue to monitor the research and economic feasibility of producing by-products from sugar. Two of these by-products which will be foremost in the planning objectives are fibre board from cane rind and industrial alcohol. If necessary, the Government will seek investment participation in implementing these sugar by-products

projects when proven feasible. In any event, the Government and the sugar industry will continue to co-operate in the efforts to maximise foreign exchange earnings from sugar cane production.

Vegetables and Root Crops

The foreign exchange efforts in the non-sugar sub-sector will be focused on export vegetables and selected root-crops. It is known that markets exist in temperate countries for fresh vegetables during the winter season. To penetrate such markets calls for specific measures on the supply side as well as the demand side. To co-ordinate these two variables, the appropriate project evaluation and formulation procedures will be undertaken. The investment needs of an export vegetable project will be identified and if necessary, appropriate financial assistance will be sought. Investment assistance will also be sought for appropriate irrigation development.

Black Belly Sheep

During the Plan period the expansion of the Black Belly sheep population will be encouraged within the private sector and implemented on the Government sheep multiplication stations. Exports will continue to be developed.

Import Substitution

The export thrust of the foreign exchange objective will be complemented by an import substitution emphasis. The import data show that feed-stuffs import are significant. This is a direct result of the ever increasing per capita consumption of meat in Barbados. It is therefore planned that local production of grains and other feeding-stuffs will be emphasised during the Plan Period. Included in this strategy will be the implementation of the commercial use of cane-feed as it becomes more economically and technically feasible. There are some products which can be utilized economically in agro-industries. As adequate supplies become available, processing will be encouraged.

Employment and Income Distribution

The import substitution strategy will be strengthened by a drive to encourage the continued consumption of locally produced foods. When necessary, quantitative import restrictions will be employed to stimulate greater demand for local produce.

The age profile of the agricultural labour force, particularly sugar, coupled with the less than favourable attitude of youth towards agricultural labour, will shape the employment objective of the future strategy. The national goal for employment is one of aiming to achieve virtually full employment in the medium-term. For the agricultural sector, the short-term employment policy must be one of employment retention and stability rather than expansion.

This policy has in part, been influenced by the financial and social variables which in aggregate restrict employment expansion. For several years, the wages of the agricultural worker have been lower in real terms than those in the new sectors of the economy. This situation was perpetuated in part by the inability of the industry to grant substantial wage increases (prior to 1973) because of the guaranteed prices earned for sugars. The cyclical but steep rise in sugar prices in 1974 and 1975 enabled the sugar industry to greatly improve its ability to pay higher wages. The result of this phenomenon was that in 1978 sugar workers enjoyed a competitive wage position, and in some cases an advantage over other sectors. The financial implication of the prevailing wage rates is that an expanded labour force would aggravate the cost/price squeeze now being experienced in the sugar industry.

An analysis of the age structure of the sugar workers reveals that in 1976, 60% of the regular labour force were over 50 years of age. This figure is in contrast to the age distribution of the national labour force in 1976 where a mere 20% were over 50 years. The type of replacement policy adopted for the over 50's in the sugar industry will therefore have a significant impact on the total

employment generated by sugar.

Mechanization in agriculture (sugar and non-sugar) has perhaps increased at a more rapid rate than is socially desirable given the level of unemployment. Because of the desire to maximize the future employment potential of the agricultural sector, a rationalization study of the labour/capital ratio most suited for the development of agriculture will be undertaken as part of the sugar industry study.

Income Distribution

The objective of farm income distribution seeks to ensure that the small farmer^{1/} in Barbados continues to survive not only socially but economically.

Traditional agriculture in Barbados was characterised by an estate sub-sector on the one hand and a small farm sub-sector on the other. As our agriculture modernized and diversified, there emerged a group of enthusiastic non-sugar producers in both sub-sectors. These modern non-sugar producers were forced to become more farm income conscious than the traditional sugar producers. To these producers the cost of investment capital, land and labour were only available at market cost. No massive grant funds or 'cheap' labour were abundant. Economies of scale in production were necessary to sustain adequate incomes.

As the modernization process continued, the specialist non-sugar producers in the estate sub-sector began to gain the competitive advantage in production over their counterparts in the small-farm sub-sector. In fact, the small farmers utilized high levels of family labour and devoted longer hours on the farming activity in order to compete in production. On the demand side small farming gained from the frequent shortages, particularly with vegetables, which produced rather high prices.

What this planned agricultural development strategy is concerned with is that the future of the small non-sugar farmer is assured, as more estate lands are released from sugar into large scale non-sugar production. The justification for the continued survival of the small farmer cannot be based exclusively on economic analysis of land utilization.

1/ The 1971 Census of Agriculture defines small farmers as those holding less than 10 acres (approx. 4 hectares) of land.

This sub-sector consist of more than 10 000 small farmers as compared to about 200 large sugar holdings. Social stability and the right to a fair standard of living will be weighed against economic criteria.

The intention of the Gouvernement through its agricultural development strategy is to provide the necessary incentives and assistance to guarantee a fair standard of living to all small farmers. The formulation of a rural agricultural development project is the first major step in this direction. In the medium term it is planned to develop land settlement schemes for small farmers, to promote co-operative farming and to initiate youth farms to encourage our youth population to participate in the agricultural modernization process.

Resource Conservation

The conservation of soil and water resources will be an essential component in the agricultural development strategy. For over a dacade large sums were expended on the Soil Conservation Scheme in the Scotland District of the Island. Such activity was essentially geared at erosion control to arrest slippages and landslides. Despite such efforts, the agricultural production of the area remained stagnant. The Government has embarked on a project that should result in a significant increase in production from the area. With financial assistance of the IADB, a comprehensive study of the area has been undertaken and a Master Plan for the development of the Scotland District will be prepared for the consideration of the Government.

From this Master Plan, projects will be developed and implemented in the area. Such project activity will require significant capital investment. The Government will be approaching the IADB, CDB and other international lending agencies for financial assistance to exploit to the fullest the agricultural potential of the Scotland District. In addition, appropriate soil conservation measures will be applied to all lands in the island. The Government will expect the private farmers to intensify their usual cooperation in this area.

As for ground water conservation, the use of this resource will be monitored and where necessary regulated by the new Water and Sewerage Authority. This Authority with the assistance of the Hydrology Unit of the Ministry of Agriculture will identify water resources suitable for irrigation and advise producers on the appropriate rates of application.

Where groups of farms are located in a given irrigation water zone, the Government will encourage through incentive measures the development and use of irrigation facilities on a co-operative basis.

Agricultural Institutions

The major agricultural institutions are the Ministry of Agriculture, the Agricultural Development Corporation, the Barbados Marketing Corporation and the Agricultural Credit Division of the Barbados National Bank. As a matter of policy, the Government will implement measures to ensure greater management and technical efficiency in these institutions.

The Ministry of Agriculture will continue to be a major arm for implementing the Government agricultural policy. The Research and Extension activities of the Ministry will be subjected to analysis and evaluation with the aim of increasing efficiency in the Ministry. The assistance of the Inter-American Development Bank will be utilized in this exercise.

The ADC during the past decade has drifted along without an encouraging productive performance. In fact its existence has been rather costly to society. As a result, the future role and functions of the ADC will be the subject of a detailed study. Before the end of the Plan period it is intended to have the ADC re-oriented more towards a greater contribution toward agricultural production than previously. Where possible the recommendation of the study will be implemented with urgency. Meanwhile, however, the Corporation is being restructured and one of its functions will be the implementation of the integrated Rural Development Project.

The Barbados Marketing Corporation has also failed to assume the leadership role in the field of agricultural marketing. The Government has therefore secured financial assistance from the Caribbean Development Bank to formulate a marketing project which will include the re-location and expansion of the BMC facilities at a site identified at Lower Estate, St. George. Construction is due to commence in mid 1980 and the plant is expected to commence operation late in 1981.

The Agricultural Division of the Barbados National Bank will be the major single source for financing agricultural development. The Bank is the agency responsible for administering loans raised by the Government for on-lending to farmers. As the investment needs of the agricultural sector increase during the Plan period, the Government will, where necessary, approach international lending institutions for loan capital. It is estimated that during the Plan period, the Agricultural Bank will be asked to administer new lines of credit to farmers of approximately \$6.4 million.

Price Policies and Incentive Schemes

In order to continue its policy of controlling inflation within the economy the Government will continue a policy of price control. As far as domestic agriculture, is concerned, this policy will continue to ensure that on the one hand, commodities reach consumers at a reasonable price, and on the other farmers receive a fair price for their products and to regulate trade in a manner that will serve the best interest of the community.

The Government's policy on price control is being effected through:

- 0 The price control division of the Ministry of Agriculture, Food and Consumer Affairs.

- 0 The Barbados Marketing Corporation, through its policy of guaranteed prices to farmers and its intervention to stabilize the market during shortages by importing the necessary requirements.

- 0 The Agricultural Planning Unit by the provision of marketing intelligence information and the identification of incentives for the Agricultural Sector.

The Barbados Marketing Corporation has been made sole importer of a number of food items, and this has allowed for the proper regulation of the supply of these commodities on the local market.

The aim of policy measures taken so far is to ensure that prices are stabilized as much as possible to ensure that supplies reach consumers so that the nutritional requirements of the population can be satisfied.

Every effort will be made during the Plan period to ensure that farmers receive a fair price for their produce, by improving the marketing facilities and the mounting of a marketing intelligence programme. These measures will also be aimed at a policy of price stabilization by trying to remove the gluts and shortages which now plague the agricultural sector.

With a view to motivating agricultural production and diversification, subsidies have been extended to farmers through the farm incentive scheme to ensure that farmers are able to produce commodities at reasonable prices and make a fair return on investments. The present subsidies include the purchase of inputs, tractor services, sinking of wells and purchasing of irrigation equipment, spraying equipment, pasture development, co-operative development, livestock breeding services, services to fruit tree owners, slaughtering services provided at the abattoir, and a rebate on repairs to boats and fuel for boats registered with the fisheries department. In the past, farmers have taken advantage of these incentives and efforts are underway to ensure that wherever possible concessions are made to producers, which will allow stimulation of local food production, expansion of the fishing industry and ensure a reasonable return on investments.

To achieve these objectives during the Plan Period the Government will continue to provide these incentives necessary to sustain the sector.

It is hoped during the Plan Period that farmers will utilize the opportunities available to them in the farm incentive schemes.

The Barbados Marketing Corporation is continuing to offer guaranteed prices to farmers in order to help stabilize prices during the Plan Period. The B.M.C. will continue to intervene in the market when there is a shortage of supplies and import commodities in the quantities desired and at the time desired. The B.M.C. will also perform a similar role during the periods of high production by providing guaranteed prices to farmers on contract in an effort to stabilize prices to producers.

Through the incentive scheme, efforts will be made to ensure that farmers are aware of the subsidies available to reduce the cost of production, so that the production of local commodities can be exported at competitive prices to regional and extra-regional countries.

FISHERIES DEVELOPMENT

The development of the fisheries potential of Barbados will be fully exploited during the Plan Period. The fishing industry that has evolved is predominantly one comprising of about 500 small fishing boats. These boats are often constructed with limited holding capacity and are non-refrigerated. Consequently fishing time is restricted to one day expeditions. Every effort will be made to encourage fishermen to improve their vessels and remain much longer at sea during fishing expeditions.

To provide these incentives, the Government has sought the financial assistance of the European Development Fund to implement a major project at Oistins. This project will provide a new and elaborate fisheries terminal, ice making facilities, new pier and jetty and more efficient marketing arrangements for fishermen. It is planned to extend the Oistins fisheries project concept to other selected fish landings in the Island, particularly Speightstown.

The Government will also continue to provide a line of credit for small fishermen through the Barbados National Bank.

There is, however, the need to evaluate all aspects of the fishing industry. The supply issues and demand problems will be analysed with a view towards identifying ways of increasing supply to meet anticipated demand growth through an adequate marketing system. The achievement of stability of fish prices to the fishermen and consumers will be an objective of any future fisheries strategy. The Government has obtained the assistance of the Canadian Government in conducting the planned in-depth study of the fishing industry.

In 1978, the Government took the decision to phase out the shrimping operations of its wholly owned company, International Seafoods Limited. Shrimping had become a non-viable operation partly because Barbados had to depend upon the good-will of other nations to permit Barbadian vessels to shrimp in their grounds which were distant to Barbadian waters. Added to this, was the fact that Barbadian shrimp vessels had become unduly costly to operate. The constant need for subventions from Government became unjustified.

The Government is investigating the feasibility of a trawl fishing operation using some of the existing shrimp vessels. In this activity, the Governments of Barbados and Guyana have entered into a fishing agreement which is mutually beneficial to all. The successful implementation of a trawl fishing project will go a long way in increasing the supply of local fresh and processed fish. The Government is also investigating the utility of providing trawler storage facilities at sea

for small fishermen to allow them to remain longer on fishing expeditions.

CO-OPERATIVES

Government is convinced that a viable and vibrant co-operative Movement in Barbados can result in the kind of development which portrays self-help and promotes self-sufficiency. Government is also concerned that with a few notable exceptions the co-operative movement in Barbados has experienced only modest progress over the years. Based on the conviction that real improvement is possible and the will to succeed exists, Government is prepared to continue its support to co-operative enterprise in Barbados.

To this end, it has sought to identify the constraints to co-operative development in Barbados and to encourage a reorganization of the Movement along lines which would stress co-operation and self-help as well as upgrade the awareness of the membership at large to the value of good business practice as an aid to co-operation.

Plans are underway to re-organize the movement through the establishment of a Co-operative Federation and for effecting changes to the present arrangements consequential upon this approach. It is recognised that the fullest involvement of co-operators is essential to the success of whatever approach is taken.

Technical assistance has been secured for the services of an expert from the International Labour Organisation to assist in upgrading cooperative awareness, education and management skills of key cooperators in the first place, and of the movement in due course for more effective organisation.

EXPENDITURE

The budgetary estimate of capital expenditure for the agricultural sector during the 1979/80 to 1982/83 period is \$69.8 million. Of this amount, it is expected that over \$20 million will be raised from external funding agencies as loans or grants.

The major externally funded projects include the relocation of the Barbados Marketing Corporation, the construction of a new Central Agronomic Research Laboratory, the Oistins and Speightstown Fisheries Terminal Complex, the Integrated Rural Development Programme, the Development of the Scotland District, the Spring Hall Land Lease Scheme and a Fisheries Development Project.

A FRAMEWORK FOR DEVELOPING A
REGIONAL FOOD AND NUTRITION STRATEGY

By Dr. W. J. Phillips
Caribbean Community Secretariat

Section I

INTRODUCTION

1.0 BACKGROUND TO THE REGIONAL FOOD PLAN

In 1975 the Heads of Governments of the four More Developed Countries (MDC's) of CARICOM set up a Food Working Party to consider and make proposals for the consideration of all member governments -

" ... for a specific plan for the increase of food production including fish, in the entire CARICOM Area designed to achieve the greatest possible measure of self-sufficiency in the region: ..."

As a result of the activities of the Food Working Party, the Committee of Regional Agricultural Planners and the Standing Committee of Ministers Responsible for Agriculture, proposals were put to the Heads of Government Conference in December 1975 on the implementation of a Regional Food Plan. The proposals essentially consisted of:

- i) formation of a commercial corporation, the Caribbean Food Corporation, as the main implementing mechanism for a Regional Food Plan and spearheading a programme for greater self-sufficiency in the Region's food requirements;
- ii) preliminary identification of projects which would make a major impact in resolving the production and employment problems at the earliest opportunity. These projects are within the more vital food commodity sub-sectors and support services such as -
 - a) livestock products;
 - b) grain crops for direct human consumption and for livestock feeds;
 - c) fruits and vegetables;
 - d) the production of seeds and other propagating materials;

- e) the bulk purchasing and distribution of agricultural inputs;
 - f) spices and essential oils.
- iii) utilising existing community institutional mechanisms for advancing the implementation of the Regional Food Plan.

The Heads of Government Conference considered the above proposals and the Conference:

"Agreed in principle to the formation of a Caribbean Food Corporation as the implementing mechanism for the Regional Food Plan and to its very early establishment, in any case not later than September 1976;

Adopted the proposals made with respect to the projects identified;

Directed the Caribbean Community Secretariat to ensure that the prefeasibility studies with respect to the major items in the work programme are undertaken as soon as possible;

Requested the Caribbean Development Bank to explore and report on sources of finance for prefeasibility studies and loan financing of the identified projects;

Directed the Standing Committee of Ministers Responsible for agriculture to keep under constant review the progress made during 1976 and to issue any further direction that might be necessary."

The essential basis of the Food Plan has been a continuous process of study, identification and implementation of projects under the various sub-sectors. The approach utilises what has been called a "Preliminary Design" concept.

This concept which initially was developed for the livestock sub-sector is essentially an accounting of regional needs and of regional capacity to satisfy those needs defined in the first instance in terms of readily identifiable national plans. It is an approach which proposes a regional strategy, incorporating national programmes and policies for the development of the particular sub-sector. It shows the regional production deficits, the resources required to meet these deficits and broadly indicates the production possibilities and input requirements for the proposed production targets. In addition, it identifies the back-up activities required for the production programme. On the basis of this

information, decisions on the regional level can be made and a programme of activities agreed on. Regional decisions with respect to the scope and content of the sub-sector programme lead to the next stage of activity which is the task of refining the "Preliminary Design" through effectively identifying the national projects and working towards their ultimate implementation.

This approach, though practical in the circumstances of the Region, has not been without its limitations, including:

- i) absence of overall guidelines as could be provided by a strategy for the agricultural sector based on optimal allocations given competing developmental objectives;
- ii) the concentration of sub-sector studies on identifying production-oriented projects which has excluded consideration of other orientations, for example, health, education, etc., applicable to the development of the sector as a whole; and
- iii) the sub-sector focuses only implicitly recognising the nutritional needs of the population.

The last factor was brought into sharp focus when findings of Caribbean Food and Nutrition Institute (CFNI) studies indicated that a significant portion of the Region's population was suffering from inadequate nutritional intakes. These findings were of sufficient concern as to lead to a Ministerial proposal to develop a Regional Food and Nutrition Strategy as part of regional planning activities. This Paper deals with preliminary work towards elaboration of such a strategy.

1.1 PROPOSAL FOR FOOD AND NUTRITION STRATEGY

The Conference of Ministers Responsible for Health, in the Statement on Health Policy adopted at their Third Meeting, named food and nutrition as one of their top priorities. In Resolution 16, adopted at their Second Meeting, the Conference requested the Secretary General to change the name of the Regional Food Plan to the Regional Food and Nutrition Plan and to examine the implications of so doing. Ministers of Agriculture subsequently endorsed the latter part of this Resolution. Resolution 12, adopted at the Third Meeting, read in conjunction with Objective 3 of the Regional Health Policy, outlined the framework of a Food and Nutrition Strategy.

In its statement on Health Policy, the Health Ministers Conference states that its objectives under Food and Nutrition are to:

- i) improve at once the quantity and quality of food taken by the vulnerable sections of the population, namely, small children, expectant and nursing mothers and the poor;
- ii) attain in the longer term, a level of food intake that prevents any degree of malnutrition that impairs human well-being and productivity;
- iii) with these aims in view, develop a multisectoral food and nutrition policy for each country and for the Community as a whole.

The Conference goes on to prescribe what it calls "a triple approach to strategy" as follows:

- i) rural development, with emphasis on productivity and the re-distribution of income;
- ii) measures to improve the combination, quality and distribution of foods produced and
- iii) health and related activities.

Section II

A REGIONAL FOOD AND NUTRITION STRATEGY -

THE ISSUES

2.0 NUTRITIONAL PROBLEMS

Available data on the nutritional status of the population within the CARICOM Region indicate that there is a significant shortfall not only of calories, protein and iron, but also of calcium, thiamine (B1), riboflavin (B2), niacin and vitamin A. For example, CFNI findings indicate that 44% of the Region's population do not obtain recommended levels of protein and 56% are deficient in calorie intakes. The situation varies for individual countries, but groups at risk are fairly similar. The nutritionally most vulnerable groups in the CARICOM Region are children under two years old and pregnant and lactating women.

Protein-Calorie Malnutrition (PCM) in children under the age of five and particularly in children under the age of two continues to be the gravest nutritional problem in the entire Region. This is reflected in the average infant mortality rate for the Commonwealth Caribbean which is twice that of the North American countries and, even more significantly, the average one-four year old mortality rate is five times as high. About 1.2 per cent of these children, roughly estimated to be between 6,000 and 9,000 in the CARICOM Region, are severely underweight and in imminent danger of death, while about 12 per cent are less markedly underweight and are classified as moderately malnourished.

Anaemia (mostly due to iron deficiency) is common, and affects mainly children under five and adult women. Because nearly one-half of pregnant women are anaemic, this may result in complications for mother and child at childbirth and afterwards.

There is evidence that manual workers of both sexes have a deficient energy intake and to a lesser degree, a deficient protein intake. The implications for national productivity of an inadequately-fed work force should be obvious.

2.1 FOOD SUPPLY AND NUTRIENT DEFICIENCIES

The available data on food supply indicate that, taken as a whole, the average national per capita food energy supplies vary from being equal to requirements to providing an over-supply of 30 per cent while the protein supplies are well above requirements. The existence of nutrient deficiencies despite this overall picture of nutrient supply indicates that there is a degree of inequitable distribution of the available nutrients.

The proportion of proteins in the existing diets has been said to be adequate for meeting the body requirements. The protein deficiency which is evident is the result of an overall calorie deficiency because when there is a shortfall in the intake of energy foods, the protein foods consumed are utilized first for energy needs with the result that little if any remains available for the vital functions of growth and maintenance. The malnutrition problem in the Region which is commonly misconceived as a protein problem is basically a problem of insufficient intake of food.

This problem is most commonly found in situations where low income, unemployment, large family size, poor housing and poor environmental sanitation exist. Poor families are the most critical group in this regard and will need special attention in the planning of a Food and Nutrition Strategy.

Another aspect of the food and nutrition problem is the heavy dependence on imported food for the basic nutrients. The cereals which are imported provide the largest contribution to the calories and protein content of the diet of the people of the Commonwealth taken as a whole. This food group also makes a proportionately greater contribution to the diet of lower socio-economic groups whose consumption of animal products is relatively low.

The food supply situation existing in the Region and its consequential effect on the food and nutrition status is largely the result of the known poor performance of the agricultural sector together with other social and economic features.

2.2 ISSUES IN THE FORMULATION OF FOOD AND NUTRITION STRATEGY

a) Social and Economic Factors

The malnutrition problem manifests itself as a health problem but is largely the result of social and economic conditions which are fashioned by factors such as rapid population growth, unemployment, low productivity in agriculture, serious economic inequalities in the society, poor environmental conditions, lack of knowledge about locally-produced foods and even myths and superstitions about them. Solutions to the food and nutrition problems in the Region must therefore include measures to improve the social and economic conditions of the population.

b) Factors affecting Food Demand

These include per capita income and its distribution, food subsidies, consumer education, control of unscrupulous advertising, particularly of baby foods, nutrition education, supplementary feeding programmes and population policy.

c) Factors affecting Food Supply

Included here are the pattern and level of food production and prices, transportation, food marketing, storage and processing, the nutritional value of various foods, food exports and imports, food standards and food safety.

d) Factors affecting Intake and Utilization of Food in the Human Body

Of relevance here are factors such as pregnancy spacing, lactation, breast feeding vis-a-vis early weaning, infection, parasitism and immunisation practices. In a number of Caribbean countries 20-30% of all deaths are due to infectious and parasitic diseases. This serious situation is largely due to the lowering of body resistance by malnutrition.

e) Developmental Objectives

Improving the nutritional status of the population is only one of the developmental objectives of the Region. Given the Region's present economic situation which is characterized by poor performance of the agricultural sector, serious balance of payments problems, and high unemployment levels, cognisance must be taken of these and other developmental objectives.

f) Human Development Factors - Education and Culture

The objectives of the Regional Food and Nutrition Plan suggest the need for changes in the Caribbean way of life, especially in respect of attitudes to agricultural and rural pursuits, consumption patterns, the preference for goods and services provided from extra-regional sources and the corresponding prejudice against goods and services produced within the Region. The objectives of the Plan also suggest that certain new skills, techniques and approaches must be developed if the Plan is to be successfully implemented. The implementation of the Regional Food and Nutrition Plan therefore has implications for education; indeed education has an important role to play in laying the foundation and supporting the super-structure necessary for the achievement of the objectives of the Plan, as indeed of regional development generally.

Examinations of the needs of the Region have indicated that the education systems as at present operated are inadequate to satisfy the aspirations of the Caribbean peoples for economic development and self-sufficiency. It has been observed that certain parts of the systems are seriously under-developed, that the systems still tend to over-emphasize literary and classical studies at the expense of manual and technical skills to which they assign an inferior status and that they tend to operate in isolation from the world of real work. It now remains for proposals for educational renewal formulated on the basis of these observations to be speedily translated into strategies and programmes designed to respond to the developmental needs of the Region. It should be noted, however, that educational approaches alone would be inadequate to produce the necessary change in attitudes, and must be supported by improvements in the physical and service infrastructure.

g) The Communications Challenge

The major challenge facing communications activities in the context of a Food and Nutrition Strategy for the Caribbean Community lies in the formulation of more "people oriented/people involved" plans of action alongside technical considerations to foster changes in attitudes towards the growing and consumption of food in the Region.

The role for communications in a Food and Nutrition Strategy for the Caribbean Community, therefore, should be one aimed at eliminating the existing distances between the planner and plan on the one hand and the executor and beneficiary on the other, and creating new channels to accommodate the interplay of the widest possible viewpoints in the elaboration and implementation of the plan.

This would require the development of a communication system that transfers information from planners to these various entities and vice versa. The development of a system of communication between the various regional agencies involved and between regional agencies and national governments would also be a very important factor to be considered.

i) Community Participation

An essential part of the Strategy would be, in consultation with the specialists in health education and nutrition education, to help the people of the Caribbean community, children as well as adults, using all the available means and media, to identify for themselves the chief food and nutrition problems; to feel personally responsible for solving them; to make full use of the available services, especially in agriculture, education and health, and so to arrive at solutions of the problems by the actions and efforts of the people themselves.

2.3 THE MULTIDISCIPLINARY APPROACH

The issues raised above clearly indicate that merely increasing food supplies and providing the traditional health services will not automatically solve the food and nutrition problems. These problems are caused by more fundamental factors requiring elimination of a wide range of social, cultural, economic and political constraints. Effective food and nutrition planning would therefore need involvement of various disciplines.

Section III

CONCEPTUALISATION OF A REGIONAL FOOD AND
NUTRITION STRATEGY

The present efforts to advance the implementation of the Regional Food Plan are characterized by the major emphasis being placed on the identification and implementation of agricultural production-oriented projects, these activities being carried on outside of any regional development framework.

This has led to a number of problems:

- i) there is some doubt as to whether the priorities being placed on some of the production projects are correct in the sense that there are a number of competing developmental objectives which need to be satisfied. These objectives can only be analyzed and priorities determined within an overall theoretical framework which considers their individual claims, identifies options for

satisfying them and allows making reasoned choices. This calls for an approach operating at the sector level as opposed to the subsector level analyses on which the projects have been based;

- ii) given the present orientation of the analyses it has not been possible to incorporate into the present efforts some vital inputs needed to ensure broad-based participation to improve social or nutritional standards. This is so since emphasis is being placed mainly on production projects;
- iii) additionally the Plan has not yet examined projects through which people can be educated about the problems which they face and the possible solutions, the resources available to them, and how these resources can be utilised to improve their socio-economic and nutritional status. So far there has also been little effort at seeking the involvement of the "actors" - in the elaboration and implementation of the Plan;
- iv) without an overall operating framework, which would act as a guide, it has been increasingly difficult to co-ordinate the activities of the various agencies dealing with the Regional Food Plan. This has caused work on the Plan to proceed with a certain lack of direction and with numerous instances of overlap of effort.

The further elaboration of the Regional Food Plan would therefore require that additional elements be taken into consideration to allow the Plan to move forward on a much wider front. In order to achieve this an operational framework within which these various elements can be accommodated and the resulting activities co-ordinated will need to be devised. It is towards developing this operational framework that current efforts are being directed.

This, of course, does not mean that efforts to increase the supply and more efficient utilisation of food are being slowed down. Hence, there continues to be identification of a continuous stream of projects under the umbrella of a Food and Nutrition Strategy. Development of the Food and Nutrition Strategy would therefore have to incorporate these projects already identified and/or under way and would have to identify, in itself, additional projects. In addition, the Strategy would need to encompass an appropriate regional institutional framework which would incorporate a "Regional Project Implementation Pipeline".

Finally, the Strategy would have to include some mechanism for continuous monitoring, evaluation and modification. The Strategy would therefore need to be formulated in the context of a rolling plan under continuous review and modification, the result of which should be the continuous identification and channelling of projects into the "Project Implementation Pipeline".

Section IV

PRELIMINARY WORK

To initiate work on the elaboration of the Strategy an Intra-CARICOM Secretariat Committee was set up in January 1979 with Terms of Reference:

- i) to assemble and review all the existing material and on-going projects on Food and Nutrition activities;
- ii) to formulate a detailed Work Programme aimed at the preparation of a draft comprehensive Food and Nutrition plan for the Region including a time frame;
- iii) to identify the technical assistance requirements of the identified Work Programme;
- iv) to suggest a mechanism(s) for the co-ordination and reporting functions of the Work Programme;
- v) to consider an activity schedule for the finalisation of the draft Food and Nutrition Plan; and
- vi) on the basis of (i) to (v) above prepare for consideration by the Secretary General, a paper setting out proposals for the execution of a plan of operation for formulating the Food and Nutrition Strategy.

The Committee's report included identification of studies relevant to developing the Strategy, (possible or known) implementing agencies and an institutional structure (Annexes I and II). Subsequently, meetings with Heads of Regional Agencies and with Heads of International Agencies discussed the report, endorsed the approach, identified responsibilities and indicated areas where on-going activities could be incorporated or

assistance afforded. An Inter-Sectoral Committee whose job it is to organise a work programme, monitor and report progress and finalise the Strategy has been appointed and begun work.

Generally, the multi-sector, multi-disciplinary approach is intended to meet some of the limitations of the current process. Regular consultations at national and regional levels are intended to interface activities under the RFNS, those of national Governments and those of international agencies. This approach, it is felt, would allow for better agency activity co-ordination, and streamlining of effects thus providing for a more rational channelling of resources into Agriculture.

LIST OF STUDIES/DOCUMENTS

A. GENERAL

1. Overview of Caribbean Food and Nutrition Problems
2. Priorities of Food and Nutrition Strategy
3. Objectives of Food and Nutrition Strategy
4. Food and Nutrition profiles for each country of the Region
5. Food and Nutrition surveys and/or policy for each country as now available
6. Data on the state of Food and Nutrition of the peoples of the Commonwealth Caribbean
7. Socio-economic factors affecting nutritional status in the Caribbean

B. HEALTH AND NUTRITION

1. Regional Health Policy
2. Maternal and Child Health Strategy
3. Nutritive Value of Caribbean Foods
4. Family Planning
5. Supplementary Feeding
6. Nutritional Anaemia
7. Safety of Food
8. Environmental Health Strategy
9. Food Standards

C. COMMUNITY PARTICIPATION

1. Consumer Education
2. Nutrition Education

D. STAFF EDUCATION AND TRAINING IN FOOD AND NUTRITION

E. STAFFELLANCE AND MONITORING THE NUTRITIONAL STATUS OF CARICOM REGION

F. AGRICULTURE

1. Overall agricultural sector study - objectives, performance and strategy
2. Livestock subsector study
3. Fruits and Vegetables subsector study
4. Oils and Fats subsector
5. Cereals and grain legumes subsector study
6. Fish and fish products subsector study
7. Spices and Essential Oils subsector study
8. Bulk purchasing of agricultural inputs
9. The production of seeds and of other propagating material
10. The supporting services (transport, research, training, etc.) required to back up these subsector programmes
11. (a) Marketing/Prices/Subsidies of Food Items
(b) Food Import and Export Policy
12. Problems of Food Storage and Preservation especially Nutritional Aspects and Health Effects

G. EDUCATION

1. (a) An assessment of the objectives of the Food and Nutrition Strategy and the educational requirements for satisfying those objectives
1. (b) A survey of the existing educational systems with special reference to the content, techniques and strategies used in the teaching of agricultural science, home economics, health and nutrition
1. (c) On the basis of the two above studies devise an educational strategy in support of the Food and Nutrition Strategy
2. Population Education

H. COMMUNICATIONS

1. (a) A study of existing programmes and activities of national governments and regional institutions directly connected with the Regional Food Plan to determine exactly the scope and implementation of the Plan as a whole, and to establish the exact role of the individual Governments and institutions in the Plan, as well as the objectives of their programmes
1. (b) A study of all Plan programmes and activities devised by existing national groups, particularly at the level of the ordinary citizen of Caribbean society
1. (c) A study of existing communications components of the various programmes and activities in food and nutrition planning by the national governments and regional institutions to determine the method of contacts with one another and the people of the Caribbean Community as a whole
1. (d) An examination of existing communications systems within relevant regional institutions directly connected with the Food Plan with a view to determining how they can be improved to serve more effectively the needs of the Food Plan within the broader framework of the regional integration movement
1. (e) An examination of the communication channels between regional development institutions and national governments with a view to improving them
1. (f) A study of the role thus far of the conventional mass communications tools (press, radio, television and advertising) with a view to determining how they have been used in promoting the Regional Food Plan, the effect of their messages so far, and to examining ways in which the approach to and cost of using mass communications in promoting food production and nutrition could be modified or enhanced
1. (g) Constraints to the adoption of new agricultural technology and better nutritional habits
1. (h) On the basis of the above studies to devise a communications programme and suggest machinery for servicing the institutions directly connected with the elaboration and implementation of the Regional

Food Plan; to be the nerve centre of information relating to the activities of these institutions in the context of their strategies on food and nutrition; to be the constant monitoring agent for all these activities, and the initiator of communications projects aimed at keeping the ordinary citizen abreast of the general planning process, and likewise, the planner in touch with the reaction of the ordinary citizen to their programmes.

I. RURAL DEVELOPMENT

1. Rural Development (existing situation, objectives of rural development policy, means of achieving objectives)

J. RESEARCH

1. Research (identification of the kind of research required to back up the Regional Food and Nutrition Strategy)

K. PROJECT IMPLEMENTATION PIPELINE

1. Elaboration of a regional institutional framework including a "Project Implementation Pipeline".

INSTITUTIONAL STRUCTURE FOR A MULTIDISCIPLINARY
APPROACH TO DEVELOPING A FOOD AND NUTRITION
STRATEGY

In order to elaborate a complete institutional structure, it would seem necessary to identify the various bodies within the Region which might be involved in the exercise at various levels, and to build from the identification.

(a) Regional Level

- (1) Council of Ministers
- (2) Standing Committee of Ministers

(b) National Level

- (1) National Governments
- (2) National Agencies

(c) Technical Level

- (1) Committees of Regional Officials
- (2) Agencies: Regional

CCS, ECCM, CDB, CFNI, CFC, CARDI, WISCO,
CANA, Universities

International

ECLA, UNDP, BDD, PAHO, CIDA, Commonwealth
Secretariat, EEC, USAID, UNICEF, FAO, etc.

Field Teams

CARDATS, MSRPP, etc.

At the technical level multidisciplinary approach would seek to integrate the activities of these agencies towards developing a Regional Food and Nutrition Strategy.

The following institutional structure is envisaged for the multidisciplinary approach as a mechanism for the co-ordinating, monitoring, reviewing and reporting functions. The composition element is hereby defined, knowing that numbers could more appropriately be determined at a later stage.

The approach adopted here assumes that the roles and functions of the institutions identified above will remain unchanged and seeks to utilize the resources available within these institutions as efficiently as possible in developing the Food and Nutrition Strategy.

At the regional level the primary function of these institutions would be to make policy decisions on the recommendations emanating from the Food and Nutrition Strategy. At the national level these institutions, with assistance from other regional institutions, would seek to implement the agreed-upon recommendations.

The structure will function as follows:

- i) the Heads of Agencies Committee will be the central committee. The Secretary General would call together the heads of relevant agencies to discuss this document. The proposals emanating from this Heads of Agencies Meeting would then be put to the Council of Ministers for approval;
- ii) the Heads of Agencies Committee would then appoint a Project Leader for each sector - Health, Agriculture, Education, Communication, Rural Development - allocate the required resources for the studies to be carried out and appoint a Team Leader for the overall project. An Inter-Sectoral Committee composed of the Project Leaders with the Team Leader as Chairman would be simultaneously set up to co-ordinate the work programme;
- iii) the Inter-Sectoral Committee would present to the Heads of Agencies Committee, for their consideration, a Draft Regional Food and Nutrition Strategy within the prescribed time period;
- iv) after the finalisation of Draft Food and Nutrition Strategy, a multidisciplinary meeting of regional and extraregional technicians/planners would be called to consider the draft;
- v) based on the recommendations emanating from the above meeting, the Inter-Sectoral Committee would reconvene to finalise the Food and Nutrition Strategy for submission to the Heads of Agencies Committee;

- vi) the Heads of Agencies Committee would then submit the Strategy to the Council of Ministers for approval, but not before the Strategy had been referred to the relevant Ministers - Health, Education, Agriculture, etc. - and to national Inter-Ministerial Food and Nutrition Councils where these exist;
- vii) based on the decisions of Council, the relevant recommendations would then go to the appropriate Standing Committee of Ministers to be incorporated into their on-going work programme;
- viii) the Heads of Agencies Committee would continue to meet as required to monitor the Plan, to ensure its implementation in harmony with the Strategy, and to suggest modifications where necessary.



INSTITUTIONALIZATION OF TRAINING IN AGRICULTURAL PLANNING AND
PROJECT ANALYSIS IN THE CARIBBEAN - PROBLEMS AND EXPERIENCES*

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Introduction

The purpose of training for those engaged in the agricultural planning process is to improve their technical capabilities at all levels; this would include all levels of project formulation and project implementation. Training thus plays and will continue to play a fundamental role in building the national capacity to develop relevant Caribbean projects and analyse the future dependence of these territories on external technical assistance. The benefits which accrue to an institutionalized national capacity to perform project development activities need not be enumerated here.

It is against this background that this paper, while restating the need for effective planning in Caribbean agriculture discusses some of the problems experienced and associated with the institutionalization of training in project analysis. Finally, the paper alludes to a Seminar on Agricultural Project Analysis in Barbados to highlight some of the operational problems and issues faced in initiating training programmes.

The region referred to in this paper comprises twelve territories classified into two major groups: the More Developed Countries (MDC's): Barbados, Guyana, Jamaica, Trinidad and Tobago and the Lesser Developed Countries (LDC's): Antigua, Dominica, Grenada, Montserrat, St. Kitts-Nevis-Anguilla, St. Lucia, St. Vincent. Belize is usually grouped with the LDC's.

* Contribution to Expert Meeting in Kathmandu, Nepal, on "In-Service Training Approaches for Agricultural Project Analysis in Small Developing Countries".

Agriculture and fishing represent the main activities of the region's people and have been the major source of their sustenance for centuries. Most of the many small farmers depend upon plantation wages to supplement their inadequate home grown production which to a large extent reflects the skewed distribution, structure and dualism with respect to Caribbean agricultural resources. It is typical for a small number of large plantations to occupy the bulk of the land in contrast to a vast number of small farmers occupying small quantities of the worst land, divided up into tiny lots.

Nature of Planning

It is generally correct to say that planning for economic development in the Caribbean is a relatively new phenomenon. During the last two decades or so, national planning for economic development of one sector of the overall economy (sectoral planning) has become widespread and so today there exists a multi-year agricultural development plan (in some form) for the majority of the territories of the Caribbean region.

Indeed this new preoccupation is referred to by some as the "planning crisis" and there are diverse opinions about this "crisis" - suffice it to say, that the new crisis reflects the current and growing concern of the Caribbean people with the place of agriculture in economic growth, the concern with food supplies, and the concern that vigorous programme action is urgent and necessary if agriculture is to grow and move at acceptable speed.

The region must develop a strategy of agricultural development that responds to the decline of plantation agriculture, and the increased relative importance and rise of small scale independent farming. Until now, policy-makers have been slow in action to exploit the potential of small scale farming. Existing plans are ill conceived, and are insufficient with respect to long-term incentives and inputs that would enable small farms to achieve sustained growth and development. The fact is, that planning for agricultural development must be substantially improved.

A development strategy for Caribbean agriculture must allow for the two distinct levels of economic development of the region which exist side by side. On the one hand there are the MDC's which are characterized by

relatively high per capita incomes, and reasonably matured non-agricultural sectors capable of generating employment, savings for investment, and foreign exchange. On the other hand, there are the LDC's which are characterized by relatively simple and non-integrated economies with heavy dependence on their primary agriculture for economic survival. A further dimension to the problem is that of size: relative to the MDC's, the LDC's are small in terms of geographical size, population and resources.

It follows therefore that for the former (MDC's) in terms of the planning approach great emphasis would be put on programmes, the stress being on the management of inputs, monitoring and control and evaluation, and the development of the effective linkages of various economic institutions. With respect to the latter (the LDC's) emphasis would be on the integrated development project approach to the development of their agriculture.

It is considered that the objective of national agricultural planning is to determine appropriate strategies and policies which will give effect to the best use of a country's natural, human and financial resources, in order to accomplish its political, social and economic goals. Project formulation is seen as one main instrument of planning and implementation. It is through the project cycle identification-formulation-implementation and evaluation that goals, strategies and policies can be translated into action. But these activities are highly dependent on (a) financial resources; (b) appropriate institutions; (c) adequate and trained manpower. This paper concentrates its attention on (c) and merely comments on (b) to highlight the institutional setting in which agricultural planning takes place and its influence on Agricultural Planning and Project Analysis Training Programmes.

Technical Capability for Planning

Generally speaking, the technical personnel available to agricultural planning in the Caribbean are in short supply. Those in positions are either trained in Economics or Agronomy. Formal training in Project Analysis is a recent occurrence, and is usually undertaken by an external agency or institution like the World Bank, as there are as yet no organised programmes of training in this discipline commonly offered at Universities.

It is conceivable that the University of the West Indies in conjunction with Caribbean Agricultural Development and Research Institute (CARDI) or any of the existing regional agencies CDB, CARICOM, ECCM, may consider initiating a programme to increase the supply of these scarce personnel.

The Training Needs of Planning.

Although it is generally recognised that the Agricultural Planning Unit constitutes an integral part of the agricultural planning mechanism there is not as yet established in each Caribbean State such a unit due partly to budgetary constraints and partly to the fact that there is a shortage of trained personnel. In this connection a USAID project entitled "Caribbean Agricultural Planning" has been recently formulated and attached to the Eastern Caribbean Common Market Secretariat (ECCM) and the LDC's to assist in the setting up and the operation of agriculture planning units both in the ECCM and its individual States. The output of this project is extended to Barbados and among others it possesses a training component for Agricultural Planning and Project Analysis.

Regarding desired training needs of agricultural planning units' technical personnel, planning is considered more important than any of the general disciplines. Almost all of our agricultural planning units, where they exist, have strong interests in receiving training in policy and project preparation and evaluation. To a lesser degree, but equally important are the specializations connected with programming, budget preparation and evaluation for planning. Economics and statistics are considered the most important of the general disciplines.

Internal and external training are of equal importance. In-service training is the preferred type of internal training and special courses for training abroad are specified as the most favoured external training. These observations are important since they indicate the specific forms that training should assume. It can be deduced that preferred training is in the areas specific to the activities of the agricultural planning unit.

Regarding available types of in-service training programmes being offered by sectoral planning units and the frequency with which this training is offered, it is observed that very few planning units offer any type of training, and that most offer training only occasionally.

By and large there is an unsatisfied demand within the planning units within countries in the region for training in the areas of planning and project analysis. It is considered that the demands of the region call for three levels of training:

- (1) Long-term - This should be primarily a degree programme in Economics or Statistics;
- (2) Medium-Term - This represents formal post graduate programmes at the Masters or Doctoral level;
- (3) Short-Term - Three sub-levels of training are identified here:
 - (a) Specialised training for four to six months given to national technicians at the professional level in design, evaluation and implementation of development projects. This training would be based on an interdisciplinary approach and provides the theory for the application of analysis and programming techniques.
 - (b) In-service training - on the job training is very important and should be a regular feature of the agricultural planning unit programme. There is need for continual interfacing between staff of the planning unit and those of the various operating units.
 - (c) At the executive or management level training is necessary to understand the impact of a project and to make the decisions on project design and supporting actions necessary for success. This can be achieved through workshops, seminars and through travel to observe on-going experience elsewhere for professional interchange.

Training Institution

In terms of training, a further aspect of the distinction to be drawn between the MDC's and LDC's is the problem of size. The LDC's are too small to establish separate training programmes for agriculture. The MDC's by themselves do not cover the range of agricultural problems in the region and would not adequately meet the planning needs of the LDC's.

Therefore a strong case exists for the development of the "distance education" approach whereby training is based on one island, probably an MDC, with linkages to all the other islands and to the major Caribbean education and other regional institutions.

This "distance education" approach will take full cognizance of the peculiar economic developmental characteristics of the islands both within MDC's and LDC's and between MDC's and LDC's, it will use the training experiences wherever they exist. For example, Barbados has accumulated relevant experiences in training for agricultural planning over the past four years which could provide some basis in establishing a regional training institution. In addition, the USAID/ECCM agricultural planning project should be soon able to generate new problems and experiences.

The recent emergence of a number of Caribbean institutions connected to agricultural development suggests some urgency in tackling the task of providing a flow of competent agricultural planners at both the national and regional levels. For example, the Caribbean Food Corporation has as its major task the realization of a Caribbean Food Plan, and the CARICOM Secretariat is charged with the responsibility of effecting a regional common agricultural policy. All these must be done against a background of Caribbean MDC/LDC variable economic structures and a chronic shortage of trained personnel.

The Barbados Experience - "A Seminar
on Agricultural Project Analysis"

The Background

The Barbados experience with respect to an in-service training seminar in agricultural project analysis is presented here to serve as a case study and a rough guide towards the development of a Caribbean training programme in project/programming analysis.

Barbados has a population of approximately 250,000 and a total area of 40,500 hectares. An estimated 24,300 hectares can be used for agriculture. Some 18,500 hectares of land is continually under sugar, and a much smaller portion under vegetables, fruit trees and root crops. Agriculture is

particularly important for its contribution to foreign exchange by way of producing - especially sugar for exports.

The Agricultural Planning Unit in the Ministry of Agriculture, food and Consumer Affairs has the responsibility for agricultural planning. It must submit its sector plan to the National Planning Division in the Ministry of Finance and Planning which incorporates the plan into the National Plan. The latest plan to be published is the Development Plan 1979-1983.

In addition to the Agricultural Planning Unit, operating units under the Chief Agricultural Officer may formulate and implement programmes without going through the APU. Further efforts of the Planning Unit are aimed at developing a more co-ordinated planning mechanism within the Ministry of Agriculture.

Other government controlled agencies such as the Barbados Marketing Corporation, the Agricultural Development Corporation and the Agricultural Credit Bank form part of the planning machinery. In addition, there are privately controlled agricultural organizations which play a role in the planning process.

A UNDP/FAO Project to assist the Agricultural Planning Unit in all its activities commenced in April 1975. Among others, one of its immediate objectives was to provide in-service training in the field of agricultural planning, programming, project analysis and farm management. Against this background, discussions took place with the Development Research and Training Service, Policy Analysis Division on organising training for Barbados. It was decided that a Seminar on Agricultural Project Analysis would be mounted, and that this Seminar would be the first step to form the basis for an in-service training programme for the Ministry of Agriculture, Barbados.

Dr. Packard of FAO was assigned as Co-Director and the Seminar took place in Barbados during the period 21 February to 11 March, 1977.

Seminar Evaluation

There was wide and enthusiastic participation in the form of guest lectures and discussion leaders in addition to the 14 participants who attended daily through the Seminar.

A formal evaluation was carried out on the content and presentation of each session, and on the overall effectiveness of the Seminar. Final conclusions were drawn up.

Participants lauded the materials used and the Session presentations. It was felt that the subject of project analysis, though obviously not covered fully, was a good basis for carrying on project work both within the Ministry and within the other agencies concerned with agriculture in Barbados. The sessions on policy and institutions were considered useful and important additions to the technical work on project analysis.

Particular points raised in the seminar and given emphasis in conclusions were as follows:

- (a) The project approach ought to form the basis for work in the Ministry and statutory bodies concerned with agriculture.
- (b) Whilst project analysis is the analytical approach desired, it was recognised that the development of programme analysis (agricultural sub-sector analysis) was absolutely essential for Barbados.
- (c) It was clearly demonstrated that there was need to increase communication among technical officers and planning officers of the Ministry and with the statutory bodies and private sector on the project approach and to develop programme analysis.
- (d) The need for co-ordination of programmes of work within the Ministry covering both the technical and economic urgently calls for the re-organisation of work programmes and procedures of the Ministry.
- (e) Policy guidelines and increased co-ordination between the Ministry and statutory bodies need to be developed and improved in future.
- (f) In developing the project/programme approach, it was recognised that data on technology of production, processing storage, distribution in agriculture are deficient, and it was recommended that the agriculture division of CDB should

be approached and a working party formed on developing data collection and dissemination of technology in the agricultural sector. (A statistical unit is being set up in the Agricultural Planning Unit with the assistance of USAID which will include inter alia the data collection referred to above).

- (g) It was recognised that the Ministry should take the lead in developing more effectively a centre on information on agriculture in Barbados, through collecting and collating the already large but scattered reports, documents, working papers, research, etc. in existence.
- (h) It was recognised that development of the agricultural sector in Barbados depends upon a coherent and consistent land use policy, and that increasing reliance on land use planning should take place in future. A working party should be formed with the office of the Chief Town Planner in this regard.
- (i) It was recognised that inter-sectoral planning is necessary and that in particular tourism and agriculture need to be more effectively co-ordinated. In that regard, it was emphasised that data and studies on food consumption are lacking, and that the Ministry should develop a working plan and implement improved household surveying.
- (j) It was recognised that emphasis on project/programme analysis for Barbados should be coupled with attention paid to regional co-operation, in particular the development of an effective Caribbean Food Plan.
- (k) Programme analysis, it was emphasised, broadens the scope of the work of the Ministry and other agencies concerned with agriculture to improve co-ordination of activities within the sector. Private sector agents need to be included, and this applies to future training as well.

- (1) Finally, the major recommendation of that seminar with respect to training was that the Ministry should establish an in-service training programme for agriculture.

In-service Training Programme for Agriculture

Participants felt that training can be and should be carried out in Barbados in short, intensive periods, for Ministry officers, statutory bodies, private sector and other interested agencies. The emphasis should be on relevant practical training, which could be immediately applied. The framework for this in-service training approach would be broadly that of project and programme analysis.

The development of a series of course workshops and seminars geared mainly to the agricultural sector, calls for establishment of an administrative framework. What is needed is an officer responsible for the development of the content of the programme, its scheduling, selection of participants, materials, etc. Moreover, and of great importance for Barbados, this training officer would identify interested bi-lateral and multi-lateral agencies, interested in assisting in-service training through provision of visiting lectures, materials, etc. Barbados is geographically able to take advantage of travels of professionals concerned with agriculture who are travelling within and through the Caribbean.

The immediate task facing the Ministry of Agriculture is to acquaint the administrative and technical heads with the project programme approach and solicit their agreement and co-operation to develop the in-service training programme. This was emphasised by the participants and generally agreed upon as the pre-requisite to further development of training.

SUMMARY

Agricultural Structure

The paper emphasises the decline of plantation agriculture as the basis for agricultural plan and project development in the Caribbean. With the decline of this plantation agriculture, it is felt that small holder agriculture must now be emphasised. The question is how? Should there be, within the framework of projects and programmes "total packages", or selected

inputs, or emphasis upon monitoring and policy?

MDC's vs. LDC's

In order to put the agricultural planning and development problems in perspective, it is necessary to distinguish between the group of MDC's and the group of LDC's. For the former, the attributes are high per capita income, the relative importance of non-agricultural sector, in generating employment and income in foreign exchange, but on the other hand, the indirect importance of agriculture for controlling prices and for saving on foreign exchange.

In terms of the emphasis to be placed on projects and programmes, programmes would seem to be relatively more important, the stress being on the management of inputs, monitoring and control and evaluation, and the development of the effective linkages of the various economic institutions within the particular MDC's. With respect to the latter, the LDC's, distinguishing features are the relatively small sizes in terms of population and other resources, their need to look at the integrated development project approach, that is to develop a "total package" approach to the development of agriculture. In other words, given the relatively simple and non-integrated character of their economies, the project approach is essentially synonymous with planning for these LDC's.

Institutional Structures

Except for some countries in the LDC's, the planning unit approach is well developed throughout the countries of origin, so that this provides a basic unit upon which to build for training and planning. Sectoral planning for the MDC's is most likely to involve the programming approach, whilst for the LDC's a few major integrated development projects may be in effect equivalent to sector planning. In both the MDC's and LDC's, one major issue for planning and for training is the ineffective or non-integration of planning, programming and budgeting.

Training

In the first instance training should be aimed at the planning units. In terms of project identification and formulation, the training should

include inter-disciplinary technical officers. For the development of the programme approach, that is monitoring and control, integration must be sought as indicated above among planning, programming and budgeting. Other types of training which may emerge in relation to these basic approaches, are training on project management, and what might be characterised as increasing awareness of projects and programmes by Government officers generally.

One additional aspect of the distinction to be drawn between MDC's and LDC's is the problem of "size". The LDC's by and large are too small to have separate training programmes. The MDC's by themselves do not cover all of the important problems which exist in the region particularly with respect to agriculture. Therefore, it is necessary to develop a "distance education" approach whereby training is based on one island, probably an MDC, with linkages to all the other islands and to the major Caribbean education and other regional institutions.

The Barbados Seminar: Lessons to be drawn

Finally, it is therefore possible to summarize the experience of the Seminar conducted in 1977, in order to identify its strengths and weaknesses and to assess how training could be developed for the region based on this experience.

Although essentially a national effort, the Barbados Seminar points to a range of expectations and needs of the participants and to the wide variation in their background. It strongly supports the view that the training effort should be planned, organised and indeed institutionalized. Further it demonstrates the need for the provision of adequate information on both the agricultural and non-agricultural sectors. In other words a sound statistical base is an important factor in project analysis. Even at the national level the project versus programme analysis is effectively shown up by the way of sub-sectoral analysis.

PLANNING THE ENERGY SECTOR

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The dramatic increase in oil prices since 1973 has resulted in a massive escalation of the cost of energy for many oil-importing, energy-deficit countries, at the same time that it has meant tremendous windfall gains for the relative handful of oil exporters. In the Caribbean for example, Jamaica has seen its imports of oil, which account, for about 90 percent of its energy consumption climb from 8 percent of total imports of goods and services in 1972 to 16 percent in 1978. While roughly the same amount of oil was imported in 1978 as in 1972 (16.1 million barrels) its value shot up by some 250 percent from \$55.5 mn U.S in 1972 to \$193.9 mn U.S. in 1978.

Such massive increases in energy costs have forced policy makers in almost all countries to now accord to energy a central place in their policy formulation. In the circumstances, planning the energy sector and devising sensible policies for coping with the problems has become a matter of both urgency and importance. The present paper seeks to outline heuristically how energy planning can (ought to) be approached. It is based on AFROSIBER, which is a nine point planning method suitable for use for comprehensive national planning^{1/} and we take the Caribbean region as our referent point.

The first step in planning the energy sector and devising policies related to energy use involves a systematic evaluation of the particular country's situation. There are four aspects to this. First of all, energy planning, like any other macro-level planning, requires that certain basic pre-conditions be satisfied for it to be "successful".^{2/}

^{1/} Farrell, Trevor. "How to Plan: AFROSIBER - The Nine Point Planning Method and its application to Development Planning", U.W.I., St. Augustine Department of Economics (mimeo).

^{2/} Venezuela, Ministry of Energy and Mines, Governing Document on Venezuelan Energy Policy, Caracas, May 1979.

If these pre-conditions are not satisfied at the start of the planning exercise, then their fulfillment becomes either a proximate or a concomitant objective of the planning process. What then are these pre-conditions?

They are six in number.

(1) Planning for energy, like planning the national economy, or the agricultural sector, or education, requires first of all that an effective organizational apparatus exist or be created, charged with formulating, executing, coordinating, monitoring and reviewing plans, projects, policies and programs with respect to energy. This of course sounds obvious, even trite, once stated. It is enough however to consult actual experience in many countries to see that it is so often ignored in practice that it needs to be stated quite explicitly.

(2) The second precondition, is related to the first. This is that there must exist, or be developed, a cadre of people with the necessary specialist skills and knowledge who can undertake the business of planning and executing policies and programs. A review of the Caribbean situation shows that in several countries, the first pre-condition - an effective organizational apparatus for energy planning and policy formulation - is not yet met. This is in part due to the failure to satisfy the second pre-condition - i.e. the finding, recruiting and training of people with the specialist skills in energy and planning that are necessary.

(3) Ultimately, one cannot plan for something over which you have absolutely no control. There is a certain basic minimum degree of control that a country must be able to exercise over its energy sector as over any other sector, for it to be able to plan effectively.

(4) The fourth pre-condition for successful planning relates to a more subtle and intangible factor. For planning to be carried out properly, there must exist in the system a sophisticated understanding of planning, exactly what it can accomplish, what its real advantages are, where its limitations lie, how it has to be carried out, what are

its organizational and political implications and what its costs are in terms of time, resources, and the frustration that can come from doing nothing at times when action seems desperately needed, because something called "planning" is going on. This is related to the fifth pre-condition that there exists the will to plan on the part of the top policy makers in the system. In the absence of this, technocrats charged with planning are likely to find themselves frustrated and candidates for hypertension unless they develop psychological safety valves.

(5) Sixthly and very importantly, good planning depends utterly on good information. Good, sound policies with respect to energy have to be based on a thorough understanding of what the situation is in the country in question with respect to energy. Information is at the heart of this kind of understanding.

It is quite clear that in many parts of the Caribbean today, these six pre-conditions for good energy planning are remarkable chiefly by their absence or low-level of fulfillment. Thus one of the first tasks of energy planning, as with any other type of planning under Caribbean conditions, is to seek ways of addressing these problems.

The second aspect of evaluating the situation with respect to energy can almost be treated as yet another pre-condition. This relates to the fact that proper and comprehensive energy planning is really infeasible unless it accompanies some planning of other areas of the national economy. At a minimum, if other areas of the national economy are not planned, their future course must at least be seriously considered.

This is because energy, like manpower, is an input into other activities. Consequently, the desirable level of energy production for example, cannot be specified independently of the expected levels of activity in other areas of the economy. What will happen, or what is planned to happen in the various sectors of the economy, the new projects slated to come on stream, improvements in the standard of

living, are all likely to impact on the level of energy utilization in the society (ignoring for a moment the impact of technological changes in energy production). Energy planning therefore ideally ought to be detailed with the planning of the other major sectors and areas of activity in the national economy. Ensuring that mechanisms exist, or are created which provide for this linkage is the second aspect of our evaluation of the situation.

The third stage in the process is the formal assessment of the situation with respect to energy specifically. This involves the preparation of a set of studies which provide much of the basic background information necessary for decision-making. Analyses are conducted which permit the following questions to be answered:

(a) How much energy is consumed in the country in question? What has been the pattern with respect to energy consumption historically? What does it imply, if anything?

(b) What are the sources of the energy consumed? By source of supply; Domestic vs. Imported.

(c) What is the cost to the country of the energy consumed? This involves an analysis of the foreign exchange costs of imported energy, the cost of domestic production of energy, if any, and the relationship between energy costs and consumer welfare. Also other aspects of social cost such as the environmental impact of current and past patterns of energy use are taken up here. The costs involved in the pattern of energy usage are of course analyzed over time, and trends etc. identified.

(d) What is the relationship if any, between energy consumption and overall economic performance? How invariant is this relationship in the short, medium and long term?

(e) Next, a breakdown of the national economy into sectors/areas of activity is made and a detailed analysis is conducted of the consumption of energy by sector/area of activity, e.g. transport, bauxite, tourism, household, etc. For each sector, certain fundamental questions are asked,

and answers sought: How much energy is used? How much does it cost? What share of the costs of production of the sector's output is accounted for by energy? How does the sector/area of activity's energy usage compare with other sectors/areas of activity domestically and internationally? How energy intensive is the sector/area of activity? What substitution possibilities exist with respect to energy sources? How efficiently is the energy used? Can the same quantity of energy be used with greater net social benefit elsewhere, in some other more productive sector?

(f) Next comes an analysis of energy consumed by source of supply. Each source of supply, actual and potential, is studied, an analysis is made of the end uses to which it is directed, which end uses are feasible, which desirable. The comparative costs of alternative energy sources is investigated and alternative sources are rigorously compared using systems analysis techniques which enable a comprehensive assessment of each source to be made considering everything from security of supply, to transportation, distribution, storage, technologies involved, costs, prices, etc.

(g) Energy balances are computed which link sources of supply to intermediate and end uses. These balances permit the tracing of energy flows through the economy by use of a complex of matrices.

(h) The analysis of energy by source of supply and by end use permits an overall assessment of energy usage to be made: How much energy is consumed? Where? How justifiable are the sectoral, area, and overall levels of consumption? What conservation possibilities exist within the existing framework? How responsive is energy demand to price changes? How much do different alternative sources of supply of energy cost? (See Table 1).

(i) Special detailed analyses should be conducted of specific supply sources such as oil which may be particularly important to the country in question. Also, it is usually desirable to conduct a special analysis of electricity generation and consumption.

(j) Next comes an assessment of current and past policies with respect to energy and their impact.

(k) Finally, it is necessary to carefully analyze the international situation with respect to oil and energy and its current and future impact on the domestic situation.

It should of course be quite clear that this list of information needs that I have detailed here represents the ideal. No one who has attempted to do actual energy planning and policy formulation for under-developed, Caribbean-type countries will be under any illusion that, at least at the beginning, one will get all the information and answers desired.

Since prior to 1973, few people troubled themselves very much about energy issues, relatively little was done in the way of data collection with respect to energy issues. Consequently when one begins to develop energy planning there are initially enormous data gaps and correspondingly large areas of ignorance.

Over time, the situation improves and our ability to generate and assess the information necessary for properly carrying out this first step in the planning process improves pari-passu.

This means that one of the first objectives in energy planning in Caribbean economies, implicitly or explicitly has to be the improvement of the data base we work with and energy information systems more generally - especially as it relates to the international energy market.

Also, grievously imperfect as the data base may be initially, it does not mean that enough cannot be found or generated fairly quickly (in a few months), to enable some initial plans to be formulated and some policy initiatives to be decided.

Step # 2 - Forecasting

The second step in the planning exercise is forecasting. It is really intimately related to the first step - the assessment of the situation. In fact they are more two different phases of one step than two very distinct sets of activities. While in Step # 1, we evaluate the present and the past as relevant, in Step # 2, we continue the exercise with an evaluation of the future context or future situation. Planning really involves the interlinking of past, present and future.

In step # 2, then, many of the areas identified in step # 1 for analysis are dealt with again, but this time in terms of the forecasted levels of the particular variables. Now what this really means is that while conceptually, and for purposes of exposition, it is necessary and desirable to identify two distinct steps - assessing the situation, and forecasting, - in practice the two sets of activities are carried out jointly and concurrently and usually by the same set of people.

Thus the likely future demands for energy need to be studied, and not just current patterns of consumption. Projections of future demand for energy are made on both an overall, macro-economic level, and on a sectoral/area of activity level. The macro-level forecasts are generally made using fairly simple econometric techniques and are usually based on the close relationship between energy and output that seems to exist in many economies. Sectoral forecasts are made on the basis of projections of future levels of activity in these sectors. Thus it can clearly be seen here, how energy planning has to be related to other areas of planning.

Forecasts are also prepared of the future supply of energy, by source of supply. These involve considerations of such issues as the possibilities of domestic production of energy, the contribution of new, alternative sources of energy, security of supply problems, technological issues, and expected costs and prices of various energy sources.

Step # 3 - Resource Evaluation

The third step in the planning exercise involves a detailed analysis of the country's resource situation with respect to energy. This is where the country's current or potential energy sources are evaluated - oil, gas, hydro-power, geothermal potential, etc. The kinds of questions asked here relate to estimates of reserves of oil or gas, comparative costs of production of the various alternative sources, what lead times are necessary for the bringing into production of newly discovered resources, exploration programs and their organisation, evaluation of the potential for development of new energy sources - e.g. the use of minidams for hydro, the use of dormant volcanoes for geothermal energy generation etc.

Much of this work in Caribbean countries at this stage has to devolve onto the shoulders of engineers, geologists, geophysicists, etc., since so little is really known about our resource situation with respect to energy. It should also be clear that while the set of activities described here in this step are presented sequentially, in practice the work can be (and probably ought to be), carried out in parallel with the work in Steps 1 and 2.

Step # 4 - Setting Objectives

The first three steps in this planning method are really just about the generation, organization and interpretation of information. Once this work is done, the basis for formulating policies and programs is really laid. At the heart of plan and policy formulation is the setting of a complex of objectives and targets over some time horizon.

From the information derived from the first three steps, it may become clear that possibilities exist in the country for developing more indigenous supplies of energy, but that this will only have an impact in the medium or long-term. This, plus information that there is currently considerable wastage of energy in various sectors/areas of activity may lead to the identification of increased conservation as a short/medium-term objective, and the development of indigenous energy sources as a

medium to long-term objective. Or it may have become clear that the exploitation of certain substitution possibilities e.g. greater use of bagasse instead of oil in the sugar industry may lead to substantial savings. Achieving this then becomes a target of policy.

Some set of objectives then is specified. The list may read:

- (a) Hold down/reduce the foreign exchange cost of energy imports;
- (b) Expand the production and use of indigenous energy supply sources;
- (c) Increase exports to pay for the increased cost of energy imports;
- (d) Attract increased flows of foreign aid from OPEC countries to help finance oil import costs.

These broad objectives then have to be broken down into detailed (usually quantified) targets. These targets then become the real specific goals of the planners in the system.

It will be found that a choice has to be made of the fundamental philosophical and operational approach to energy planning. Briefly, there are three fundamental approaches possible. The first approach is essentially: "How can the cost/quantum of energy used in the economy be minimized?" This conceptual notion seems to govern current approaches to short and medium-term energy planning in many countries. It implies that the real concern of the planners is summed up more fully in the question: "Given desired levels of activity, how can the energy required to sustain them be provided most efficiently, at minimum social cost, and how will this cost be best financed?"

A second approach essentially asks: "For a given quantum of energy (defined as affordable given some specific configuration of costs and resources), what is the maximum amount of economic activity that can be obtained?" This involves seeking to vire the available energy to its most productive/most desirable uses and so use it most efficiently.

This approach which is implicit in the policy formulations of some countries in the depths of fundamental economic crisis boils down to a maximization under constraints problem in which some quantum of foreign exchange available for energy purchases say is the constraint, and the level of economic activity the objective function to be maximized. The first approach by contrast is akin to a minimization subject to constraint problem in which the maintenance of some desired level of activity acts as the constraint and the costs of the energy required to produce it are what is minimized.

The third approach is the canonical classical method of economics. This approach recognizes that neither the level of economic activity nor the cost of energy ought to be set "arbitrarily". The two interact and ought to be simultaneously determined at some "optimal point". In this approach then, the fundamental philosophical injunction would be to use energy from each source, and in each use, up to the point where the marginal social benefit just equals the marginal social cost.

The differences in the policy objectives from using these different approaches is profound. The second approach leads naturally to a policy which emphasizes conservation, the use of rationing, the cessation of certain activities in favour of others regarded as socially more valuable etc. The third leads to a willingness to import large quantities of expensive energy if it would be used in sectors which are extremely lucrative. It also tends to lead to the use of prices as signalling devices as opposed to state imposed rationing or state controlled deployment of energy to different users using a directive approach.

The third approach is logically, the correct one. The problem, however, is that it is almost impossible to operationalize meaningfully. In practice, the approach to energy planning currently in vogue in many countries, seem to be implicitly or explicitly a mixture of the first and second approaches. One can expect however that as the issue becomes better understood, the more subtle and sophisticated third approach will attract greater attention and greater intellectual effort will be devoted to successfully operationalizing it.

Steps # 5 and 6 - Strategies and their implications

Targets for energy policy having been worked out, the next step is to devise a set of strategies for actually implementing them. For example, a conservation target may require the use of public education techniques, the introduction of some system of taxes, subsidies and a new pricing policy. Increasing the flow of aid may involve the strategy of stimulating a change in oil-importing Third World countries currently acquiescent and supportive policies towards OPEC, and their taking a harder and more demanding line towards the organization.

The strategy having been devised, their implications, the repercussions from employing them etc., have to be worked out. Reactions by other sectors in the situation to the strategies deployed is to be expected, anticipated and allowed for in the strategy set worked up. At this stage, specific projects have to be identified, planned, costed, evaluated and compared. Here then the role of the project analyst is logically to be found.

Step # 7 - Calculation of resource balances

The complex of programs and plans for the energy sector and for the patterns of energy usage require certain resources to carry them out. Decisions to develop more hydro-power or to expand indigenous oil production necessarily involve certain demands on the society's resources of say foreign exchange in order to acquire the capital stock necessary. Similarly the successful carrying out of the proposed programs may require the deployment of various categories of specialized skills of the acquisition and diversion of land from other uses to the development of alternative energy sources. Conservation type programs whether they center on retro-fitting existing plant and equipment, or improving the efficiency of electricity generation may also impose some resource cost on the economy which needs to be calculated.

The costing of all the various programs and plans is undertaken through the computation of certain resource balances. These balances include foreign exchange costs, labour required, high-level technical skills needed etc. The computation of such balances is done as a method

of ensuring that the demands of the various energy projects and programs for resources, whether skilled manpower, foreign exchange or whatever, are harmonized with the quantities of these resources expected to be available.

Usually it will be found that resource demands and resource availabilities do not match up on the first iteration. This means that the set of programs and projects identified needs to be reviewed, pruned, other less costly ways of doing things found, and/or that ways be found to increase the quantum of resources initially thought to be available. The balances are then recomputed again, if necessary, until expected resource demands can be reasonably held to match expected resource availabilities.

A very important, very difficult and very tedious task should now be performed. That is, the time phasing of the various projects and programs. This involves a period-by-period analysis of the various projects to be undertaken, the resource flows necessary in each period, resource availabilities in each period, the implications for the whole system of the scheduling of the various projects etc.

A set of projects with together require a certain amount of foreign exchange or a certain number of engineers may appear quite feasible if assessed over say a five-year plan period and total resource demands compared with expected total resource availabilities of foreign exchange and engineers over the period as a whole.

But differences in the timing of resource needs as compared to the timing of the resources becoming available could throw the entire program into chaos and confusion. Thus if 80 percent of the foreign exchange is required in the first two years during the period of heaviest construction activity but 80 percent of the foreign exchange expected to become available will be received in the fourth year, serious dislocations and waste can occur if the problem is not anticipated and expedients devised to cope with it.

Step # 8 - Execution

Plans mean nothing unless they are executed. The purpose of planning is to inform action, not to act as a substitute for it. After plans are worked out and policies articulated and announced we face the task of implementation. This raises a different set of problems centered on politics, communication, organization, law, international relations etc.

This is not the place to elaborate on the problems of execution. However it may be useful to say a few words on what is often the most critical aspect of execution - organization.

Successful execution of energy plans like any plans involves certain basic organizational imperatives which are as fundamental to success as they are ignored. It is no use, first of all, to have plans concocted in a central planning office with minimal or no participation from the people who will be affected by the plan or who will have to execute it. Such plans are very likely to remain stillborn.

It is necessary to involve in the planning process, the line organizations who the issues affect and especially the people on the ground and on the line who know the particular problems and issues, who have to deal with them on a day to day basis, and who have crucial knowledge and expertise indispensable to proper planning. It is also important to involve people from a motivational point of view. It has been demonstrated over and over that people react negatively to decisions made which affect them but where they were ignored in the decision making process. And in the same way people are usually more highly motivated to carry out a task if they have been consulted and their participation sought, even if their specific advice is not accepted.

It is also necessary to have a system in operation whereby once decisions are arrived at they can in fact reach down into the line organizations and affect what they do. Naturally this implies certain things about authority, the ability to deploy power etc. It makes little sense for a central planning office to come up with an approved

energy plan which has certain implications for the generation of electricity, if it is unable to get the electricity company to carry out agreed on decisions.

Finally, we may mention another major organizational problem, and one which nullifies one of the most important advantages that planning has to offer - that is, ensuring effective coordination between the activities of different organizations.

Step # 9 - Review

At the end of the plan period, it is necessary to have a review. This is by now well-known to be sound managerial practice and should need in consequence no elaboration.

Some Specific Problems of Caribbean Energy Planning

Before concluding we outline briefly some specific problems that arise in trying to develop energy planning in the Caribbean region.

(1) First of all, outside of Cuba, planning is a poorly developed function in the Caribbean. Despite all the paraphernalia of several development plans and appropriately titled ministries and department, there is little experience with real planning in the region, and even less understanding of what planning is all about, how it should really proceed, what are its true advantages and limitations, and little grasp of the various subtleties that come with a sophisticated understanding of planning.

Consequently, energy planning is hamstrung by the weakness of planning as a whole, and the need to integrate energy planning with the forward planning for other sectors/areas of activity in the economy is vitiated by the absence or the anaemic nature of such sectoral activity - area planning.

(2) A second problem that arises centres around the difficulties associated with inducing effective cooperation in the region. It turns out that in several areas associated with energy policy - e.g. information acquisition and sharing, training of personnel, the purchasing and marketing of petroleum products - Caribbean cooperation would be desirable if not absolutely necessary. But bringing the territories together in meaningful joint ventures has proven hitherto to be a herculean task with few real lasting successes.

(3) It is very important that in assessing the situation, a careful study be done of the international oil and energy markets, and a careful, reasoned judgement about the likely future course of oil prices be made. Whether many of the alternative energy technologies currently being mooted, prove to be economic successes or economic disasters depends in large part on whether the relative price of oil continues to escalate or whether it falls.

If oil prices fall in real terms, many of the alternative energy technologies that governments hastily invested large capital outlays in, would be effectively bankrupted. Current conventional wisdom in the shape of forecasts providing each other as usual with mutual reinforcement, choruses with near unanimity that oil prices will continue to rise and energy costs go up. (The Age of Cheap Energy is over, etc. etc. etc.).

However conventional wisdom on the future of oil prices has proven in the past to be disastrously wrong - e.g. pre 1973 predictions of a falling real price for oil in the long-term. It may well be wrong again. One's guess as to what will happen here has the most important implications for the kind of energy policies a country adopts.

(4) The Caribbean region is characterized, inter alia, by its condition of technological dependence on the metropole and the underdevelopment of indigenous technological capabilities. This

general situation coupled with the region's considerable inexperience with respect to energy matters is fostering a reliance on metropolitan analyses and interpretations of the region's energy problems, as well as a near total dependence on metropolitan technologies and solutions for dealing with these problems.

There is a not inconsiderable danger that in the area of energy like in other areas previously, the region will once again fail to develop the technological capability that would enable it to identify, analyse and find solutions for its problems with full cognizance of the peculiarities and special characteristics of the particular environment that we are dealing with in the Caribbean.

ENVIRONMENTAL PLANNING IN THE
WIDER CARIBBEAN AND LATIN AMERICA -
CONSTRAINTS TO AN EFFECTIVE
REGIONAL INSTITUTIONAL STRUCTURE

By Everill McRae
Cooperative Republic of Guyana

Introduction

There are a number of factors common to most States in the Caribbean which impede the formulation and evaluation of development plans. These include, for example the weakness of the statistical and research bases. Plan implementation often suffers as well due to the dearth of locally available expertise and to financial constraints.

It is against this background, that the last decade has seen several initiatives to establish regional integration schemes. The 1977 initiation of attempts to promote a Caribbean Programme for Environmental Planning is both timely and appropriate. The principal objective of the Programme, as stated in the Draft Action Plan, is "to assist the Governments in the Region to improve the quality of the information on which national development and environmental management policies are based, and thus to improve the ability of each government to identify various options, and to make rational choices among alternative patterns of development and appropriate allocation of resources. Further more the Action Plan will establish a framework for activities requiring regional cooperation in order to strengthen the capability of the States and Territories of the Wider Caribbean Region to implement sound environmental practices and thus to achieve sustainable development of the region".

(E/CEPAL/PROY.3/4.3).

While the realisation of both objectives is crucial to the success of the Project the sources of weakness of Caribbean Regional Institutions suggest that, in the context of the political framework, the achievement of the first aim is likely to be less problematic than the second.

Summary

It is recognised that the countries of the Wider Caribbean and Latin America exhibit a number of similar features of environmental impact, as a result of the development process. There is then likely to be objectives common to most of the national policies for environmental planning

It is argued that the strategies for achieving these objectives and the institutional arrangements devised for implementing the strategies are likely to be varied in character. The reason being offered for this variance in methodology and organisation is expressed in the theoretical relationship between the national planning 'environment' and planning 'style' and the resultant institutional framework.

This variance does not, however, negate the benefits that can be derived from regional cooperation; it in fact brings into focus the caution required in formulating the techniques and institutions for cooperative action. Care should be taken to allocate to regional organisation only those responsibilities for which they can exercise authority. In other words the decision-making status of national governments should not be undermined.

Finally, in view of the financial constraints being experienced by most, if not all nations, it is felt that steps should be taken to ensure that the available assistance by the existing international agencies is being fully utilized. This begs the question of the existing structural and organisational capacity of the Region's states to exploit such assistance.

The immediate need as seen, is then for intensified assistance to nations to establish or improve their internal planning agencies. Educational programmes, seminars and discussions should continue on a regular basis, with the continued support and service of a Regional Authority (ILPES) and its Sub-Regional Secretariat comprising the CEPAL Group.

Effectiveness in Planning

In his discussion of 'the Nature of Planning and the Educational Response' at the Town and Country Planning School, (September 1977) Professor Trevallion made the compelling argument that planning as a process represents no more than carefully institutionalised replicas of the everyday habit of human thinking processes (problem solving, diagnostic, iterative, cyclical, continuous).

He felt that we move with ease in a conceptual world of great complexity; interpreting our input of information and regulating the output of our behaviour or action according to an elaborate set of criteria. He states:

"the sheer ingenuity of the human thought processes enables us to understand the presentation of another's thought processes without necessarily assuming that one's own appreciation is incorrect. This action facilitates comparing and bringing into conformity differing appreciations with the common ground delineated. But differing views must eventually affect the course of events which they attempt to define. Planning reflects and adds its own reflection to the process, it is attempting to analyse and adds its contribution". (pp. 61)

This translation of the human mind model to other decision-making systems is adopted by well-known theorists. Karl Deutch's (1976) work on political decision-making is one example.

An obvious objection to the analogy between planning and individual thinking might be that of over-simplification of both processes. However, the analogy is here considered rather appropriate since it captures the existence of the influence of consciousness or value systems on the interpretation of the environment by the individual - the planner. In other words, a problem only exists because it is defined as such.

In planning therefore, we identify societal variables for manipulation and this brings us to the objectives we strive to achieve. Objectives can be said to provide a bridge between the goals of the planner and the way in which he or she perceives the world. Development objectives are necessarily normative if one does not attempt to hide one's value judgements. It can be argued that the conceptualization of problems and their measurement could mould policy objectives, planning methodology and implementation.

Thus even when the Caribbean nations share the ultimate goal of effective environmental management, there can be a fundamental variance between the objectives of one society and another, reflected in the features upon which influence is focussed.

The literature in development problems makes repeated references to different economic, social, psychological, political and other factors, as being responsible in various degrees and combinations, for the success or failures attained. In discussions, of planning 'environments' and planning 'styles', the argument goes that the socio-political context as well as the level of theoretical and technical sophistication influences the planning strategy. Yeh (1976) said that there was usually little 'goodness-of-fit' between the planning objectives and methodologies of countries with, for example different levels of statistical systems. For him, the reason is the differences in cultural values and political planning environments.

In summary, in any State the parameters mentioned above influence and are in turn influenced by one another to constitute the socio-economic and political fabric of the society - the 'environment' as it were, in which planning, including environmental planning must be pursued. Available theories and methodologies are imposed on the planning 'environment'. The resulting process of modifications and adaptations of these methodologies produces a planning 'style' which is in turn the basis of, and is reflected in the institutional arrangements of the State.

However some theorists point out that the political influence is undoubtedly, the dominant one in the planning context.

"It seems clear that despite the repeated claims of urban planners to be non-political policy and technical advisers, the city planner definitely is an actor in the urban political arena" (Rabinovitz 1969. p. 154).

Rabinovitz felt that the adjustments to plans are seen to occur as the process of planning proceeds, not because of changes in technical standards, but because of the pressures of politics. Indeed, she continues, it is possible that an organisation acts as an intermediate and not a determinative factor; therefore it is also possible that effectiveness depends not on organisation but on the type of political system in a given community.

The question is what are the implications of the range of Caribbean Political Systems for effective management of the environment at the Regional level?

Environmental Planning in the Wider Caribbean

The States of the Wider Caribbean can be seen to exhibit a wide range of linguistic, cultural, climatic, demographic and physical characteristics, to which must be added the varying levels of economic development and financial resources.

If one subscribes to the relationship (outlined above) between effectiveness and organisation, then the Caribbean Governments are seen to be faced with the task of establishing a regional institutional machinery which would effectively harmonize the diversity of respective national interests, and integrate the internal organisations designed to safeguard these interests. This link between the institutional machinery and the success of regional integration schemes is very crucial, and it focuses attention on the planning processes adopted by individual states.

If on the other hand, one agrees that the achievement of any degree of regional integration would be influenced less by the economic and social objectives than by the political will of the States, then herein lies the dilemma facing environmental planning. And planners, seeking as we do to enhance the prospects for conservation and for sustainable development at the Regional level, would be further constrained by the weakness of the institutional structure.

Generally speaking, environmental planning can be seen as the process which integrates conservation and development, by attempting to rationally allocate the use of resources. The basis for this allocation is the assessment of the environment, the monitoring of the impact of development on the ecological life-support systems, and the evaluation of these systems. The Regional institution must be designed to assist governments effectively to perform these tasks.

Perhaps some reference can here be made to some of the views expressed in the Report of the First Meeting of Planning Officials (1979). While there was a call for environmental management to be made on explicit fundamental policy of all CACE governments, and environmental parameters to be incorporated into all aspects of development planning (p.15) another author opined that planning as a tool for development was never really fully tried (p.11). Indeed many papers, whether related to the development of agricultural communication, industry or transport bore a measure of consensus that planning in the region at the national level was not only of a backward nature and failing to come to grips with the extant possibilities, but had reached varying levels of legitimation where it was practised (p.18).

Again the question arises about the significance of the national planning 'environment' and its influence on the emphasis and 'style' of planning the existing level of planning activity in the Region is not without significance if an appropriate institutional structure is aimed at.

There should be caution lest the Regional organisation appears to lack effectiveness because national systems are not yet geared to fully utilise the benefits of a sophisticated international organisation. Yet another author at the last Meeting was reported to have emphasized that the Caribbean is not yet ready for grand schemes, but rather for beneficial participation in the international environment of the 21st Century (p.50).

The Essentiality of Regional Cooperation

The call for the formulation and implementation of strategies aimed at the achievement of sustainable development, reaches far beyond the boundaries of the Caribbean and Latin America. The World Conservation Strategy (IVCN, UNEP, WWF, 1980) expresses the hope that it "will help governments, inter-governmental bodies, private organisations and individuals to cooperate with each other and jointly deploy the limited means available to much greater effect".

The notion of integration schemes is not new in the Region though these have hitherto been most related to economic development. As Allister Mc Intyre, Secretary General of CARICOM put it, "economic integration represents a central element in development strategy designed to overcome by joint and concerted action among neighbouring countries, some of the basic constraints to development" (Mc Intyre: 30 in Hall and Blake) there is no doubt that countries of the Region appreciate that integration schemes are no less crucial to the environmental planning process. The linkages and externalities can be analogous, for example, to the protection of ecosystems on physical degradation of the environment.

Perhaps, however, the over-riding impetus to cooperation should be financial constraints. Can many of the countries of the Region afford to relinquish the benefits that can be derived through access to a regionally compiled data system, skills and expertise in resource management through regional or strengthened national training facilities reduced risk through research-oriented management techniques?

The CARICOM Framework

If, for discreteness of focus, the English-speaking Caribbean is separated out as a sub-regional unit, an empirical example of the likely constraints to cooperation and integration can be seen in an examination of the existing Caribbean Economic Community (CARICOM) and the inter-action of Member Countries as they participate in the solution of similar problems while striving to safeguard their respective interests.

Hall and Blake in their study of the Administrative Organisation and relations in CARICOM identified four categories of factors which appear to have been crucial in determining the nature of the arrangements - legacies of previous attempts at regional integration, the structure of national administration, the objectives of the integration process and the disparity between Member States.

In their analysis of the principles underlying the institutional structure and the distribution of power between the regional and national institutions, the above categories of factors were again influential. It can be appreciated that the operational principles of an institution would have a critical impact on the distribution of power between levels of administration.

In the case of CARICOM, it was found that the institutional arrangements left all the effective power at the national level, as illustrated by an examination of the decision-making process and the coordinating and servicing functions assigned to the Secretariat. Indeed Member States retained the crucial aspects of decision-making - initiating and deciding; even after a decision has been taken, they retain exclusive control over its implementation.

Yet, a unique feature of the administration of CARICOM is the absence of national coordinating agencies primarily responsible for regional affairs. Instead each area of activity at the regional level is dealt with by the Minister and Officials within whose portfolio it falls.

The reluctance of CARICOM Member States to invest regional institutions with decision-making and executive powers has left some of the regional institutions without the capacity to undertake regional activity requiring these powers. Nor is there any mechanism for making decisions taken at regional level, binding at national level. It is to this combination of circumstances that earlier mention of the weakness of regional institutional structures refers.

Appropriate Institutional Arrangements

The relationship between systems structure and systems performance is intricate and reciprocal. Whatever the branch of planning, the methodology to be used has to be institutionalised in one form or another in order to provide a basis for action or policy-making leading to action. With regards to supra-national organisations, appropriateness is keyed to the capacity of the national systems to utilize the level of technology, to assimilate new concepts and adopt new techniques.

In this specific case, the formulation of the Regional organisation is against the background of national characteristics (at least for most of the English-speaking Caribbean) including the problem of inadequate information, the dearth of technical skills and in some cases of human resources and the lack of weakness of technology policies. It is felt therefore that institutional arrangements for the effective implementation of an environmental planning programme over a geographical Region as defined (the Wider Caribbean and Latin America) is fraught with operational difficulties. Furthermore, the degree of flexibility required for adapting to changing circumstances is likely to be strained by the range of national dissimilarities involved.

Any attempts to establish a determinate organisation, would require decision-making and executive powers at the Regional level, for the conversion of policy into action. Such an imposition would be understandably objectionable to respective States. The focus should be on international cooperation with an intermediate Regional organisation monitoring and servicing the national activities.

There is no question about the invaluable work in the form of aid, technical assistance and research already being conducted in the Caribbean and Latin America by the well-known international bodies. It is being suggested that these functions should now be consolidated in preference to the establishment of new organisations and institutions.

It is recommended that the greatest need is for the States to be assisted with the establishment or improvement of their national planning systems, with a view to increasing their structural capacity for improved environmental management. The existing educational programmes should be intensified, so that the awareness of all peoples in the Region is expanded into an environmental ethic.

The Latin American Institute for Social and Economic Planning (ILPES) should be the 'umbrella' organisation supported by the Secretariat of CEPAL organisations. National organisations would interact amongst themselves at one level. National organisations would also interact with ILPES through CEPAL.

ILPES is presently involved in a programme to support national co-operation. Their programme also includes the creation of the ground work of information of work done by planning bodies in the development of planning methods appropriate to the Region.

The Joint ECLA/UNEP Project for Environmental Management proposes work in environmental assessment, including the identification of activities and events which have an impact on the environment, and the identification of gaps in knowledge. It is later proposed to identify the existing human and institutional resources within the region to deal with environmental problems.

It is felt the existing agencies have on-going programmes geared to establish an effective service and coordinating function to national planning activities.

There should be early consolidation so that national attempts at rationalising their internal systems would be supported by access to a Regional data system, fora for discussion of problems and progress, opportunity for devising techniques of cooperation to their mutual benefit and knowledge of the available expertise and training facilities and experiments in devising appropriate technology.

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INTERVENTION

By Mr. Karl John
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on

ENVIRONMENTAL MANAGEMENT ISSUES IN THE CONTEXT OF DEVELOPMENT: ST. VINCENT

I would like to briefly elaborate on some of the conflicts between pursuit of economic development, strategies and some environmental management. I will use the case of St. Vincent as an example. Now one of the key aims of economic development planning in St. Vincent is improving the performance of the agricultural sector.

(i) Improving the performance of the Agricultural Sector

Out of a total surface area of 85,000 acres, approximately 50 per cent of St. Vincent has slopes of over 30° and is unsuitable for any type of cultivation. Areas with slopes of over 20° are suitable only for tree crops and pasture. It is hardly surprising therefore, that the 1972-73 Agricultural Census showed the State as having a mere 28,000 acres of arable land.

The options for increasing agricultural output are principally (a) increasing output through improved cultural practices including intensified application of chemicals; (b) bringing virgin land under production; (c) a combination of (a) and (b).

On the island of St. Vincent, the major threat to the environment identified earlier is erosion. This is due mainly to (a) high rainfall, (b) steep slopes, (c) porous, unstable volcanic soil, (d) low infiltration rates in certain areas.

Since there is no appreciable under-utilization of existing agricultural land in St. Vincent, any extension of production will have to be mainly into the Central Mountain Area and the Northern Fringe Zone. Both of these land systems are characterized by excessively steep slopes and high rainfall (consistently over the erosion hazard threshold figure of 80"). Any attempt, consequently, to extend cultivation into these areas should therefore be buttressed by terracing, contour planting, stream bed grading, the provision of silt traps, the avoidance of mechanical operations, minimal removal of vegetation and similar measures aimed at enhancing soil conservation.

Intensified use of chemicals to bring about enhanced agricultural development also poses serious problems for environmental management in St. Vincent (as elsewhere). Present use of pesticides and weedicides along with fertilizers have already led to instances of eutrophication and pollution of waterways, the destruction of river animals (crayfish); and there is growing evidence that a threat from this source (in addition to that from silt produced from land erosion) is posed to the coral reefs found in the South and South-West land system.

In a general sense finally, the attempt to improve the performance of the agricultural sector suggests the need for a parallel intensification of environmental management activity. Even apparently innocuous efforts at crop diversification imposed on simple ecosystems can lead to rapid destabilisation of these systems and result in rapid environmental deterioration.

INTERVENTION

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on

DIMENSIONS AND STATUS OF ENVIRONMENTAL PLANNING IN THE CARIBBEAN-LATIN AMERICAN REGION

Among its other benefits the Caribbean Environment Project has the potential for stimulating environmental planning in the Region. This is a conclusion drawn from familiarity with the Project and some degree of involvement in its development within the United Nations Environment Programme and in its Caribbean-Latin American phase. Regardless of the valuable contribution of the Caribbean Environment Project the dimension and complexities of environmental planning are so extensive that a very sober and detailed examination will be necessary.

The context in which this examination of environmental planning is an imperative, is one where the Region already suffers from quite alarming environmental conditions. One example of conditions in the Region is the problem of control of faecal wastes, sewage, and industrial waste-waters. In Jamaica less than 20 per cent of the urban population can be considered to have access to sewage control facilities which are satisfactory with regard to environmental impact and social and economic costs. Yet in these areas, over the next 20 years population increases in excess of 30 per cent are likely. Environmental planning therefore is a matter of urgency, to be treated in very active ways.

The notion and basis of environmental planning can be put forward in fairly simple terms: the majority of conditions and processes in our natural environments have taken millions of years to develop to the present state of stability. Although there is a certain amount of resilience in these natural processes and conditions, there are also limitations which if exceeded may even lead to irreversible conditions. The fact that we have to face up to in the Region, is that even at our present inadequate state of economic development, because we have not taken sufficient account of environmental factors in agriculture, manufacturing, industry, transportation, housing and community development, and in other sectors, we have triggered off environmental reactions of immense consequence. Thus the need for a good measure of harmony between positive economic and social development and environment is as relevant to this Region as to the industrialized countries, and possibly more so.

Although the basis of environmental planning may be simple enough to state, the actual application of environmental planning is quite complex. It involves a range of disciplines, a number of social and economic sectors, and a number of institutions, organizations and groups in the public and private sector. The synthesis of the required information, scientific and technological parameters is not easy, the mechanisms for involving institutions and people require creative structuring and nurturing, and there is a huge problem in reconciling what appears to be conflicts between social and economic choices and environmental requirements.

As indicated earlier, the longer term and the day to day activities of environmental planning cannot be carried out without close inter-action with sectors concerned with agriculture, fisheries, health, industry, manufacturing, construction, tourism and others. The relationships between environmental planning and these sectors are not vague. The relationships are tangible and real to the extent that activities in these sectors simply cannot be sustained without due regard to environment.

Environmental planning has bearing on other fields of planning: social and economic planning; physical planning; and planning of the global, regional, or community level. Even a relatively small country like Jamaica cannot ignore global environmental issues and conditions. The movement of dust clouds from as far afield as the Sahara not only affects our Regional and territorial environment, but reminds us of international problems such as desertification.

At the present time there are both consistencies and inconsistencies between "ideal" environmental planning and other fields of planning. In physical planning for example, as practised in the Region there are certain conflicts between our systems of land sub-division, and even ownership, and the requirements for effective control of erosion and sediments. It would seem however that the areas of irreconcilable differences between environmental planning and other fields of planning are few. On the other hand, the opportunities for bringing a high degree of creative harmony among the planning fields, are many and should be taken.

In considering the dimensions of environmental planning full regard must be given to human and social factors. The writer sees environmental planning primarily as an integral part of sound social and economic development, as a reality and as an active and effective approach towards environmental planning. It should be said however, that some of our attitudinal, and psychological characteristics, and prevalent values, reinforce good environmental planning. Others however, do not, and this is a critical area in environmental planning. Indeed, apart from the widespread problems in the Region of appropriate technology, shortage of personnel and resources, some of the human constraints to effective environmental planning are formidable.

Some of the more technical techniques for environmental planning are quite clearcut. Others like the critical process of environmental assessments still require a great deal of development in order to permit good decisions, and positive actions, which take account of social and economic factors. In this regard one would like to consider a process where people can participate informally as one of the techniques of environmental planning.

One common problem in the Region is the inadequacy of mechanisms in the Government sector and outside for synthesis in environmental planning. Another common problem is the lack of provision for financing pollution abatement and environmental action in general.

Clearly, the Region is in the early stages of development of environmental planning as an active and effective process. A number of countries in the Region have good structural framework which can be developed and linked to the other fields of planning. The whole question of environmental planning is in need of further specific examination.

