THE PHILOSOPHY AND EXPERIENCE OF MAXIMISING FOOD SUPPLIES IN GUYANA

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Ideological Sources and Conceptual Development of the Programme

This discussion - the philosophy underlying our efforts at maximising food supplies - is a very deliberate choice, not because we feel we need to defend this philosophy, but because we need to try to dispel a few misconceptions and distortions which may have arisen in certain areas. In addition we would like to think that the modest successes we have had so far, and the lessons we have learnt from our mistakes may be of interest to others who are set on this same goal.

As we begin the last quarter of the twentieth century, no one believes any longer that economic man can be separated from social and political man. While national economic policies and programmes are often described in isolation, they are always related to deep-seated and complex motivations within the culture, the traditions, the experiences and human needs of the society. These many factors are expressed through the political direction with which a Government shapes its official policies and in the ideological concepts which underly Government's aims. Moreover, without the support of the political will and commitment - few programmes could succeed.

All our political leaders now have fervently espoused this goal of maximum self-sufficiency - but we are not always clear as to the depths of their commitment. We are fortunate in Guyana in this respect - we know where we are going and why. Even those who would disagree with our particular rationale must at least agree that it is logically consistent. Our Minister of Agriculture gave clear and concise directions to us at our annual staff conference in January of this year - in these words:

> *Whatever the nature of our duties we must perform them in the spirit and to the letter of the Government's commitment to Socialism. In short, we must direct our activities to improving the lot of the mass of the people - the small men - and give them special help and encouragement so that egalitarianism may be achieved with all enjoying a better quality of life.*

In our programme we are very much concerned with the quality of the human diet. We do not accept the thinking that to feed oneself adequately it is necessary to grow everything that is presently imported, or to find their identical substitute. This is clearly impossible. We need only to ensure that our diet has the highest possible proportion of foods which can be produced from locally grown crops, livestock and extracted from our fisheries.

There are other aspects to our philosophy which should be mentioned. Guyana is a country of several varying ecological zones. For planning purposes we have demarcated 14 different ecological zones. With these differences in micro-climate, a wide range of agricultural activities is possible. It is our intention to pursue a balanced development of the entire country. We must therefore quickly develop those enterprises which are best suited to hinterland regions, and provide them with supporting services and provide adequate market outlets for their products.

Guyana is made up of several ethnic groups which vary widely in origin, culture and tradition. We have communities which have had their origins in Asia, Africa, Europe and we have indigenous Amerindians. But in the development of a socialist society, each farmer regardless of his background, must be given the opportunity to develop successful farming operations which are compatible with his experience, traditions and motivations. It follows that we have to develop agricultural systems and technologies which would ensure the widest possible involvement of the people.

One of our major constraints in development is poor transportation. This results in the phenomenon of isolated communities widely scattered throughout the country. In some communities there are localised problems of malnutrition. It is our policy to make these areas self-sufficient in the basic foods. This would also contribute to further employment in those areas.

A study of food farms has shown that there is a large reservoir of young persons who are interested, and capable of developing farms of their own. This human resource we accept as a great natural blessing and this must be tapped. These young people came from all types of farms - cattle, poultry, rice, sugar and food crops. It is of the greatest urgency that we provide new farming opportunities for these young persons, and settle them on their own land.

We believe that the nation can be most fully and permanently developed by the efforts of the people themselves; that depending on our own efforts for the greater portion of the basic necessities of life, we will develop in the society a greater degree of self-reliance, not only for these basic needs but for all other needs.

The Five-Year Development Programme 1972-76 concretized in fullest detail our self-sufficiency policies. Despite several set-backs - two years of unfavourable weather for crops and the crisis of 1973-74 - we are still committed to the achievement of certain of its original goals. The following section of this paper examines the status of the Agricultural Sector's programme in some detail.

Adjustments to Guyana's Agricultural Development Programme in 1975-76

Introduction

The Development Programme 1972-76 still remains the basic document for the development of the Agricultural Sector but experiences of the years 1972-74 have led to some adjustments in both the direction and programme goals. The main agricultural products for export during the period will be rice, sugar and fishery products, which remain the main

pillars of export agriculture.

With regard to domestic food supplies the nation is self-sufficient in meat, pork, eggs, poultry, but very deficient in milk and dairy products generally. In the food crop sector, vegetable oils remain in chronic shortage, while other food crops have tended to keep up with demand with an upward trend in prices.

Since the publication of the 1972-76 plan, there have been major changes in the world situation and these have necessitated adjustments in the 1972-76 programme of work in agriculture. Among the more important changes in the world economic situation which have strongly influenced the 1972-76 programme were:

(i) phenomenal increases in the prices of imported agricultural inputs: fuels, fertilizers and machinery;

(ii) shortages of fertilizers and machinery;

(iii) the good export prices for rice and sugar;

(iv) the high prices of imported foods; and

(v) world inflationary trends.

The Demand - Supply Outlook

The crop and livestock production targets in the 1972-76 plan were intended to make agriculture contribute substantially to the rate of growth of the economy as well as feed the nation by 1976. With the rapid gains in export earnings for sugar and rice in 1974, and the favourable outlook for 1975 and 1976, the contribution of agriculture to the growth rate for the period has been assured. The food crop sector demand and supply situation was subjected to fairly careful study and are reasonably reliable. With regard to the livestock sector, the production figures are reasonably accurate, but accurate demand figures have not been compiled. However, Guyana is reasonably self-sufficient in all livestock products, with the exception of milk and milk products. With an improvement in the standard of living, the demand for livestock products may be expected to rise considerably, and, consequentially the need for feed grains.

Table 1 gives the demand as against supply of the main domestic requirements for food and feed items. An examination of these figures, would disclose that:

(i) by 1976, Guyana would be reasonably self-sufficient in a wide range of the food crops and livestock products;

(ii) the increase in domestic demand for rice would be substantial;

(iii) there is the need for a major increase in output of vegetable oils and corn;

(iv) there is the need for a major effort in increased production of milk since self-sufficiency by 1976 would only be 33 per cent;

(v) there could be a surplus of ground provisions, pineapples, citrus, pork and cassava, thus, steps need to be taken to engage in processing and to seek export markets; and

(vi) the ban on importation of potatoes (not sweet) has avoided a glut of ground provisions.

It is recognised that the ban on potatoes (not sweet) may cause an increase in the consumption of rice as well as ground provisions and flour, so that unless there is stability in the prices of ground provisions at reasonable levels, there could be a great increase in rice consumption which would erode export earnings. The demand for sugar is around 30-33,000 tons per annum, thus, an increased output could lead to a direct increase in export earnings.

Sector Targets

The agricultural targets which have been quantified and presented reflect not only the aim to improve the overall growth rate of the economy, but the desire to fulfil the social goals of the nation. The objectives of the programme adjustments will carry over into the next five year development period and will form the basis of the new thrust which aims:

(i) to increase export earnings by a rapid increase in the exports of sugar and rice;

(ii) to increase the level of domestic self-sufficiency in food items and feed grains now imported and which can be produced locally, especially milk, ground provisions, vegetable oils, peas and beans, peanuts and fruits, corn, soya bean, vegetables;

(iii) to establish efficient cooperative production systems in crops, livestock, processing and marketing, not only to improve efficiency, but also the level and equitable distribution of income;

(iv) to accelerate the economic development of the six regions of the country, through the planned location of major impact agricultural projects;

(v) to create 10,000 new jobs through the expansion of primary agriculture, agro-industry and related fields such as textile manufacturing, oil seed and fruit processing; and

(vi) to produce 6,000 acres of cotton annually.

Sector Strategies

The general strategy for the development of the agricultural sector incorporates both the expansion of acreage and the increase of output per acre or per animal. In general, the first priority will be the expansion of acreage on soils which can be developed without major infrastructural inputs, and which are not heavily dependent on high inputs of fertilisers; secondly, the expansion of the total number of production units and finally, selective yield improvement programmes. Prominent among the selective yield improvement programmes for crops will be the improvement of drainage and irrigation facilities in farming areas which are at present totally dependent on rainfall, and the large scale control of the acoushi ant.

The major factor contributing to this selective yield improvement policy, is the high cost of factors of production - fertilisers, fuel

and machinery - in a country that has ample resources of land which are suitable for agriculture. In the crops programme, a special Food Crops Unit will be established to coordinate the Accelerated Production Drive Programme. This Programme was started in 1974, but because of its tremendous initial success, is being greatly expanded.

Basically, the A.P.D. Programme is a promotional technique which incorporates technical assistance, financial assistance and an assured market for a specific number of crops. The Programme embraces corn, cassava, blackeye peas, peanuts, sweet potatoes, yams, tomatoes, citrus, cabbages and papaws. The incentives include free planting materials, land clearing, planting and harvesting loans, loans for draining of lands and the making available of pesticides on credit.

A special programme has been launched for the large scale control of insect pests of the coconut, in all parts of the country. With regard to rice production, increases in rice prices, efficient marketing and services are the main promotional techniques. With sugar, acreage expansion and improved varieties are being encouraged.

In the livestock sector the following strategies are being used:

- subsidised feeds for pigs and poultry
- developing more ranches within the ambit of the Livestock Project Division
- improved veterinary and livestock services.

During 1975 there would be 20 ranches under the L.P.D. Scheme, raising to 29 in 1976, and the output of beef from L.P.D. ranches would increase from 1.1m. pounds in 1975 to 1.5m. in 1976.

A definite effort will also be made to shift cattle ranching and dairy farming from the coastal area to the intermediate savannahs and Moblissa, and to rear beef and dairy cattle in these regions in combined crops/livestock systems. In the North West District, the emphasis will be to produce beef from dairy animals in a dairy beef cattle/crops system along with supplemental feeding.

A programme has been initiated to achieve self-sufficiency in hatching eggs. In pigs, the ham and bacon factory will be completed in 1975, thus giving an assured market for pork. The establishment of the cooperative multiplication centres will be accelerated. At Yarrowcabra, a settlement based on pig farming will be established.

Finally, in order to improve veterinary and livestock services, a veterinary diagnostic laboratory will be erected in late 1975.

An important element of the production strategy, is the broadening of the production base. During the 1972-74 period, there was a very successful expansion in the number of new individual farms and farmers' cooperatives. The more important are as follows:

(i) the Livestock Development Company;

(ii) the Agricultural Products Corporation;

(iii) the National Service;

(iv) the Moblissa Dairy Project; and

(v) the Ministry of Agriculture.

The Livestock Development Company will take over the Ebini Station, expand the herd size and put the ranch under commercial management. The Agricultural Products Corporation will engage in both primary production and processing. Primary production will be primarily the growing of corn, soya bean, blackeye peas, peanuts, oil palm, white potatoes and red kidney beans. Processing enterprises will include:

(a) production of salted, smoked, canned fish and fish meal;
(b) canning of orange juice at Mabaruma and Charity;
(c) production of tomato ketchup and papaw nectar at Black Bush Polder;
(d) processing of pineapples into juice, jam, jelly and chunks;
(e) establishing plants at Charity, Kaituma, Parika, North West District and East Bank, Demerara, to process cassava into cassava flour and by-products;
(f) production of peanut butter;
(g) establishment of an oil palm extraction mill at Wauna;
(h) processing of ground provisions and vegetable crops into dried and flaked food products; and
(i) establishment of a 40-50 ton/24 hours Vegetable Oil Mill at Farm, East Bank, Demerara.

The Ministry will be establishing commercial dairy units at Moblissa and Matthew's Ridge. At full development the Moblissa project would embrace 3,000 acres and would cater for the establishment of a national herd of 800 cows and the resettlement of dairy farmers - driven out from the city by the spread of urbanisation - into 5 *large* units of 100 cows in milk each, 16 *small* units of 50 cows in milk each. Although primarily a dairy project, a sizeable amount of beef would be produced from the male calves and culled dairy animals.

The National Service Centre at Kimbia plans to concentrate as a main enterprise on the growing of cotton, in a blackeye peas/cotton rotation so as to satisfy the National objective of clothing the nation by 1976. It is planned to have its own mechanized harvesting, drying and baling facilities. This target is fixed at 6,000 acres, since this is the amount of cotton required to give the textile mill its full throughput. It is estimated this acreage would yield 3m. pounds cotton per year and over 4m. pounds cotton seed or 60,000 gal. cotton seed oil (expeller produced) and 3.4m. pounds cotton seed cake meal. The centre will produce substantial amounts of blackeye peas. The Centre would also prepare young persons for a career in agriculture and produce its own food needs *in situ*.

Incentive Policies

In order to stimulate production, the incentives for farming will be greatly increased. Among the direct production incentives which will be made available to farmers during the plan period, are the following:

- duty-free importation of stock feed ingredients, agricultural machinery and appliances and their spare parts, hand tools, fertilisers, manures, insecticides, fungicides, weedicides,

inoculants, motor vehicles for the transportation of produce from agricultural farms, bee-keeping equipment and materials;

- free and subsidised planting material and seeds of all recommended food crops;
- subsidised animal seed-stock;
- subsidised bush clearing either by machines or hand methods;
- subsidised minor drainage and irrigation works;
- loans and grants through the Accelerated Production Drive programme for drainage and irrigation works;
- the establishment of buying centres in the major production centres to collect, transport and distribute produce rapidly and extensively and to consumers through the establishment of distribution centres;
- guaranteed purchase of all saleable produce offered by farmers at remunerative fixed incentive prices;
- sale by the Ministry of fertilisers and pesticides at subsidised prices in the farming districts;
- credit to be made available to farmers from the Agri Bank quickly, especially for internal drainage, pumps and equipment;
- control of pests and disease through special pest control units;
- subsidised feed for livestock producers.

State Support for Agriculture

Apart from the direct subsidies for the farming community the Government would expand its state support activities for agriculture.

Agricultural Extension and Education: A major boost would be given during the period to the training of professionals in agriculture, young farmers and adult farmers. During the plan period the following would be implemented:

- reorganisation of the extension services to increase the quantity and quality of advice to the farming community;
- the establishment of an Agricultural Extension In-Service Training and Communications Centre for 30 agricultural officers in courses 1 - 2 weeks duration;
- the training of 100 farmers per year in mechanised agriculture, at the Agricultural Mechanisation Centre;
- establishment of a Caribbean Animal Health Technician Training Centre for approximately 72 students from Guyana and the Caribbean, for 2 year courses;
- establishment of 6 Rural Training Centres with places for 216 farming trainees per course of 1-2 weeks duration, i.e., around 4-5,000 farmers per annum;
- establishment of school farms and the expansion of agricultural education in schools;
- the re-introduction of clubs for young farmers;

- the expansion of the School of Agriculture by increasing the dormitory facilities from 112 to 200 resident students; and
- the establishment of 3 rural farm institutes.

Agricultural Research: Within the man power availabilities in the Ministry, research on all aspects of agricultural production will be continued. Because of the expansion of the National Research Council, the establishment of the Caribbean Agricultural Research and Development Institute at Ebini, and the coming on stream of the Rice Research Centre, the national agricultural research output will be enhanced. Every attempt will be made to prevent overlapping and to coordinate activities. Most of all, every effort would be made to ensure that all aspects of agriculture are considered before research priorities or programmes are funded and implemented.

The emphasis would be on applied research, with priorities on:

(i) crops especially corn, soya, cassava, blackeye peas, peanuts, cotton;

(ii) oil palm;

(iii) animal nutrition techniques including feed-lot fattening of cattle and use of pasture legumes;

(iv) veterinary control of livestock pests and diseases;

(v) agricultural extension techniques;

(vi) crop pest and disease control;

(vii) soil fertility; and

(vii) farm management.

During 1975, the Resource Development and Planning Division is being strengthened by the incorporation of an agricultural statistical and data collecting section.

Lands and Surveys: The Lands and Surveys Division will this year move into new quarters. This will enable a much quicker handling of titles and the issuing of leases, and also enable it to produce topographical and survey maps at a much quicker rate.

Drainage and Irrigation: It is recognised that one of the major limiting factors to agricultural production on the coastal region is efficient drainage and irrigation. Towards this end the Government plans to declare drainage and irrigation a national problem and has set the long term goal of draining and irrigating all the coastal lands between the Pomeroon and Corentyne Rivers which are suitable for agriculture by 1985.

During 1965-76, emphasis will be given to the implementation of the following projects:

(i) the Mahaica-Mahaicony-Abary Project;

(ii) the Coastlands Pumps Drainage Project;

(iii) Tapakuma and the Tapakuma extension;

(iv) The Outfall Channels;

(v) Mibikuri Secondary Canal, Black Bush Polder; and

(vi) Minor works on the Coast and Riverain Areas.

Regional Emphasis: The fullest possible use would be made of the regional framework to accelerate agricultural development, from the points of view of identification of projects, implementation and supervision. In every region, there shall be major impact agricultural projects which would serve the purpose of providing employment and development.

One of the most important considerations in the regional approach to agricultural development is the concept of food security. Every region must as far as possible have programmes which would ensure an adequate amount of food for the local population, not only to provide nutritional improvements but as a guarantee against localised food shortages.

Table 1. Production of Main Food Items, 1974-76

Commodity	1974 (Actual)	1976 Targets	1976 Demand	1974 Production as a Percentage of 1976 Demand
	('000 lb.)			
Vegetable Oils	15,000	17,000	23,230	65
Plantains	22,000	24,000	23,600	93
Ground Provisions	45,000	50,000	44,250	102
Cabbages	2,000	2,000	1,000	200
Tomatoes	3,700	5,200	5,200	71
Citrus	20,000	21,250	21,250	94
Pineapples	3,900	3,900	3,200	121
Bananas	11,000	11,000	10,250	107
Blackeye peas	1,200	1,500	1,400	86
Peanuts	154	395	910	17
Rice ('000 tons)	163	180	60	272
Sugar ('000 tons)	351	400	33	1,033
Corn	6,000	16,000	22,000	27
Soya Bean	250	1,250	-	-
Beef	8,300	10,000	10,000	83
Pork	2,500	3,000	3,000	83
Table Eggs ('000)	35,000	37,000	37,000	95
Poultry Meat	12,500	12,900	12,900	97
Milk	24,000	30,000	-	-

Table 1 (continued)

Commodity	Acreage	Total Production (million lb.)
Vegetables:		
Pumpkins	-	4.0
Cabbage	300	2.5
Green beans	-	6.0
Onions	-	0.2
Carrots	-	0.2
Tomato - table	800	4.0
processing	100	1.0
Egg plant	-	5.0
Fruit:		
Oranges	3,200*	23.0
Other Citrus	-	2.5
Pineapple	1,200**	5.9
Bananas	1,500	10.0
Mixed Fruit	-	0.8
Meat & Dairy Products:		
Beef		8.0
Milk		2.5
Pork		3.0
Goat Meat		50,000 lb.
Mutton		120,000 lb.
Poultry - Broilers		12,500 lb.
Table egg		2,900 doz.
Honey		80,000 lb.

* some not bearing
** some new planting

A Review of the Development of Specific Small Farmer Production Projects in Guyana

Background Considerations - Implicit and Explicit

The process of growth at the small farmer level is governed by so many complex and interacting relationships that no single development model can be broadly applied, even within the relatively narrow range of human, soil and climatic resources of Guyana. Policy choices are further complicated in a sector characterised by wide variations

in scale of operation, organization and technology within the sector. We have come to accept, for example, that the sophisticated and precise technology established for so many decades in sugar production, has had little or no influence - except indirectly from the competition for land and labour - on small farm non-sugar enterprise. The same is true of rice, but to a lesser degree, in that the technology is less precisely standardised and the scale of operation (or range in size of farms) is narrower.

Many national policies employ non-specific programmes of farm development based on implicit assumptions related to capital investments, improved technology and the ability and readiness of the average small farmer to participate. Such policies further assume the complete replacement of the traditional systems which have developed over time.

This complete negation of the traditional systems is an important failure factor in many development programmes - including settlement programmes wherein ideal crop and livestock systems are imposed from the beginning. Except a crop is completely new, e.g., oil palm in North West Guyana, or the settlers have no previous practical experience of agriculture, it must be recognised that ancestral practices and cultural traditions become a part of people and move with them whereever they move. Downer [1] has given articulate expression to the new concepts that have been condensing gradually around us. Early in the crisis year of 1974 he had pointed out that:

(a) *in the quest'Production for Survival' it must be recognised that traditions lie behind every step of the production process and each stage of technological advance must be built on the experience of the previous level; and*

(b) *having no well developed base in the food crop sector, as exists with rice, we must start at a relatively low level and 'encourage the farmers to plant what they have and what they know'. As with physical laws of acceleration, while the greatest effort is required to overcome initial inertia, no matter what your eventual velocity, the first change is from relative zero. The analogy fits Beckford's* [2] *analytical description of the peasant subsistence economy, where the production possibilities frontier remains static over time, because tradition tends to dominate economic and social life and the effect of the outside market is small. In our case, the description fits the farmers outside of rice and sugar and a few relatively recent market garden areas such as Canals Polder and Black Bush Polder which supply the East Coast urban areas. In this case the transition from subsistence to commercial agriculture will occur as a result of an exogenous shock of the type Beckford called 'fortuitious non-agricultural developments' - the impact of the oil and finance crises of early 1974.*

Berbice River Corn Project

The Berbice River Corn Project was the first of several new departures in corn production which are now collectively termed the Accelerated Production Drive. Once the decision was made that we would accept the traditional farming system as the logical base -

the rule book was very literally thrown away. We should examine the sequence in development of this project in some detail.

Stage I: An emergency committee headed by the Minister of Agriculture and comprising all Heads of Agricultural Divisions and Corporations set out one evening in March 1974 to identify, locate and programme agricultural production projects. When the meeting was adjourned in the early hours of the next morning, the Berbice River Corn Project was well on its way.

Stage II: Besides the fact that it was where the Guyana Marketing Corporation purchased the first corn, there was little information on the area. No one knew exactly how many farmers there were, how much land was available nor what cropping systems were practicable. A fact-finding party was sent in two days later, and by the following Sunday the main committee, headed by the Minister, went into the River, stopped at all the main farming communities, and discussed the proposed programme with farmers and enquired as to their needs and possible constraints.

Stage III: The components of the programme were established as follows:

(a) a competent Agricultural Officer (or *Corn Pusher*) would be stationed full time on the river;

(b) farmers around each of eight centres would be grouped into production groups each headed by a *Captain* and one or two *Lieutenants*;

(c) production incentives would be offered to farmers to plant corn, consisting of: (i) free seed, (ii) interest free cash advances of $50 for every acre cleared and planted, and (iii) interest free credit in kind for a variety of inputs: hand tools, chain saws, shotguns and ammunition (to control bird and animal pests), and pesticides and fertilizers where necessary; and

(d) corn shellers and bags would be provided to the farmers at harvest time. The corn would be purchased by the Marketing Corporation on the river, at a price of not less than $14 per 100 pounds shelled corn.

Stage IV: An Agricultural Officer was appointed, seed was obtained, and field work began. Immediately, one assumption was discovered to be false. The Berbice River farmers planted very little corn in this - the long rainy season (Autumn Crop), except in a few high spots, where they planted dry-land rice and interplanted with some corn. Nevertheless, the programme forged ahead with remarkable response from the majority of the farmers. Although only 60 per cent of the farmers actually took the risk, all of them were involved in one way or another and of that 60 per cent only one-half of them actually took cash advances.

Table 2. Farmers' initial response to Berbice corn production drive

Area	No. Farmers in Group	1974 Autumn Crop		Incentive Loans	
		No. Farmers Planting	Area Planted	No. Farmers	Acres
De Veldt	33	28	84.5	11	62
Sandhills	23	18	56	10	39
Kimbia	52	31	115	23	106
Ebini	25	18	35.5	13	28
St. Lust	51	23	54	15	33.5
Maria Henrietta	46	29	38	8	19.5
Calcuni	26	16	14	5	6
Ituni	32	10	14	2	4.5
Total	288	173 or 60%	411	87 or 30%	298.5

Stage V: The weather was favourable to the farmers who entered the programme with some misgiving and even though the crop was planted very late in the season and in the traditional irregular stands, yields were good - averaging 1,000 pounds per acre (estimated on a pure stand basis), and producing just under 300,000 pounds of dry corn. It is regrettable that of all the constraints which the programme encountered, the most telling ones were those resulting from bureaucratic red tape of one form or another which resulted in muddled communications, non-supply in good time of essential items and pointless delays in financial disbursement.

Stage VI: The purchase of the crop, the payment of the farmers, transshipment to Georgetown, drying to 14 per cent moisture and sale to the feed mill, all was smoothly completed. The farmers were paid $18 per 100 pounds shelled corn which was the Georgetown price at the time of writing - $23 less the transport and loss in weight in final drying. Of the $14,000 extended as cash advances, 92 per cent was repaid by deductions from the farmers' sales. The total cost of the credits, interest subsidy (computed at 9 per cent) including a six months deferral on the unpaid balance and an allowance for 5 per cent write-off of the unpaid balance comes to $1,610 equivalent to a cost subsidy of 11 per cent on the credits.[1]

The Accelerated Production Drive

The Berbice River Corn Project was the vehicle by which the

[1] Postscript: A total of 288 farmers - all the farmers involved in the programme - have planted 2,500 acres of corn in the current Spring Crop. The total expansion of acreage of farmers' corn within one calendar year has been 2,000 acres producing an estimated 2m. pounds of dry shelled corn.

concept of the accelerated food production drive was crystallized, and before that project was three months old, the A.P.D. had also been launched. The programme details varied in certain respects, and in the case of cassava production was directed specifically to producing a local flour to blend with wheat flour and reduce wheat imports.

In order to ensure the volume of production required to yield 700,000 pounds of cassava flour per month, the cassava drive was embellished with incentives and interest-free credits to the value of around $150 per acre. The programme was slow in starting mainly because of difficulty in obtaining suitable planting material, but by December 1974, over 4,000 acres had been established with varying degrees of success.

The rest of the A.P.D. concerned itself with other food crops, vegetables and fruit including soya bean - a new crop to the Guyanese farmer, and coconuts, in which the drive is for rehabilitation of existing fields. As the farmers were not required to provide any substantial technical management, special arrangements were made for the technical servicing of the programme. Each commodity class was assigned to a special team of Ministry of Agriculture personnel consisting of:

(a) Research Officer, Technical Assistant, Field Assistant, and

(b) the Agricultural Extension Officer in each district.

One has a distinct feeling of discomfort in the presence of prophecy when one reads Renee Dumont [3] in 1963, proposing to the Government of Guyana that the extension service should be re-organised - so as to provide both specialised services around export commodities in addition to direct services aimed at production for local consumption; to improve national nutrition and reduce imports. The consequences of this programme were described by Downer [4] in his summary review of the programme at this year's staff conference:

> *The programme hinges essentially on the provision of short term credit, on the grouped supervision and on guaranteed markets to the farmer, in return for his interest and activity. In just one cropping season it is clear that the programme has had, and will have, far-reaching consequences. Among these can be included in broad categories:*
>
> *(1) Production*
>
> *The level of production of virtually every crop in the programme (and these include corn, blackeye peas, etc.) has been increased substantially. Beyond this, the programme has encouraged the development of 'pockets' of motivated farmers who can develop their skills and distil from the local traditions of Guyana the essence of production and use of our indigenous food and other plants, e.g., cassava in the Pomeroon, corn in Upper Berbice River, etc. Its efforts promise to be comparable to those of Black Bush Polder on rice production, at a fraction of the cost.*
>
> *(2) Marketing*
>
> *The increased production already seen has served to heighten awareness of the importance of marketing and marketing facilities (recently emphasised by the Ministry of Agriculture). The handling*

of the material produced in the Berbice River - Corn Project showed clearly that in the processes of drying and transportation, a significant proportion of our currently unemployed youths could be afforded the opportunity of gainful work (and employment). It also encouraged market planning on a quality basis, and herein lies what is possibly the second most important single merit of the programme.

The quality ingredient in planning implies in the first instance the recognition of the need for processing of agricultural produce, e.g., corn, soya beans, etc., into livestock feed; but further encourages changes in the basic of planning from production per se to more subtle concepts. In the second instance, the demand for, and use of, different quality levels determines how arrangements are to be programmed for production. It also identifies locations for production and could thereby foster the development of strategically sited industries, e.g., citrus juice production with its auxiliary but small livestock feed factories.

(3) Research in Crop Production

Most Third World countries would do well to produce while totally ignoring productivity in terms of land space initially. This is the hall mark of A.P.D. The primary effect of the programme is widened scope for research workers in the different scientific disciplines concerned with crop production to devote themselves to projects geared towards finding ways and means of satisfying the quality parameter in terms of intended and/or recommended use of individual crops. Facts or concepts unearthed would serve as a basis for the planned growth and development of agro-based industries. As such industries grow the need for productivity would become more and more obvious to the individual farmer and therefore to the community at large. A paradox is exposed here and that is, that though production, rather productivity, is advocated as the basis of operation, it is unwise to await a signal from production before initiating research into productivity. In the context of Guyana, such research has been on-going though in somewhat of a discontinuous and disoriented manner for well nigh on three-quarters of a century. A.P.D. will now serve by virtue of its momentum to emphasise distinct research objectives. Among these will be research objectives tied to:

(1) Production: Locating the best soils in the best locations for production of specific crops, and therefore for siting of industries which would obtain supplies of raw materials from farms in adjacent areas.

(2) Utilization: (a) finding improved and/or new ways to utilize crop produce, defining the best or optimum means of handling, storage, etc. of crop produce; (b) separating types of a given crop, in terms of potential use, on a quality basis; and (c) finding ways of utilizing hitherto unused crop material. In the context of Guyana, the need for livestock feed ingredients cannot be overstated and therefore, investigation in this area will obviously be of paramount importance. After all is said and done, crop produce and other materials from crop production provide the basic support for any agro-based industry.

(3) Productivity: Identification of best seeds (type and quality), determination of optimum fertilizer inputs, control of pests and diseases, refinement and improvement of local seed material, etc. Beyond such exercises, it is clear that in Guyana services which permit the supply of seed, fertilizers, and chemicals for control of pests and diseases must be initiated and developed in strategic locations. The availability of these services may yet prove to be the catalyst for total success.

The foregoing shows rather clearly that A.P.D. as a concept, is of tremendous importance not only to Guyana, but to the Third World as a whole. The significance of the exercise lies in the following:

(1) The vital step towards the development of a production base and therefore of ensured survival, has been taken. It remains now to accelerate the growth of this base. Most likely this will be achieved by:

(i) allocation of a reasonably-sized group of farmers to each agricultural extension officer within an organization community and at the same time allowing him to be more of a technical adviser/helper than of a clerk; and

(ii) ensuring that each Extension Officer so allocated, is adequately trained or informed in the skills which he is required to introduce, improve, etc.; and is in contact with a research oriented officer in the areas of endeavour likely to be relevant to his particular situation.

(2) Planning the development of agricultural and Agro-based industries:

(i) on the evidence available in the form of market data (quantity and quality); these could be useful as determinants for production targets in the demand sense but could serve more importantly as a means of maintaining a sense of balance in the production system;

(ii) after identification of areas of land development schemes or projects, recognizing and describing necessary preparatory works, e.g., soil surveys, water control systems, access roads, etc.; and

(iii) after careful description of objectives of desired research in terms of: (a) efforts of immediate impact to production, and (b) efforts geared to long term objectives, e.g., potential day to day, as well as industrial utilization, etc.

Perhaps the greatest significance of A.P.D. in today's context is that it allows us to set targets not only for production but also for utilization of produce, and having done so, to chart a route by which the target(s) will be achieved. A.P.D. can also help us to avoid the pitfalls of demand - as opposed to production-oriented programmes in the process of developing our nation. It is noteworthy that the consulting group - Robert R. Nathan Associates Inc. - agreed with the basic tenet of A.P.D. They recommend sometime after our Accelerated Production Drive had been launched, that the strategy of the moment should be 'Production now, productivity later'. It is also

noteworthy that rice, Guyana's solitary small farm crop not only enjoys the benefits of a well organized marketing system but is almost completely free of internal demand considerations while being closely subject to the quality parameter of grain length. Undoubtedly, the significance of A.P.D. is that it helps and encourages us, as Guyanese farmers, to do our 'thing' and do it well.

If we accept the implications of A.P.D. as listed above, then the programme needs to have but three basic ingredients:

(i) a basic plan for desired progress - a charted course of action;

(ii) a description of the proposed means of implementing the plan; and

(iii) a programme of staff development such as would ensure that staff of an appropriate calibre is available for the maintenance and sustenance of any desired out-growth of the current drive.

Acceptance of Technological Platforms

A 1952 Census of Agriculture [5] established that small farmer corn yields averaged 1,150 pounds per acre and in areas such as Berbice River might be as low as 700 pounds and also that the average acreage planted was just over 2 acres. At that time there were 58 farms recorded from the Berbice River as food crop farms cultivating an average of 2 acres each and only 34 of these sold produce off the farm to the value of less than $150 each. Twenty years later, except that there are more food crop farmers (about 600),[1] the cropping pattern and yields exhibit very little change.

If one followed the common assumptions that basic changes in technology and appreciable increases in yield are essential for small farm development, we would go no further with the Berbice River exercise. We would also have implicitly adopted by derivation, another fallacy - that farmers who are untrained and tradition-bound require an intensive extension application to move them up the production ladder.

We must therefore, accept Downer's platform thesis - we have attained the first level of participation, expansion of acreage and identification of leaders within the farming community. Now it should be relatively easy to achieve growth by direct transmission of technical knowledge through the programme and in part by specific instruction and demonstration to build up to the second and third level targets for yield and quality.

Technology Transfer Effects

While it is yet early to assess the totality of technological

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[1] The reasons for this increase would seem to merit further investigation, as it is certainly not obviously related to economic opportunity.

transfer that has been effected, almost entirely as an incident and not as a primary purpose, of the Accelerated Production Drive, indications are that this has been fairly substantial, and that the programme has had the effect of an extensive Result Demonstration. Some of the more obvious components of the transmission have been:

(a) food crop farmers have had to replace their customary irregular and *higgedly-piggedly* style of planting with one of pure stands for food crops;

(b) scienficic pest control has become a necessary feature of the cultivation of certain food crops;

(c) shifting cultivation in the reverain areas is being gradually reduced as each farmer seeks to establish the maximum planted acreage; and

(d) group farming - especially in respect of the area organization and distribution of services, has been the main ingredient in the relative success so far in the Berbice River exercise. One may confidently predict that this type of organization will become more common.

Sector Growth Effects

Using the classic identification established by Schultz [6], it would seem that in Guyana at any rate, the traditional farmer will respond positively to psychological and material incentives, that there is little incidence of hide - bound mentality or of backward - sloping supply curves. An appreciable, though as yet unmeasured, effect within the sector has been that many food crop farmers are being raised out of the subsistence to the commercial level. The impact of this transformation and its multiplying quality is the most important single growth effect coming out of the programme. Beckford [2] posited many years ago that it should be possible to expand small-holder production very rapidly because small-holders control a very flexible family labour input.

The major question follows naturally, *"Are we equipped and prepared to expand and continue the essential supporting technical services?"* Unfortunately, the answer must be that we are prepared but far from adequately equipped. To use Downer's [1] sad summation *"... the Technical staff ... (in Agriculture) comprises too small a number of individuals too gravely inexperienced in Agriculture, to make the (necessary) contribution"*.

And here we have the single greatest obstacle to our development process that exists today. The current scene in respect of managerial and technical expertise in Guyana resembles an impossible game of musical chairs in which the numbers of professionals and technicians are decreasing progressively while vacancies and new positions are increasing at an accelerating rate. Measures are being taken to reserve this trend but, as always in a developing country, it seems that one will never close the gap, but drastic circumstances require drastic cures and we will have to find a remedy of some kind.

Table 3. Summary result: Berbice River corn production drive

A. PHYSICAL RECORD

Area	Acres		Yields (lb.)		Disposal (lb.)	
	Planted	Reaped	Total	Per Acre	Sold	Retained
de Veldt	84.5	79	66,620	843	62,470	4,150
Sand Hills	56	56	44,550	796	41,600	2,950
Kimbia	115	104	63,090	607	57,240	5,850
Ebini	35.5	35.5	28,270	796	25,437	2,850
St. Lust	54	54.5	42,458	825	38,483	3,925
Maria Henrietta	38	38	28,649	754	24,426	4,225
Calcuni	14	14	9,230	659	7,130	1,900
Ituni	14	14	12,985	999	10,935	2,050
Totals	411	391	295,852	756	267,721	27,900

Table 3 (continued)

B. FINANCIAL RECORD

Area	Advances*					Gross Repayment	Repayment of Advances	Net Repayment
	Tools	Shotgun & Ammo	Insecticides	Cash	Total			
De Veldt	171	1,600	-	2,300	2,371	11,298	2,242	8,899
Sand Hills	101	-	-	1,950	2,051	7,487	1,896	5,492
Kimbia	381	2,000	38	5,300	5,719	10,339	4,547	5,516
Ebini	44	1,200	4	1,375	1,429	4,593	1,318	3,231
St. Lust	250	1,600	-	1,625	1,875	7,037	1,554	5,221
Maria Henrietta	125	1,600	-	975	1,100	4,388	924	3,413
Calcuni	-	-	-	300	300	1,277	272	1,005
Ituni	78	-	-	225	303	1,968	197	1,704
Total	2,050	8,000	42	14,050	15,142	48,387	12,950	34,481

* Shotgun advances separately accrued and interest computed.

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