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# IMPORT SUBSTITUTION IN AGRICULTURE

## A Case Study of Trinidad and Tobago

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### INTRODUCTION

A thorough assessment of import substitution in an economy must be done with specific reference to the social, political and economic context within which it is being practised. The objectives which it is agreed could be achieved by it must be taken into account as must the alternatives which could possibly have produced the desired goals. In this paper we propose to deal with the narrower aspect of import substitution in agriculture in Trinidad and Tobago emphasizing primarily the economic aspects involved, with particular reference to the livestock sector.

The significance of the concept of import substitution in this country's experience is of a dual nature: the development of home production to replace the imports of specific products, and the production of those products which, while not previously imported, can be regarded as substitutes for some items that are imported. In effect, implicit in the latter is the change of the consumption pattern of the community.

Import substitution as a process for inducing growth had been emphasised as early as the late forties by Dr. Raul Prebisch.<sup>1</sup> He saw this as a strategy of development for the Latin Americas. Hans Singer<sup>2</sup> has included import substitution as one of the processes by which the economic status of a country can be raised. The other processes he itemizes are increased productivity in agriculture; improvement in productivity outside agriculture; and the promotion of export trade. Hal B. Lary<sup>3</sup> has also included import substitution as one of the ways in which a developing country can direct its efforts to strengthen its external position. He includes with this the expansion of traditional exports either raw or processed and the home production of manufacturers with a view to generating new exports. These are two examples of the prominence which import substitution is given in development theory by renowned theorists in the economic field. Of course, the onus is on both the Government concerned and private enterprise to determine where the emphasis in the agricultural sector should be placed. In some developing countries, concentration on traditional export agriculture has led to disillusionment with this road to economic growth. In this situation, as is the case in Trinidad and Tobago, import substitution in agriculture has been and is being regarded as a means toward the end of economic development.

<sup>1</sup> Prebisch, Raul, 'Commercial Policy in the Underdeveloped Countries', *American Economic Review, Papers and Proceedings*, May 1959.

<sup>2</sup> Singer, H. W., 'A Balanced View of Balanced Growth', *Leading Issues in Development Economics—Selected Materials and Commentary*, edited by Gerald M. Meier

<sup>3</sup> Lary, H. B., 'Adjustments in Foreign Trade', *Leading Issues in Development Economics—Selected Materials and Commentary*, edited by Gerald M. Meier

In Trinidad and Tobago there has been no great tradition of the use of import substitution as a process of development although on an ad hoc basis the policy had been advocated and programmes implemented as early as the days of slavery.

It is only within the late fifties that the concept of import substitution came to be consciously recognized as of importance to the development of Trinidad and Tobago. Further, most of what has been done has been in the field of manufacturing—with import substitution in agriculture running a poor second. It is now an accepted fact, however, that industrial development in Trinidad and Tobago, as in the majority of other developing countries or regions, cannot be accelerated to the detriment of agriculture. The question is not the familiar one of whether balanced or unbalanced growth should be practised, since it has been accepted by theorists and planners that balanced growth may be rightly regarded as an end result regardless of the means by which this goal is achieved. What is of significance is the fact that import substitution, and in our case import substitution in agriculture, can contribute to the achievement of a variety of goals which are of great importance to the development of the country.

### HISTORICAL BACKGROUND

A detailed account of import substitution in agriculture during the days of slavery and indentured labour would serve little useful purpose but it must be pointed out that the pursuits of the economy in agriculture during these years can be regarded as a casual factor of the laissez faire attitude adopted in the sector during most of the ensuing years.

Trinidad was regarded as a model slave colony 'where no-one starved' partly on account of the food produced by the slave for personal use. Although there was great dependence on the imported food items such as flour and pickled meats, the slave owned his pig and a few goats, and for a long time was permitted to grow ground provisions and other vegetables not only for personal consumption but also for sale in the Sunday markets. With the advent of indentured labour, a similar situation continued. An objective of the plantocracy in granting labour permission to grow provisions and other foodstuffs for personal consumption was the reduction of the food import bill, at the same time avoiding the possible risks involved in importing at that time. Another important point was that food cultivation gave the labourers something to do in their spare time. Generally, however, as was the case with other Caribbean islands, there was no strict principle applied for supplying the slaves with food. The gross profits of growing sugar, cocoa, etc., were by all standards super-normal. It follows that the main concern of the plantation owners was with the production of the traditional crops and they were generally prepared to import food for their workers. In effect, as

was then the case in the other West Indian colonies, the things they produced they did not consume and the things they consumed they did not produce. The net effect of the local production of foodstuffs, however, was a minimization of the food import bill—increasing the Balance of Payments surplus.

The advent of the twentieth century saw the economy of Trinidad and Tobago producing what we now call the traditional export crops — sugar, cocoa, citrus and coffee. There was also a substantial increase in the production of vegetables and ground provisions, although still on an ad hoc basis. Incidentally, petroleum at this time showed signs of eventually becoming a major contributor to the total output of the economy.

Carrington<sup>1</sup> points out that "it is debatable whether the Riots of 1937 or the advent of the Second World War had a greater impact on the subsequent developments in Trinidad and Tobago". He shows that the war led to a reorientation of agricultural production in the country. Traditional export crops continued to be produced, but there was now a positive effort to increase domestic production of food for home consumption. The unreliability of securing the food imports on which the country was so heavily dependent contributed to the move in this direction.

In 1931, land settlement was first attempted for the growing of ground provisions, but the late thirties heralded the introduction of intensive campaigns for growing more food locally. As indicated above, certain factors led to this positive effort toward import substitution which it was hoped would facilitate the realization of certain objectives, which were :

- (a) to guarantee a continuous and relatively cheap supply of food for the inhabitants; and
- (b) to minimize the loss of savings accruing to the plantation owners.

The exhortation to 'grow more food' was accompanied by the subsidising of the staples used in the local diet (flour, rice, condensed milk and pickled meat). A Food Comptroller was appointed in 1942 to regulate food imports, encourage domestic production of food and to reorganize the marketing and distribution of all foods. A Price Control Committee was also established. Production of food was given an additional incentive by Government's order to the plantocracy to utilize vast tracts of their land for the growing of short-term crops such as green vegetables, ground provisions, beans and peas. A system of guaranteed prices was also introduced and a number of Government depots were established and storage facilities either improved or created.

The effect of this drive to grow more food for domestic consumption is of some significance. Carrington concluded that there were significant increases in the output of food grown domestically for home con-

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Carrington, E., 'The Post War Economy of Trinidad and Tobago', *New World Quarterly*, Vol. 4 No. 1, 1967

sumption, and that despite the fact that prices had been controlled and imported staple foods had been subsidized, there was no increase in the importation of these staples. In fact it has been estimated that by the end of the War, the total acreage under food production was about two and a half times what it has been in 1939, and the output of such crops as yams, sweet potatoes, Indian corn and rice increased substantially. Other factors also point to substantially increased production of domestic foodstuffs. The cost of living rose only moderately despite the large amount of money in circulation as a result of the American occupation. The large increase in population resulted in increased demand for food, but did not lead to a substantial increase in the cost of living. The price of imported foodstuffs rose faster than that of locally produced foods, although they were subsidized.

It is meaningful to ask what were the factors which contributed to this very favourable response to import substitution in agriculture. Upon examination, these appear to be due partly to an effective demand for the products, and partly to the possible ease of expansion of supply. The uncertainties of supplies coming from abroad, the availability of cash or easy money to make the purchases and the preparedness of the community to change their pattern of consumption, all contributed to the actual creation of demand for these products. On the supply side, there was the availability of land both for the peasant farmer and on the plantations. The price was right; despite Government control of prices, the selling prices received were such that the planters found production for the home market a profitable venture; there were market outlets for all that was produced at a remunerative price. This was the case also with locally processed foods. It is therefore seen that import substitution in agriculture in Trinidad and Tobago has at some time had a measure of success when viewed in the light of the goals which it was introduced to achieve. It must be acknowledged that force of circumstances drove the economy both on the side of supply and on that of demand to act—to initiate policy and to implement a programme as far as it was possible in a free enterprise system and under prevailing circumstances.

The return to normal trading conditions at the end of hostilities led to a reversion to the status quo ante. Food imports rose and simultaneously the drive for growing foodstuffs locally waned both in the public and private sectors. This situation continued until the late fifties when the First Five-Year Programme (1958-1962) was published.

#### IMPORT SUBSTITUTION IN AGRICULTURE IN THE 1960's

Before analysing the effects of import substitution in agriculture in the country it will be useful to briefly review the prerequisites for a successful import substitution programme. The ECLA Secretariat sums them up concisely when they state that "import substitution changes the consumption functions throughout the economy. It requires from the productive sectors a flexible response which is difficult to achieve in an economy where the markets for labour and capital are imperfect. Failure to meet the needed spurt in output

means rising prices. Moreover, to the extent that the economic transformation is not adequate, the pressure of demand for imports will not be relieved."

The flexibility in the demand and supply functions mentioned in the quotation has been stated as a prerequisite for import substitution in the economy generally. However, depending on the extent of the import substitution envisaged in agriculture and the circumstances existing in the country, there is a commensurate need for flexibility in demand and in supply. One may be tempted to go even further to state that if import substitution in agriculture is to assist in the attainment of the goals mentioned, then substantial changes must be forthcoming.

The first systematically compiled Five-Year Programme, 1958-1962, stated categorically that the programme for agricultural development had two basic objectives — to increase productivity and to expand agricultural production. Agricultural production was to be directed to two ends namely, increase in the production of traditional crops for export and for local industry, and the production of food for domestic consumption. The aim was to increase food production both in quantity and quality to such an extent that the fast growing population could be sustained at standards which would have been adequate for a country in our state of development.

The Second Five-Year Plan, in a statement of its overall strategy of development, insisted that there was considerable room for the expansion of production of domestic agriculture including poultry and livestock in which sub-sector a projected rate of growth of about 6 per cent over the period was estimated. The Plan stated that "this view is based in the first instance on the large existing potentialities of import substitution in respect of food, but it also envisages the eventual development of export markets for processed foods, particularly of fruits and vegetables and poultry and pork, at least to nearby Caribbean territories".

The implementation of the First and Second Five-Year Plans laid the foundation for further economic diversification of the economy. Much of the required basic infrastructure was installed; indigenous and other necessary institutions were improved and local personnel were exposed to the requirements of the complexities of the diversification process. As would be expected, therefore, the Third Draft Five-Year Plan placed greater emphasis on what must be done in the sectors expected to lead in growth rather than in the provision of infrastructure, etc. . . Agricultural production, including that for domestic consumption, is expected to play a major role. This is indicated by the fact that three of the five main elements of the programme for diversification outlined are :

- (i) continued increases in production of food, livestock and fish products — primarily for the domestic market, but increasingly for CARIFTA and wider regional and world markets;
- (ii) an expansion of earnings from present acreages devoted to traditional export industries by re-

duction in cost of production and increases in yields per acre (in some cases, as in the case of cocoa, it will be necessary to remove marginal lands from production of a particular crop);

- (iii) a deliberate attempt to reduce the taste for inessential imported goods and services in favour of locally produced goods and services."<sup>1</sup>

In all of its three Plans, Government indicated its intention to provide certain inducements to facilitate import substitution in agriculture. These included :

- (i) educating the farmer in the use of technological and managerial knowledge;
- (ii) provision of subsidies and credit to augment the farmer's own resources;
- (iii) allocation of land to farmers where it was considered feasible;
- (iv) Government expenditure on scientific research in the field;
- (v) looking into the problems of farmers especially those of small-scale farmers and the expansion of extension services.

It is interesting to note that the Draft Third Five-Year Plan in enumerating the incentives to be given for stimulating development has indicated that "certain activities such as production of new non-traditional crops by companies, specialized production activities such as seed breeding etc., will be eligible for pioneer status."

In summary, it can be seen that the objectives of the import substitution policy during the period can be enumerated as follows :

- (i) the provision of a net positive contribution to the balance of payments which involves a reduction of the high food import bill;
- (ii) transformation of the economic structure of the economy leading to sustained general economic growth;
- (iii) the creation of employment opportunities for the large unemployed portion of the labour force;
- (iv) the contribution to effecting a change in the traditional agricultural system in the economy, and other non-economic arguments;
- (v) the achievement of some level of independence in food production for the domestic economy.

<sup>1</sup> Government of Trinidad and Tobago, *Draft Third Five-Year Development Plan, 1969-1973*, Government Printery, 1969

The emphasis in each of the three plan periods has varied, but it can realistically be said that over the entire period the Government of Trinidad and Tobago had some or all of these objectives in mind when import substitution in agriculture was being considered. Implicit in Government's policy for import substitution in agriculture, therefore, has been that such a programme could contribute positively to solving most of the economic ills of the country. In the following section, the extent to which the import substitution policy has succeeded in fulfilling these objectives will be considered.

#### THE EFFECTS OF THE POLICY

The preceding section has shown that during the 1960's import substitution in Trinidad has taken two distinct forms. Firstly, there has been a general attempt to increase consumption of local food as substitutes for imported produce—for example, the 1968 "Buy Local Campaign". (This has been supplemented by restrictions on importations of selected items by means of the "negative list".) Secondly, serious and substantial attempts have been made to increase local production of certain agricultural products which were hitherto imported in large quantities.

It is virtually impossible to quantify the effects of those policies instigated by Government to alter consumer tastes or even to determine at what level imports would have settled if they had not been physically restricted. Therefore, the substantial part of this section will be devoted to an analysis of the effect of that part of the Import Substitution Policy which was concerned with the physical production of certain substitutes. In effect, this means that consideration will only be given to the livestock sector, although it is apparent that the strategy may soon be extended to the food crop sector (e.g., carrots, red kidney beans, potatoes, onions, etc.).

There are almost as many hypothetical justifications of the policy as there are economists. But the examination of the development of post-war policy in the previous section shows that these arguments fall into five main categories which will now be considered separately.<sup>1</sup>

#### The Balance of Payments Contribution

It would, perhaps, be true to state that in general the contribution made by the import substitution strategy is not as precisely calculated as it could be. At the risk of boring the reader, a brief restatement of the basic economic issues is appropriated, by defining three different concepts which are misused from time to time.

(a) **Gross Import Savings** refers to the reduction in imports of the finished product which occurs. But before this can be measured, it is necessary to determine what would have happened to imports if the im-

<sup>1</sup> The contribution which the strategy can make to shifting the terms of trade has been ignored because it is assumed that Trinidad and Tobago is a price-taker and cannot exert any real pressure on food import prices.

port substitution policy had not been implemented. In the case of livestock products it is fairly certain that imports would have risen due to natural increases in total population, and rising per capita consumption associated with improved living standards. For this reason, the gross saving in imports tends to be underestimated by the commentators, if the price elasticity of demand for the imported food items is low and/or if prices did not rise excessively during the period.

(b) **Net Import Savings** is equivalent to Gross Import Savings minus expenditure on overseas imports. In the case of livestock the most obvious of these expenditures is animal feed and concentrates. In the Draft Third Five-Year Development Plan, it is stated that between 1963 and 1967, imports of meat and livestock products were reduced by some \$9.8 million, while expenditure on animal feeds and concentrates increased by \$8 million. But in addition to the feed costs, there are a number of other factors which would have caused an outflow of funds, chief among these being :

- (i) breeding livestock—animals, live chicks, hatching eggs;
- (ii) overseas capital—\$5 million from World Bank at 5 per cent per annum;  
\$1.7 million from Canada at 1¼ per cent per annum
- (iii) capital equipment—machinery, seed, fertilizers, etc.
- (iv) technical expertise from overseas — that part of salary which is spent on imported items or is sent overseas.

None of these four factors are generally taken into account in the calculation of net import savings. They all represent added costs which should be deducted from gross savings in just the same way as feeding costs in order to determine the net savings.

(c) **Net Contribution to the Balance of Payments** is equivalent to Net Import Savings minus net loss of exports, which results from :—

- (i) the diversion of resources away from export industries; and
- (ii) the adoption of retaliatory measures by those countries from whom Trinidad's imports are reduced as a result of the policy.

Briefly, following McCrone,<sup>1</sup> it can be said that before the net contribution to the balance of payments can be measured, the following six variables have to be quantified :

- (1) elasticity of demand for exports;
- (2) elasticity of supply of exports;
- (3) elasticity of demand for imported foods;

<sup>1</sup> McCrone, G., *The Economics of Subsidising Agriculture*, Allen and Unwin, 1962

- (4) elasticity of supply of food from home resources;
- (5) elasticity of supply of food from overseas;
- (6) the extent to which the above variables are interdependent.

If, for example, Trinidad's agricultural resources were free to be re-distributed, we would need to know what their productivity would be in both the import saving sector (that is, variable 3) and export industries (that is, variable 2). Then, we would have to determine the effect these hypothetical changes in resource distribution would have on international prices, and hence on the terms of trade (variables 1 and 5). The analysis would be complicated still further by the probable inter-relationship which occurs between certain of these variables. For example, it might be found that the volume of sales of Trinidad's exports to New Zealand is very closely related to Trinidad's purchases of livestock and livestock products from the same country, and so on. Even worse, it is most unlikely that the variables will remain constant over time. The longer the period, the higher will be variables 1 to 5 though it may be that the significance of variable 6 will decline, reciprocal trade being essentially a short-term concept.

To summarize the case so far, it can be said that it is virtually impossible to assess the contribution to the balance of payments which the import substitution policy made in the period but that it will certainly be less than the net saving of imports (which itself is likely to be small).

#### A Crude Analysis

(a) **Gross Import Savings** over 1963 had reached \$10.9 million (Table 1). This is a somewhat arbitrary figure being based on the unrealistic assumptions :

- (i) that all of the increased livestock production which occurred in the period can be attributed to the import substitution policy; and
- (ii) that per capita consumption of livestock and livestock products increased at 1 per cent per annum during the period, as a result of rises in incomes.

The major saving areas were milk and poultry, which together accounted for about 80 per cent of the total gross savings in the livestock sector.

(b) **Net Import Savings** can only be estimated when the outflow of funds incurred in realizing these gross savings is quantified. Table 2a shows that in 1967 expenditure on animal feeds increased by approximately \$4.9 million over that of 1963 as a result of increased livestock production. This figure is, again, only an approximate indication of what actually happened because :

- (i) it is assumed that all of the increased consumption of feeds occurred as a result of the import substitution policy;

- (ii) it is assumed that the locally produced wheat middlings which were used as feed (from 1965 onwards) were equivalent to 28 per cent of total imports of unmilled wheat, and represent an "import cost" of 5 cents per pound (the ex-factory price).

Table 2b shows that expenditure on imports of livestock in 1967 had increased by \$1.8 million over the 1963 level. This includes hatching eggs and breeding chicks, as well as breeding cattle. It is not certain that it is entirely fair to represent expenditure on cattle as a cost to the balance of payments, because the imported breeding livestock replaces itself over time, and might be regarded as a generator of capital. For the sake of simplicity it is included here, with the reservation that the capital value of the herd at the end of the period can be regarded as an additional benefit which should be included in the analysis at some stage.

These two items represent the major import costs to be deducted from the Gross Import Savings to determine Net Import Savings. The only other import costs to be deducted are :

- (i) interest repayments on foreign capital — \$½ million per annum
- (ii) imported capital equipment — \$¼ million per annum
- (iii) overseas expertise—very small.

On the basis of the simplifying assumptions already referred to, it would seem that, using 1963 as a base year, increased livestock production saved about \$3¼ million in foreign currency in 1967. Put another way, if livestock production had remained constant at its 1963 level, and no compensating development had occurred, the balance of payments would have suffered to the tune of approximately \$3¼ million.

It must be emphasised that the actual contribution which the Government programme made to the net saving of imports was probably considerably less than the figure quoted because :

- (i) there can be little doubt that livestock production would have risen above its 1963 level if the programme had not been introduced;
- (ii) that part of the increased production which occurred independently of the import substitution programme (by previously established private farmers) was probably produced at a lower cost—better management and lower feed conversion ratios.

In fact, all that can be said is that it is most unlikely that the import substitution policy contributed more than \$3¼ million to Net Import Savings, and that in all probability the actual contribution was considerably less.

(c) **Loss of Exports.** Before an assessment of the effectiveness of the policy in the period can be made, it is meaningful to attempt to identify the

“opportunity cost” of the policy. In theory we should ask, what could have been done with these resources if they had not been put into livestock production, and what would this have contributed to the balance of payments? It is not at all certain, however, that these resources (especially the World Bank loan) would have been made available for non-agricultural development. It would therefore be more realistic to consider what use, if any, the same resources could have been put to elsewhere in the agricultural sector.

Firstly, it has been argued by some that the land used by the Crown Lands Livestock Programme is of the poorest quality, and is not suitable for anything except, perhaps, livestock farming. But it would not be entirely realistic to restrict the analysis to use of this particular land. It might be more worthwhile to determine whether or not the same amounts of capital and labour could have been utilised more effectively in other areas.

In retrospect, there can be little doubt that substantial opportunities existed during the period for the development of export markets for tropical fruits and vegetables in both natural and processed forms. A cursory examination of the trade figures for the metropolitan countries shows that :

- (i) U.S.A. imports of such foods increased at an average annual rate of 72 per cent during the period, to reach approximately \$219 million T.T. by 1967;
- (ii) The Canadian and U.K. markets grew at about 40 per cent per annum during the same period.

It is most probable that exploitation of these markets would have contributed more to the balance of payments than the policy actually pursued, though it is not certain that such an alternative was technically, socially or politically feasible in the period under consideration.

**(d) Summary — the Net Contribution to the Balance of Payments.** The import substitution policy in the livestock sector probably made a small positive contribution to the balance of payments, but in retrospect, it seems likely that alternative uses of the same resources would have been profitable from the balance of payments standpoint.

The import substitution policy in the livestock sector probably made a small positive contribution to the balance of payments, but in retrospect, it seems likely that alternative uses of the same resources would have been more profitable from the balance of payments standpoint.

#### **Safeguarding Against Future Shortages**

The latest F.A.O. publication shows that, unless something drastic occurs in the next few years, there will be a serious “protein gap” at the end of the century—because protein production is growing no faster than world population, while there are already serious shortages in certain areas. This shortage may provide

a moral justification for livestock production in Trinidad, but it is not clear that it has any economic significance.

Without further analysis, four comments are advanced for consideration :

- (1) There is an important distinction between physical need for protein and a market demand for livestock products. It is this distinction that explains the fact that North American farmers are paid not to produce certain foods, that in Britain milk has been poured into the sea and down disused tin mines, that the Swiss Government has just paid its farmers to kill one-third of their dairy cows, while in the other half of the world thousands of people in Asia and Africa die of starvation. The situation may be totally immoral, but there is an economic explanation.
- (2) There is no apparent reason for believing that the poorer countries will reach a level of development such that they will be importing large quantities of livestock products this century.
- (3) Even if these countries achieve a rate of growth such that their effective demand for livestock products rises substantially it would probably be based on expansion of agriculture in the early stages — which would involve increased livestock production (particularly in Africa and Latin America).
- (4) Livestock production is a relatively inefficient means of producing protein and might be obsolete by the time there is an increased “effective demand” for protein.

#### **As a Means of Promoting General Economic Growth**

It has been argued that diversification away from traditional products can provide a springboard for economic growth. While the general thesis might well be valid, it cannot be applied across the board. In agriculture there are certain basic physical and socio-economic factors, which dissipate the advantages of import substitution (particularly in the livestock sector) thereby minimizing the contribution to general economic growth :

- (i) The temperate zones enjoy a climate advantage over tropical livestock producers. Even with equal entrepreneurial skills it is doubtful that Trinidad livestock farmers would be able to compete with their temperate counterparts.
- (ii) To the extent that local livestock production causes prices to rise, this exerts inflationary pressures on the general price level, causing the cost of living to rise and union activities to become more rigorous. Ultimately, this can lead to an increase in the price of those goods which Trinidad exports.

While diversification within the agricultural sector away from the traditional export crops may well be politically, socially and economically desirable, the point we are making is that as far as possible this diversification should be towards those areas where the Trinidad farmer enjoys a comparative advantage over his counterpart in the temperate zones, or at least where his comparative disadvantage is minimized.

### Employment

The Crown Lands Livestock Programme has been Government's main agency in implementing its import substitution policy in livestock and there can be no doubt that the Programme has created a large number of jobs. At the end of 1968, 197 families were settled on livestock farms, 14 on tree crop farms, and 217 on food crop farms. In addition to this, some 1,350 people are employed as daily-paid workers on the development programme. By the end of 1971, it is expected that approximately 2,000 families will be settled on Crown Land farms.

It is not possible to determine the total number of jobs the Livestock Programme has generated, but it seems that livestock production is not labour intensive, and is unlikely to provide any more jobs than alternative uses of the same resources. While it is generally accepted that increased employment should be a fundamental objective of Government policy, the increased employment provided by the Livestock Programme can

only be used as a justification of the Programme if it can be shown that alternative uses of the same (capital) resources in agriculture would have generated less employment (which is unlikely).

### Non-Economic Considerations

There were a number of sociological and political factors which militated against concentration on traditional export crops. Some form of diversification was inevitable, regardless of economic considerations (though there were very strong economic arguments for diversification).

As economists, we are not fully qualified to comment on these factors, but merely note their significance. But these factors might not be directly relevant to the specific question of livestock production. We suggest that these political and sociological constraints might have been satisfied by diversification in other areas.

While import substitution has an important role to play in the economic development of Trinidad, in the agricultural sector there have been certain physical and economic constraints which have dissipated most of the benefits of the policy. It would seem that future diversification policies within the agricultural sector should go beyond the narrow confines of import substitution.



**Table 1** *Estimated Gross Import Savings — Selected Livestock Products :  
Trinidad and Tobago, 1963–1968<sup>1</sup>*

Year	Eggs	Poultry	Pork	Milk	Total
	(..... dollars .....) )				
1963	—	—	—	—	—
1964	144,264	1,263,325	73,736	976,848	1,284,813
1965	229,780	3,068,513	38,864	2,664,255	6,001,412
1966	558,944	3,428,546	369,652	4,320,578	8,677,720
1967	983,627	4,097,527	973,915	5,051,220	11,106,289
1968	813,144	5,271,441	1,075,050	5,855,081	13,014,716

<sup>1</sup>  
In all the following tables, 1963 is used as a base year.

Table 1a.

Estimated Gross Import Savings — Pork: Trinidad and Tobago, 1963–1968

Year	Per Capita <sup>1</sup> Consumption	Population	Estimated Total Consumption	Net Imports	Production	Estimated Gross Import Savings	Average Landed Cost Per Pound	Estimated Gross Import Savings
	(pounds)	(number)	(.....pounds.....)				(.....dollars.....)	
1963	4.15	938,330	3,894,070	1,351,934	2,542,136	—	0.49	—
1964	4.19	962,490	4,032,833	1,627,246	2,405,587	- 136,549	0.54	- 73,736
1965	4.23	984,370	4,163,885	1,556,975	2,606,910	64,774	0.60	38,864
1966	4.27	996,000	4,252,920	1,190,147	3,062,773	520,637	0.71	369,652
1967	4.31	1,007,755	4,343,424	409,981	3,933,443	1,391,307	0.70	973,915
1968	4.35	1,033,000	4,493,550	- 39,420	4,532,970	1,990,834	0.54	1,075,050

<sup>1</sup> Assuming per capita consumption increased at 1% per annum.

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Table 1b.

Estimated Gross Import Savings — Milk: Trinidad and Tobago, 1963–1968

Year	Per Capita <sup>1</sup> Consumption	Population	Estimated Total Consumption	Net Imports	Production	Estimated Gross Import Savings	Average Landed Cost Per Pound	Estimated Gross Import Savings
	(pounds)	(number)	(.....pounds.....)				(.....dollars.....)	
1963	67.25	938,330	63,102,693	27,599,518	35,503,175	—	0.34	—
1964	67.92	962,490	65,372,321	27,078,151	38,294,170	2,790,995	0.35	976,848
1965	68.60	984,370	67,527,782	24,188,563	43,339,219	7,836,044	0.34	1,664,255
1966	69.29	996,000	69,012,840	22,708,219	46,304,621	10,801,446	0.40	4,320,578
1967	69.98	1,007,755	70,522,695	22,391,469	48,131,226	12,628,051	0.40	5,051,220
1968	70.68	1,033,000	73,012,440	22,871,558	50,140,882	14,637,707	0.40	5,855,081

<sup>1</sup> Assuming per capita consumption increased at 1% per annum.

Table 1c

Estimated Gross Import Savings — Poultry: Trinidad and Tobago, 1963-1968

Year	Per Capital <sup>1</sup> Consumption	Population	Estimated Total Consumption	Net Imports	Production	Estimated Gross Import Savings	Average Landed Cost Per Pound	Estimated Gross Import Savings
	(pounds)	(number)	(.....pounds.....)				(.....dollars.....)	
1963	17.00	938,330	15,951,610	6,567,209	9,384,401	—	0.49	—
1964*	17.17	962,490	16,525,953	4,395,193	12,130,760	2,746,359	0.46	1,263,325
1965	17.34	984,370	17,068,976	1,155,825	15,913,151	6,528,750	0.47	3,068,513
1966	17.51	996,000	17,439,960	602,198	16,837,762	7,453,361	0.46	3,428,546
1967	17.69	1,007,755	17,827,186	247,732	17,579,454	8,195,053	0.50	4,097,527
1968	17.87	1,033,000	18,459,100	432,993	18,026,107	8,641,706	0.61	5,271,441

<sup>1</sup> Assuming per capita consumption increased at 1% per annum.

\* It has been assumed that all of the post-1963 increases in production resulted from the import substitution policy.

Table 1d.

Estimated Gross Import Savings — Eggs: Trinidad and Tobago, 1963-1968

Year	Per Capital <sup>1</sup> Consumption	Population	Estimated Total Consumption	Net Imports	Production	Estimated Gross Import	Average Landed Cost	Estimated Gross Import Savings
			(.....number.....)				(.....dollars.....)	
1963	21.84	938,330	20,493,127	2,864,400	17,628,727	—	0.12	—
1964	22.06	962,490	21,232,529	4,806,000	16,426,529	- 1,202,198	0.12	- 144,264
1965	22.80	984,370	21,931,764	2,535,500	19,396,264	1,767,537	0.13	229,780
1966	22.50	996,000	22,410,000	481,700	21,928,300	4,299,573	0.13	558,944
1967	22.73	1,007,755	22,906,271	- 508,500	23,414,771	5,786,044	0.17	983,627
1968	22.96	1,033,000	23,717,680	- 687,244	24,404,924	6,776,197	0.12	813,144

<sup>1</sup> Assuming per capita consumption increased at 1% per annum.

**Table 2.** *Increase in Import Costs of Animal Feeds: Trinidad and Tobago, 1963-1968*

Year	Net Imports	Increase Over 1963	Average Landed Cost Per Pound	Net Increase In Feed Imports	Net Increase of <sup>1</sup> Imported Middlings	Total Increase Import Cost
	(.....pounds.....)		cents	(.....dollars.....)		
1963	75,256,211	—	9.15	—	—	—
1964	88,852,407	13,596,196	8.39	1,140,721	2,046	1,142,767
1965	108,514,035	33,257,824	9.94	3,305,828	237,154	3,542,982
1966	98,037,250	22,781,039	9.64	2,196,092	949,657	3,145,749
1967	105,732,440	30,476,229	9.75	2,971,432	1,916,345	4,887,777
1968	123,595,443	48,339,232	9.81	4,742,079	1,416,787	6,158,866

<sup>1</sup>  
Taken from Table 2a

**Table 2a.** *Increase in Import Costs of Wheat Middlings: Trinidad and Tobago, 1963-1968*

Year	Wheat Imports	Conversion Ratio	Imports of Middlings	Increase Over 1963	Average Wholesale Price	Net Increase of Imported Middlings
	(pounds)	(per cent)	(.....pounds.....)			(dollars)
1963	226,650	28	63,462	—	\$5.50 per cwt.	—
1964	375,450	28	105,126	41,664	" " "	2,046
1965	17,474,186	28	4,892,772	4,829,310	" " "	237,154
1966	69,292,630	28	19,401,936	13,338,474	" " "	949,657
1967	139,597,200	28	39,087,216	39,023,754	" " "	1,916,345
1968	103,265,710	28	28,914,399	28,850,937	" " "	1,416,787

**Table 2b. Increase in Costs of Imported Livestock :  
Trinidad and Tobago, 1963-1968**

Year	Imports	Increase Over 1963
	(.....dollars.....)	
1963	527,705	—
1964	938,944	411,239
1965	1,460,414	932,709
1966	1,776,411	1,248,706
1967	2,347,843	1,248,706
1968	2,248,219	1,720,514

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