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Agricultural sector policy and macro-economic planning

*Trevor Harker**

This article is intended to provide a brief overview of some of the links which need to be established between sectoral and macro-planning. In the process it discusses some of the planning methods used in the small open economies of the Caribbean and provides some ideas as to the direction in which they may evolve over time. While examples are drawn principally from the experience of Trinidad and Tobago, the basic principles, as well as the more general comments, apply faithfully to the planning patterns prevailing in most Caribbean countries.

The article is divided into three parts. Firstly, some comments are made about the broader macro-economic developments in Trinidad and Tobago since 1973, and an attempt is made to fit agricultural sector performance into that context. Secondly, the paper discusses various approaches to planning, progressing from the most basic to more complex and integrated approaches. An attempt is made to establish the relationship between sectoral and macro-economic planning and in so doing integrate the "top down" and "bottom up" planning approaches which will be necessary in order to create the consensus required for effective plan implementation. Thirdly, before providing a summary of conclusions, some of the constraints which must be faced by planners in the region are also identified.

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I

An overview of economic trends and policies

The petroleum price increases between late 1973 and 1980 brought windfall gains to Trinidad and Tobago and permitted a level of economic activity, and an increase in the standard of living, not previously experienced.

Because it is an extractive industry, with limited linkages into the domestic economy as a whole, in the first round these windfall gains accrued primarily to the public sector in the form of increased revenues. In the second round, as the government distributed these revenues in the form of increased staffing of, or salaries for, the civil service; expanded welfare programmes; widely increased subsidies or a rapid increase in investment projects, the oil revenues impacted upon the other sectors and ultimately upon the standard of living and levels of consumption of the population as a whole.

Since the oil boom was also an export boom, it generated rapidly increasing quantities of foreign exchange and permitted the removal of the import constraints that had affected the economy up to 1973. While there was a rapid increase in imports, it was also possible (at least initially) to achieve a great increase in reserves and to benefit from the capital revenues which came from them.

Real weekly earnings increased by 6% per annum between 1976 and 1982, while the rate of unemployment fell from 17% to 10% over the same period.

Real national income is estimated to have risen by one-third between 1973 and the second oil price increase in 1981. A fair portion of this increased income was also transmitted to the poorest sectors, through increased employment, make-work schemes, and a series of subsidies tailored to their needs. At the same time, a fairly large programme of investments in activities downstream from the petroleum sector were put into operation (ammonia, urea, methanol and steel).

Due to the rapid increase in income, however, many of the productive factors were overstrained and a series of dislocations were created.

Increased incomes were not matched by increased productivity, many of the unskilled were employed to do skilled work, and others were employed to do non-productive tasks. Increased consumer demand could not therefore be matched by increased domestic production, resulting in a rapid increase in prices and imports. This was exacerbated by the fact that many local manufactures were large users of foreign exchange.

Costs of production increased rapidly, and while these increases were easily absorbed by local consumers, the effect was that industries were no longer competitive on the wider export markets, or even within the protected CARICOM market.

Finally, there were significant reallocations of resources into areas such as the distribution of imported goods, construction, and real estate, while at the same time there was a shift of resources out of sectors such as agriculture.

By 1982, a decline in petroleum output which had started in the late 1970s was joined by falling oil prices: a trend which has continued up to the present. Accordingly, many of the policies developed in the 1970s are no longer sustainable, and the dislocations created are now in the process of being corrected. Evidence of this readjustment is seen in reduced government expenditures, a variety of new sectoral policies, and regulations regarding foreign purchases, while the process of realigning the local currency has also begun.

1. *Agricultural sector performance*

The impact of past macro-economic trends and policies upon the agriculture sector was quite significant. Even though agriculture had not played a major role in the economy prior to 1973 its share of GDP was nevertheless halved between 1973 and 1982, standing in the latter year at only 2.7%. By 1985 this trend had been reversed somewhat due to the impact of changed economic conditions and policies, so that by the end of that year its contribution had increased to 3.7%.

Between 1971 and 1982, food imports doubled in terms of volume but increased eight-fold in terms of prices. In 1980, 90% of food needs had to be met through imports. The

decline in agriculture was further demonstrated by the fact that labour was moving out of the sector, due no doubt to the fact that real wages declined. Agriculture absorbed about 18% of the labour force in 1974, but by 1984 this had gone down to 8%. Once again the trend seems to have been reversed, since this percentage grew to 10% by the end of 1985.

In effect what was happening was that, in line with a development philosophy common to the whole region, emphasis was being placed on industry as the path by which development would be pursued. These trends were evident throughout the region, but as in many countries the resources were more limited, the shifts in emphasis were not as dramatic. This very marked shift away from agriculture was also evident in other oil economies, such as Nigeria, which had traditionally been a major agricultural producer before its oil boom. Nevertheless, Indonesia provides an example showing that it is possible to develop an oil economy without hampering agricultural development, provided the appropriate macro-economic policies are applied.

Subsequent evaluation of the agriculture sector in Trinidad has listed a number of reasons for the decline of the sector:

- a) Inadequate physical infrastructure;
- b) High cost and/or shortage of labour;
- c) Outflow of capital from the sector;
- d) Social problems such as praedial larceny;
- e) Excessive concentration on the export sector;
- f) Insufficient research and development;
- g) Competition from foreign food and dumping;
- h) Shortage of professional and technical skills;
- i) Declining public sector investment in agriculture, and
- j) Spread of urban culture throughout the society.

Now that foreign exchange has resurfaced as a major economic constraint, and ways have to be found to earn and to save more foreign exchange, agriculture comes under scrutiny once more, since food imports constitute a major part of the foreign exchange bill. Moreover, agricultural exports have in the past been a significant contributor to foreign earnings.

By now, moreover, a number of things have changed in the sector, particularly in relation to export markets. The traditional export crops are now facing serious competition, and decisions need to be taken as to whether they can be placed on a competitive footing or whether new products should be tried. This is a particularly urgent decision, since about 70% of the land in production is in export crops such as sugar, coffee, cocoa, or citrus. Moreover, sugar production is a drain on the budget, the industry requiring TT\$300 million per year in subsidies.

In actual fact, it would seem that a decision has been taken to retain the most productive

parts of the traditional crops and to phase in new export crops where possible, with the remainder of the land being earmarked for domestic food production. But it is not clear whether decisions have been taken regarding what crops should be emphasized (based on a ranking of what can most efficiently be produced) and in what quantities (based on a knowledge of market requirements). It seems that these are issues for the agriculture planners, and it would be interesting to hear whether an investigation has been made in this respect and what its results have been. The implications for a land use policy are also obvious.

II

The orientation of policies towards specific goals

Most of the facts given in the short analysis above are already well known, and even if they are interpreted in different ways it will probably be agreed that there is a case for some form of systematic planning. Moreover, it is clear that whatever it is desired to do in the sector, such goals cannot be achieved if the overall macro-economic conditions are not in harmony. Consequently, there is a strong case for an integrated approach to planning of both specific sectors and of the overall economy.

A tendency has recently developed in the Caribbean not to talk too much about economic planning, but rather to emphasize economic management. This probably arises from a disenchantment with "planning" as practised in the past, and a need to emphasize the continuous process of guiding and fine tuning the economy that is essential for the effective achievement of planning goals. It must be conceded, however, that it is desirable to set out the planning process in a plan document, since this can help to provide a systematic approach to co-ordinating development decisions. An explicit plan can also provide a basis for judging performance at set intervals and for correcting those things that have not been achieved. So, although it must be acknowledged that planning can conceivably proceed without a formal document, such a docu-

ment may be a useful way-station in the planning process.

All those dealing with the Caribbean are familiar with the three or five-year development plans, which absorb enormous creative energy and human resources, but are often left to languish on a shelf: not followed; never updated to adjust to the rapidly changing environment; sometimes never approved by the political directorate. There are also plans which are merely expressions of hope, or else are cynically intended for window dressing, unconstrained either by administrative or financial limits; incoherent plans that have a little something for everyone, but which add up to inconsistent and unworkable policies; plans which set goals without providing any suggestions of the means, or the instruments, that will be needed to achieve them, and yet other plans which leave out the politically difficult parts.

The existence of a plan, therefore, does not mean that the community has either the will or the means to implement it. As a result, while there has tended to be disenchantment with planning in some circles, in others perhaps a false hope has been instilled that the plan will be the panacea for development problems. A realistic evaluation will probably come somewhere between these two extremes.

1. *Planning stages in a mixed economy*

It may now be useful to discuss briefly some of the more common mechanisms used in the region, particularly as they relate to mixed economies.

Planning is more complex in mixed economies because in this system the planner has less influence over all the economic actors than is the case where the economy is concentrated in the public sector. Moreover, prices—which are subject to relatively free fluctuation in the mixed economy—change more rapidly than in a system where they are fixed administratively, and where both pricing systems coexist, there is the danger of sending inconsistent signals to the various economic actors. For convenience it may be useful to separate the planning processes used in mixed economies into three distinct stages of increasing complexity, with the understanding that conceptually they tend to progress from one to the other, in a continuum.

The basic minimum begins with the national budget, prepared on an annual basis. This is usually the starting point for most countries and provides indications for the forthcoming one-year period about expected revenues and expenditures, the latter being divided into recurrent expenditures and capital expenditures which will be undertaken by the government. At a more advanced level, the budget might include estimates of expenditures of all public sector entities. Either integrated with this or separate from it, there may also be a list of projects which will account for the total expenditure over the budget period.

For some of the Caribbean countries, this is as far as they are able to go in the planning exercise given the level of resources (particularly planning skills) available to them. The preparation of a slate of projects strains the resources of most of the countries in the area, and accomplishing this is often as much as the resources can manage.

But the budget is sometimes not a very accurate reflection of what is intended for the next year. All those who have worked in the public sector know that the bases on which budget estimates are made are not always the most scientific. Those who have worked in Ministries

of Finance know that there is often a tendency to underestimate revenues at the first round in order to contain demands, while in the other Ministries there is a tendency to pad the estimates in the knowledge that the Ministry of Finance will make cuts. Then, as there is a desire to maximize expenditure, both in the hope of forcing the pace of development as well as in an effort to gain the kudos to be derived from a big budget, the political directorate might once again inflate estimates of revenue, and so on. The fact is that there is an element of gamesmanship in the budget exercise that really has no place in the more formal, and supposedly more scientific, planning process.

At this stage, it will be necessary to examine how the slate of projects is compiled. In some cases, the projects surface because there is an indication that finance may be forthcoming from a donor for such activities: this indication may be given by the lending or aid policies of multilateral or bilateral donors. However, these policies may or may not coincide with the particular development priorities or needs of the recipient country.

Alternatively, the slate of projects may be biased towards a sector which has developed the expertise to prepare projects in the past. This accumulated experience has not usually resided in the Ministry of Agriculture, but in truth these biases have represented relatively minor evils, since the greatest problem for most developing countries is the difficulty in compiling a reasonable slate of carefully prepared and viable projects.

The shortcomings of the project-by-project approach are, however, obvious, since the projects tend not to have any unifying basis, or any common policy thread. There is probably no systematic basis on which to assign priorities to them, either by sector or within sectors.

The Integrated Public Sector Investment Programme, which attempts to remedy the shortfalls of the case-by-case approach, is regarded by some as the proper initial stage of planning. It should take as its departure point a fairly rigorous estimate of public sector resources for the life of the programme, both in terms of revenues and of the resources it expects to be able to borrow (or to be given in the form of grants-in-aid). Estimates of local resources need

also to be disaggregated from foreign exchange needs.

Funds are allocated on the basis of explicit, agreed-upon sectoral priorities. The allocation within sectors is then made in accordance with a ranking based on the priorities of the sector, cost-benefit analyses, and any linkages or catalytic effects in respect of other completed, ongoing or slated projects. This co-ordinated group of projects makes up the programme for the sector.

The various sectoral programmes are thereafter evaluated in order to maximize the aggregate benefits to be derived from a given quantum of investment and are ultimately integrated into the National Investment Plan. This often medium-term plan has an annual component which figures on the expenditure side of the national budget. It is usually evaluated on a yearly basis and may be updated or revised periodically, depending upon performance in the previous year or changing priorities.

Ideally, the public-sector investment programme seeks to incorporate all the funding requests made by public agencies, including those of semi-autonomous public entities, since their obligations are usually guaranteed by the government and form part of the national debt. At this stage of the planning process the private sector is incorporated only in so far as the government sets out to influence the investment climate or to channel investment into specific areas; detailed private-sector investment proposals are seldom available at this level of planning.

The Comprehensive Plan takes a different approach. It begins with targets—or, more appropriately, target paths—for certain key elements in the economy, which are perceived to interact in specific ways. A simple overall equilibrium model of the economy can thus be designed for the period covered by the plan, which is usually the medium term (three to six years). This is a sufficient amount of time over which to maintain a consistent policy line and to see its results, but is not so long that forward predictions would become meaningless. Even so, the constant monitoring and readjustment of targets is essential.

By monitoring the target growth path of, for example, the gross domestic product, the planner can gain some idea of the quantum of

investment and savings which will be needed to attain the target based on investment and other coefficients, the amount of time needed in order for factors to be transferred and to become operational, etc. In order to do this, the planner draws on past experience, as well as taking into consideration expectations of change during the plan period. While it is obvious that the accuracy of the coefficients and of the appropriate elasticities is central to the exercise, this is difficult to achieve initially due to the weakness of the data bases and a shortage of the appropriate skills. Yet the process by which the planner arrives at these measurements (as well as the discipline needed to visualize and quantify the types of linkages between sectors) is essential if he is to be able to manage the economy effectively. In this way models of varying complexity may be developed to identify the rates of demand and supply, public and private consumption, savings, investment, employment, imports, exports, and so on which will result from the basic target paths.

The comprehensive planning model not only takes into account the public-sector investment programme, but also incorporates budgetary targets based on estimated public-sector resources for the plan period, the projected investment of the private sector, and the expected impact of public policy on such investment. The model might also be arranged so as to provide some notion of the best allocation of resources between the public and private sectors. Initially, for Caribbean countries, a relatively simple model using four or five appropriately disaggregated production and consumption sectors (such as agriculture, industry, services and, where appropriate, mining) might suffice to provide an adequate understanding of the way in which the economy interconnects and to allow the planner to select the basic tools needed for its management.

Using these broad aggregates as a starting point, the plan then goes into detail concerning each of the sectors, which, for their part, will have drawn up their own sectoral investment programmes. In this way "top-down" and "bottom-up" planning approaches are pursued simultaneously.

Once the detailed sectoral plans have been presented, the macro-planner will be in a better

position to evaluate the balances involved in greater detail. The planner needs to ensure not only that the supply of labour balances with the demand for it, but also that the necessary types of specific skills are available. Imports should, of course, balance with exports, but the composition of imports is also crucial since, for example, capital goods imports must be forthcoming in order to sustain the quantum of investment. Investment is possible only if the level of savings is adequate, but these savings must also be sufficiently mobile in order to shift to those sectors on which investment priorities are placed. While some of these balances may be established through the operation of key price variables such as real wages, the exchange rate, and the cost of capital, other less tangible factors, such as confidence, need to be considered as well.

2. Sectoral planning

An attempt has been made here to show that in order for sectoral planning to be successful, it must be compatible with the overall macroeconomic framework. A word also needs to be said, however, about sectoral planning itself.

If such plans are to be relevant and implementable, the proposals advanced by the agriculture sector planners must closely correspond to the needs and aspirations of the farming community itself. For agricultural policy, perhaps to a greater extent than some other sectors, depends for its success on a large number of small private actors. A level of consensus is therefore crucial as what to produce, what rate of increase is possible and feasible, and what impediments need to be removed in order to implement a given policy.

Armed with an understanding of the problem and a measure of consensus, the sectoral planner will be in a better position to formulate more effective projects and to select the most effective instruments and policies for their implementation. (Appropriate pricing policies are obviously of great relevance in this regard.) The planner will also be in a stronger position to defend such policies and projects at the macroeconomic planning stage.

A significant source of delay and wastage of resources in the implementation of sector plans is inadequate project selection and preparation.

A pre-condition for overcoming this problem is a comprehensive evaluation of the sector as a whole. In agriculture, the preparation of such an assessment requires a sound knowledge of land resources, soil types and the consequent production possibilities. It also needs to reflect a knowledge of the relative prospects of development in areas such as forestry, animal husbandry and various crops, and should provide a relatively good idea of the relative efficiency of producing for export or for domestic consumption, of what crops are best, and of what the foreign and domestic markets can bear. Furthermore, the assessment should clearly identify those areas in which there are knowledge gaps and those in which further research is needed.

Once potential projects have been identified, feasibility studies need to be prepared which take into account the economic, technical, financial and organizational aspects of the project so that it may ultimately be determined whether the costs are lower than the potential benefits and so that an effective ranking of the various project possibilities may be made. Are the necessary inputs available? What ancillary services are required? What of human and organizational skills?

Effective project preparation is expensive and time-consuming and requires a certain basic minimum of specialized data. It is essentially a multidisciplinary exercise and hence skills-intensive. Yet it is crucial if funds are not to be wasted on the implementation of non-viable projects; even more expensive is the budget subsidy required far into the future to sustain the operation of badly-conceived projects. Paradoxically, the risk of this happening is highest when domestic resources are used or when the repayment of project loans is guaranteed by the public sector, since multilateral donors normally tend to be more rigorous in assessing feasibility before disbursing such loans. Nevertheless, there is often a tendency for those impatient with the pace of development to regard the requirement of feasibility assessment as an impediment, and the temptations to circumvent the process are great.

3. Constraints

Before closing it might be useful to comment on two constraints which are sometimes used as

arguments for denying the efficacy of formal planning whenever the question arises in the Caribbean. They relate to the extreme openness of these economies and the quality of the data available to the planner.

In economies as open to external factors as those of the Caribbean the planning discipline is faced with more constraints than is the case in larger and more self-sufficient economies. Since an open economy is subject to a much higher level of external vulnerability and therefore uncertainty, the planning process needs to be more flexible so that it can react to unforeseen circumstances, and a greater degree of attention must be paid to the review and readjustment of targets. At the same time, economic actors need to react rapidly—and, ideally, automatically—to external stimuli which create opportunities for expansion as well as potential risks of contraction. Price mechanisms which faithfully reflect external trends and impacts therefore have a central role to play in small open economies.

Nevertheless, recent global trends suggest that even for the largest countries the idea of autonomous economic action is rapidly becoming a myth.

As regards the constraint represented by the available data, it is evident that the quality of the planning process is highly dependent upon the quality of information at the disposal of the planner. Statisticians often argue that the data set needs to be complete before planning can proceed, whereas economists may be willing to accept a less complete data set if it can be made available more quickly. In the real world one cannot await perfection; one must begin with the resources that are available, while hoping to improve them over time. It is also true that many of the Caribbean countries do not make the best possible use of the available data; nor is the collection of the data as systematic as it might be. In any event, the quality of the data clearly places some constraints on the type and extent of planning which is feasible.

III

Summary and conclusions

In conclusion it may be useful to restate some of the main points made in the foregoing discussion:

1) Planning, as defined in this article, is to be seen as a dynamic process which is an integral part of implementation and economic management;

2) Since planning requires constant feedback and adjustment, it is a good idea to revise the plan on an annual basis; some planners adopt a rolling plan with this in mind;

3) The type and degree of detail of the planning process is conditioned by the objective circumstances in each country and by what is deemed to be necessary, but is ultimately determined by what is feasible and what can be implemented;

4) There must be a symbiotic relationship between the sector and the overall economic framework, such that the macro-economic

framework will be consistent with the goals and objectives of priority sectors, and vice versa;

5) Ultimately, development is dependent upon a succession of viable and productive individual projects in both the public and private sectors. The preparation of such projects is time-consuming and expensive and requires a variety of skills. The planner can skimp on this preparatory work, however, only at great risk to the long-term viability of the project;

6) The implementation and operation of such projects requires effective management skills and ongoing monitoring to ensure their continuing viability; and, finally,

7) Planning is data-intensive, but the process cannot be held up until a perfect data set is obtained. The scope and comprehensiveness of the plan must, however, take the data constraints into account and work within them, even while providing for the eventual upgrading of the data base.