SOME FACTORS AFFECTING THE DEMAND FOR STARCHY ROOTS AND TUBERS IN TRINIDAD

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The agricultural development programme of the Second Five Year Plan 1964–1968 of Trinidad and Tobago has been designed "to bring about sustained increases in agricultural production" to meet the "dominant objective of policy", that of reducing the share of imports in total food consumption.[1] "The aim over the plan period is, therefore, to establish the basis for a productive small and medium farm system geared to produce increasing quantities of milk, eggs, poultry, green vegetables, root crops" and so on.[2] The plan continues that "it is important that growers be educated to realize that their income rests upon high yields, reduced costs, and a satisfactory *average price* and not upon the maintenance of high prices for small outputs.[3] What has not been emphasized by the planners however, is that income and the satisfactory price to root crop farmers depend, in the face of a concerted effort to increase root crop production, to a large degree, on the nature and level of the demand for root crops.

In Trinidad, starchy roots and tubers are generally called ground provisions while white potatoes are called Irish potatoes. The starchy roots and tubers or ground provisions that are commonly used as food in Trinidad are dasheen, yams including cush-cush, tannias, eddoes, sweet potatoes and cassava. These are referred to in this paper as starchy roots.

Analysis of the demand for starchy roots has been handicapped by the dearth of statistics. Information on domestic disappearance of starchy roots in Trinidad is not available, while estimates of root crop production are available for some years but their accuracy and reliability are suspect. Another very serious handicap is that records or copies of very valuable studies that would provide the basis for future work have not been kept, thereby requiring an expensive duplication of past efforts. The magnitude of the efforts expended to promote agricultural development has somehow vitiated avoidance of analyses of the demand for starchy roots under the pretext that adequate information is not available.

II

The theory of consumer behaviour postulates that a consumer is generally willing to take more of a commodity at lower prices than at higher prices.

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1 Government of Trinidad and Tobago, **Draft Second Five Year Plan 1964–1968**, 1965, p. 174.

2 Government of Trinidad and Tobago, **op. cit.**, p. 173.

3 Government of Trinidad and Tobago, **op. cit.**, p. 175.

On this basis, economists generalize that the individual consumer demand curve for a commodity slopes downward and to the right. The demand curve for starchy roots represents the functional relationship between price and the quantity or amount demanded. It shows for each price how much of a given starchy root the consumer would buy at the price. It should be noted that each point on the demand curve or schedule represents an alternative market possible for the period of time under consideration. The individual consumer's demand curve must rest on at least the following premises : (1) given tastes ; (2) given money incomes ; and (3) given other prices or their mode of variation. The market demand curve for starchy roots then becomes the aggregate of the demand curves of individual consumers, actual and potential.

The general characteristic of the demand curve for a commodity is for the amount of the commodity demanded to increase as its price falls or decrease as its price rises. The amount of the commodity demanded or purchased, therefore, responds to price changes. The concept of elasticity of demand is used to measure or describe the degree of responsiveness of changes in the quantity demanded to price change.

This concept of elasticity refers to movement along the demand curve in question. The elasticity of demand is defined as the ratio of the proportionate change in the quantity wanted to the proportionate change in price. Price elasticities of demand for individual starchy roots largely reflect the degree of substitution for starchy roots. Where the elasticity of demand is greater than one, that is, demand is elastic, the total outlay of consumers on the good rises in response to a fall in price. When the elasticity of demand is less than one, an inelastic demand, total consumers' outlay on the commodity falls as its price is reduced. But where the elasticity of demand equals one, outlay by consumers on the commodity is constant whatever the price of the commodity.

The entire demand curve can shift up and down, or to the left or right. This is referred to as a "shift" in demand or a change in its level. The level of the demand for starchy roots is mainly influenced by the size of the population, consumer income, supplies and prices of competing commodities, and consumer tastes and preferences.

III

The demand for starchy roots is predicated on a given taste and preference pattern of consumers. Tastes and preferences may have as important an influence on the demand for starchy roots as prices and incomes. Changes in consumer tastes and dietary patterns tend to be a gradual process. Studies of consumer preferences, nevertheless, may aid in the understanding of the market for starchy roots and may also suggest ways for influencing demand.

A consumer preference survey conducted in March 1967 indicated, as is shown in Table I, a preference for Irish potatoes over the starchy roots.

Sweet potatoes, dasheen, cassava, yams and cush-cush were preferred in the order listed. Tannias were the least preferred of all the starchy roots. The United States Inter-departmental Committee on Nutrition also found that "in the

matter of roots and tubers it was quite apparent that the Trinidad population generally likes white potatoes".[4]

The preference pattern of the families surveyed closely paralleled their average weekly purchases of starchy roots. This is shown in Table 1. Average weekly purchases of starchy roots per family ranged from 3.6 pounds for Irish potatoes to 0.5 pounds for tannias. The order of magnitude of the average weekly purchases of starchy roots by households should not be regarded, however, as an indication of consumer preference as it reflects, in addition to consumer tastes and preferences, the influence of other forces affecting demand.

Table 1. Preference, Quantity Purchased, and Expenditure Per Week on the Average of 116 Households, Trinidad, March 1967

Commodity	Rank Score[1]	Average purchases per week (pounds)	Weighted average price per pound (cents)	Expenditure per household (cents)
Irish Potatoes	85.4	3.6	12.0	43.9
Sweet Potatoes	83.8	1.9	11.9	23.7
Dasheen	81.5	2.4	9.6	23.1
Cassava	75.4	1.1	10.6	12.1
Yams	73.5	1.6	13.3	21.4
Cush-cush	70.0	0.8	19.5	5.7
Eddoes	65.0	1.0	11.7	1.6
Tannias	44.1	0.5	14.8	7.1

1 Rank score is in terms of first place votes. 8 points were alloted for a first place vote and 1 for a last place vote or no rating. The total points accumulated for each starchy root was then divided by 8 to obtain the rank score in terms of first place votes. Irish potatoes, obtaining the highest rank score, was taken as the most preferred. A low rank score is regarded as being down on the scale of preferences.

The reasons most frequently advanced for preferring Irish potatoes to the starchy roots were (1) variety in preparation ; (2) availability ; (3) taste ; and (4) because it is economical. Some of the reasons advanced for preferring the respective starchy root to all others were :

Dasheen	*Yams*	*Sweet Potatoes*	*Irish Potatoes*
Taste	Taste	Taste	Variety in preparation
Starchy texture	Variety in preparation	Sweetness	Taste
Ease of preparation	—	Availability	Availability
—	—	—	Economical

In many instances, a clearly stated preference for a given starchy root was not accompanied by any regular purchases of the root in question. Further exam-

4 U.S. Inter-departmental Committee on Nutrition for National Defense, **A Report of Nutrition on Survey of Trinidad and Tobago, St. Lucia, St. Christopher, Nevis and Anguilla,** June 1962, p. 109.

ination indicated that the demand for starchy roots may be indirectly affected by (1) the limited ways of preparation ; (2) method of marketing and merchandising ; (3) uncertainty about product quality ; and (4) high wastage in preparation.

These four factors indirectly affect the demand for starchy roots since they tend to influence adversely consumer tastes and preferences for starchy roots. A frequently voiced criticism of starchy roots, on the whole, is the limited ways in which these starchy roots can be prepared. Starchy roots such as dasheen, yams, and sweet potatoes are boiled, peeled and served plain. Variations to the traditional method of preparation are few. The growing sophistication of the population and the desire to add variety often result in irregular or no purchases of starchy roots and the gradual omission of starchy roots from the diets.

There is no processing and grading of starchy roots before marketing. Starchy roots enter the market place just as they leave the farmers' fields, unwashed, varying in size and shape, and with varying degrees of damaged and unsaleable tubers. The increasing importance of super-markets and selfservice and the declining importance of public markets have resulted in some discrimination against starchy roots as the modern housewife is reluctant to handle the unwashed product. In addition, these unwashed starchy roots generally leave the kitchen sink in a very messy state. This problem is not encountered with plantains and bananas.

The gradual exclusion of starchy roots among the urban population has sometimes been explained away by the desire of the population to ape the dietary habits of Europeans. A more logical explanation, however, is the adverse reaction of consumers to the inherent short-comings of starchy roots now that they are in a better position to choose. The effects of uncertain product quality and high wastage are discussed later under relative prices.

The self-evident solution to wash the starchy roots before marketing is not as simple and straight-forward as may appear. Experience with sweet potatoes indicated that some dirt on the sweet potato tuber was desirable. There was the tendency for skin blemishes and scars to show up on the washed sweet potato tuber. Even though these skin blemishes did not affect the quality of the tuber in any way. consumers none-the-less regarded these blemishes as indicative of damaged and unsound tubers. Further, the washed tubers had very poor eye-appeal, even poorer than the unwashed tubers, and a shorter shelf life.

The major outlet for starchy roots is food consumption. Industrial uses, except for cassava to a limited degree, are virtually non-existent. Very small quantities of starchy roots have sometimes been used as livestock feed. Except for normal waste and losses in marketing, the supply that reaches the consumer is exactly equal to that marketed by farmers. Imports from the neighbouring islands constitute a significant portion of the total supply of sweet potatoes available as food.

Per capita consumption of yams, sweet potatoes, eddoes and tannias, has shown a marked downward trend for the period 1954 to 1963. Per capita consumption of cassava and dasheen has demonstrated for the same period a slight upward trend. Per capita consumption of Irish potatoes, however, has remained

stable at a relatively high level. In 1963, consumption per person of Irish potatoes was 366 per cent greater than that of yams and almost 300 per cent greater than that of sweet potatoes.

The high per capita consumption of Irish potatoes, the clearly indicated preference for Irish potatoes over starchy roots and the declining per capita consumption of starchy roots (dasheen and cassava excepted) have led to the conclusion that the demand for starchy roots is declining and that efforts should be redirected towards stimulating production of Irish potatoes. A low per capita consumption *per se* is not conclusive evidence of low or declining demand for a commodity, especially when domestic consumption represents the major outlet for the product. A declining per capita consumption may also reflect the influence of changes in supply.

Table 2. Per Capita Consumption of Yams, Dasheen, Sweet Potatoes, Cassava, Eddoes, Tannias, and Irish Potatoes, Trinidad, 1954–1963

Year	Yams	Dasheen	Sweet Potatoes	Cassava	Eddoes	Tannias	Irish Potatoes
	(..... pounds .....)						
1954	11.6	8.0	15.4	7.5	4.5	—	28.7
1955	11.1	8.3	17.1	7.8	3.7	—	33.3
1956	12.7	7.7	19.7	11.2	3.7	7.0	30.2
1957	9.5	6.2	15.5	6.9	3.7	7.1	29.9
1958	9.6	6.2	14.7	6.9	3.7	7.0	29.9
1959	9.3	6.0	14.9	6.8	3.0	7.0	28.6
1960	9.5	6.2	14.4	6.9	1.0	6.7	26.8
1961	8.5	8.5	8.5	8.2	1.1	8.6	26.9
1962	5.2	8.7	6.5	7.4	1.9	7.1	29.8
1963	5.9	9.7	6.9	8.9	1.8	4.5	27.5

Source : Based on data obtained from the Ministry of Agriculture, Trinidad.

The availability of Irish potatoes in relation to the availability of starchy roots may be one of the factors responsible for its relatively high per capita consumption. Yams, dasheen, sweet potatoes, eddoes and tannias are not as readily available to consumers as are Irish potatoes because of inadequate storage, limited channels of distribution, and limited distributive outlets. Irish potatoes can be purchased at super-markets, groceries, small shops and public markets in every part of Trinidad throughout the year. Starchy roots are sold in super-markets and in public markets in the urban areas, but only in the public markets in the rural areas. Small quantities may sometimes be sold by vendors in front of shops on a Saturday morning in rural areas where there are no public markets. Groceries and small shops do not handle starchy roots at all.

The adverse effect of the limited availability of starchy roots on their per capita consumption is magnified by the fact that there is a general tendency for most families to patronize the grocer daily. "Only a few foods such as sugar, flour, rice and condiments are stored in the home."[5] There is therefore little or no cost involved in getting supplies of Irish potatoes and rice as needed from the corner grocery.

5 U. S. Inter-departmental Committee on Nutrition, op. cit., p. 114.

Supplies of starchy roots require a special trip to the public market. The pattern of diet may largely be dictated by the food available.

IV

Prices of substitutes tend to affect the demand for starchy roots. Yams, dasheen, sweet potatoes, cassava and tannias compete amongst themselves and with rice, plantains, green bananas, Irish potatoes and wheat (flour, bread, macaroni) as sources of carbohydrate in the diet. In Trinidad, rice is commonly the principal food, while "roots and starchy vegetables are consumed in relatively small quantities".[6] In 1958, per capita consumption in Trinidad of total cereals was 285.5 pounds, of rice 103 pounds, and of roots and starchy vegetables including plantains 146.3 pounds.[7]

The dietary pattern in Trinidad is such that though starchy roots, Irish potatoes, and the other bulky perishables such as plantains and bananas compete in a general way with rice, the tendency is for these carbohydrate foods to be regarded as vegetables to supplement rice and add variety to the diet.

Starchy roots, Irish potatoes, and bulky perishables (plantains and bananas) compete with each other in the lesser role of vegetables in the Trinidad diet. A high degree of responsiveness of the quantity of the individual starchy root purchased to changes in price is therefore to be expected. Consumers, given their preference pattern, tend to substitute the relatively cheaper starchy vegetable.

Estimates of the price elasticity of demand at the retail for sweet potatoes and yams were obtained for the period 1954 to 1963 from the regression of price on per capita consumption. The average price elasticity of demand for sweet potatoes of 1.13 and for yams of .99 were obtained from the following demand equation[8] :

$$\text{Yams}: \quad P_y = 20.76 - 1.12\, q_{y\,(r^2 = .81)}$$

$$\text{Sweet potatoes}: \quad P_s = 19.61 - .689\, q_{s\,(r^2 = .77)}$$

Where : P_y — price per pound of yams (undeflated)

P_s — price per pound of sweet potatoes (undeflated)

q_y — per capita consumption of yams

q_s — per capita consumption of sweet potatoes

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6 U. S. D. A., **Projected Levels of Demand, Supply and Imports of Agricultural Products to 1975,** ERS Foreign 94, p. 68.

7 U. S. D. A., **op. cit.,** p. 69.

8 Average price for yams was 10.34 cents; for sweet potatoes 10.4 cents; and the average per capita consumption of yams was 9.29 pounds and of sweet potatoes 13.36 pounds.

Analysis of the price relationships of bulky perishable staples may be handicapped by lack of comparable price data. The same difficulty in the market price tends to limit the influence of price changes on consumer behaviour. Mere price ratio comparisons may be misleading as choice indicators. Uncertainty with regard to product quality, particularly in the case of dasheen and cassava, makes market price comparisons difficult. Both dasheen and cassava tend to "turn", that is, become inedible when cooked. This characteristic is more pronounced at certain times of the year than at others and has the effect of transforming the given market price per pound to a price per pound of infinity. Consumers develop a reluctance to purchase dasheen or cassava. They tend to substitute dasheen or cassava for other starchy vegetables only when the price ratios are very much in favour of dasheen or cassava. Small changes in the price of both dasheen and cassava may have little influence on the quantity purchased. A linear regression of retail price on per capita consumption of dasheen for the period 1954 to 1963 yielded a coefficient of determination of .112. Only 11.2 per cent of the variation in the retail price of dasheen was accounted for by variation in per capita consumption.

Differences in edible yield of the competing carbohydrate foods influence the effects of price changes on consumer behaviour and also tend to make actual market price comparisons misleading. Starchy roots have comparatively thick skins which have to be removed by peeling before they can be used as food. The extreme head ends are unpalatable and are therefore rejected. A pound of starchy root yields somewhat less than a pound of edible material. The percentage of edible material from a pound of starchy root or carbohydrate food is called the edible yield. Edible yield ranged from 60 per cent of market weight for green bananas to 90 per cent for Irish potatoes. Losses in preparation have the effect of raising the real price per pound of starchy roots and of altering the price relationship of the competing carbohydrate foods in favour of those with high edible yields. On the basis of actual market prices prevailing at the Tunapuna public market in June 1966, consumers would normally substitute rice for only tannias and plantains since their prices were 7 per cent higher than the price of rice. When edible yield was considered, only dasheen, Irish potatoes and bananas were cheaper than rice (Table 3).

Table 3. Edible Yield, Actual and Adjusted Prices and Price Relatives of Carbohydrate Food at Tunapuna Market, June 1966

Commodity	Edible Yield[a] (per cent)	Actual Price (cents)	Adjusted Price[b] (cents)	Actual Relative[c] (per cent)	Adjusted Relative[d] (per cent)
Rice	100.0	15	15.0	100	100
Dasheen	77.5	8	10.3	53	69
Yams	78.3	12	15.3	80	102
Sweet Potatoes	78.1	14	17.9	93	119
Tannias	78.1	16	20.5	107	137
Cassava	63.1	10	15.8	67	105
Irish Potatoes	90.0	12	13.3	80	89
Bananas	60.0	6	10.0	40	66
Plantains	61.1	16	26.2	107	175

Source : *Weekly Market Report, Tunapuna Market, June 1966.*

a Edible yield is the percentage of edible matter per pound of actual weight.
b Adjusted prices equal actual prices divided by the respective edible yield.
c Actual price relative is the actual price of the commodity as a percentage of the price of rice.
d Adjusted price relative is the adjusted price as a percentage of the price of rice.

Actual and adjusted price relatives for the bulky perishables using the price of Irish potatoes as the base are shown in Tables 4 and 5 respectively. Actual market price comparisons indicate that while bananas have been relatively cheaper than Irish potatoes, plantains have generally been more expensive. Yams and sweet potatoes, once cheaper than Irish potatoes, have become more expensive.

Table 4. Prices of Starchy Staples as a Percentage of Irish Potato Price, 1954–1963

Year	Irish Potato Prices	Irish Potatoes	Dasheen	Yams	Sweet Potatoes	Plantains	Bananas
	(cents)	(..... price relatives .....)					
1954	8.2	100	73	68	66	160	60
1955	9.7	100	98	73	84	157	59
1956	9.5	100	87	86	84	167	56
1957	9.6	100	96	96	86	167	58
1958	10.2	100	125	101	84	180	59
1959	10.3	100	108	103	109	178	62
1960	11.2	100	102	99	82	161	62
1961	9.7	100	100	132	162	173	67
1962	12.3	100	77	115	117	134	48
1963	12.5	100	81	115	121	134	46

Source : Based on data from Government of Trinidad & Tobago, Central Statistical Office, *Annual Statistical Digest.*

Table 5. Prices of Starchy Roots as a Percentage of Adjusted Irish Potato Prices, 1954–1963[a]

Year	Irish Potato Prices	Irish Potatoes	Dasheen	Yams	Sweet Potatoes	Plantains	Bananas
	(cents)	(..... price relatives .....)					
1954	9.11	100	85	79	76	235	90
1955	10.78	100	114	84	96	231	88
1956	10.56	100	101	99	97	246	84
1957	10.67	100	111	110	99	245	87
1958	11.33	100	146	116	97	266	88
1959	11.44	100	125	118	125	262	93
1960	12.44	100	118	114	95	237	92
1961	10.78	100	116	152	186	255	101
1962	13.67	100	90	132	135	196	72
1963	13.89	100	94	132	139	198	70

Source : Based on data published from Government of Trinidad and Tobago Central Statistical Office, *Annual Statistical Digest.*

[a] Adjusted prices obtained by dividing actual market prices by edible yield in Table 3.

When edible yields are taken into consideration (Table 5), with the exception of bananas, price ratio comparisons generally favoured Irish potatoes. When price relationships favoured starchy roots the relative availability of Irish potatoes in terms of time and transport cost tended to minimize any tendency towards substituting starchy roots for Irish potatoes.

There is every reason to believe that consumers take edible yield into consideration in adjusting their behaviour to price changes. One of the reasons advanced for preferring Irish potatoes to the other starchy roots was because it was more economical. In addition, many of the respondents to the survey were concerned with being able to provide their family with sufficient food for the outlay that the family could afford to devote to food. It is important to note also that price relationships are generally less favourable to starchy roots in the super-markets than in public markets.

The characteristic pattern of distribution of agricultural produce in Trinidad is for produce to move from areas of production to the terminal markets in Port-of-Spain and San Fernando and to be redistributed from these terminal markets, through a network of vendors, handling relatively small quantities, back to the rural areas. Starchy roots follow this pattern of distribution. The transportation component from this two-way haul is twice as great in the rural prices as in the urban prices of starchy roots. In addition, these vendors usually have fairly high mark-ups. These high margins are needed to allow for product losses in transit due to poor packing and handling and, in the absence of grading, to compensate for quantity purchased but not received because of unsaleable tubers and foreign matter. In contrast, rice, other cereals and Irish potatoes move one-way from urban to rural. Losses in transit are negligible and the urban-rural transportation differentials are normally small, about ½ to 2 cents per pound. Prices of starchy roots are generally higher than prices of rice and Irish potatoes in the rural areas.

Small scale farming in Trinidad is characterized by the dominance of plantation crops and part time farmers. Farm family food supplies, because of the part time nature of farming come mainly from plantations and bananas, which require less labour to cultivate and harvest than the majority of areas. Family incomes are lower in rural areas than in urban areas while price levels are generally higher. Given the lower income and the higher price levels in rural areas, a lower level of satisfaction is attained and hence a lower level of demand. The tendency for plantains, bananas, or rice to provide home-grown food, the lower the real income, and the adverse price ratios of starchy roots suggest a low level of demand for starchy roots in the rural areas.

V

The level of income is an important factor influencing the pattern of food consumption in the longer run. For individual foods, however, the response of consumption to changes in income depends on the per capita level of consumption. At very high levels of consumption, the demand for an individual food may show very little response to changes in income even though consumers may be relatively poor.

Average weekly purchase of Irish potatoes was approximately the same for

the different income groups in the households surveyed, ranging from 3.47 pounds in the low income group to 3.70 pounds in the high income. The quantity of Irish potatoes purchased displayed a positive correlation with income (Table 6). From the other starchy roots, average weekly purchases declined as incomes increased. Weekly household purchases of yams dropped from 1.79 pounds among the low income group to .93 pounds among the high income group, while purchases of sweet potatoes dropped from 2.25 pounds per household to 1.0 pounds per household among the high income group. Purchases of starchy roots tended to decrease as incomes increased.

Table 6. Weekly Purchases per Household of Starchy Roots and Tubers by Income Groups, One Week, March 1967 in Pounds for 116 Households, Trinidad

Commodity	Average annual family income		
	$2,500	$8,500	$17,500
	(..... pounds .....)		
Dasheen	3.09	1.12	1.71
Yams	1.79	1.38	.93
Eddoes	1.26	.64	0.0
Tannias	.63	.19	.43
Sweet Potatoes	2.25	1.31	1.0
Cassava	1.35	.65	.57
Cush-cush	1.11	.35	0.0
Irish Potatoes	3.47	3.83	3.7
No. of respondents	73	36	7

Evidence of the effect of income on demand for starchy roots is inconclusive as the income elasticity of demand in terms of quantity for sweet potatoes has been estimated at .40, for other roots and starchy vegetables at .25, and for Irish potatoes at .40. A negative income elasticity of demand for sweet potatoes of – .3 has been estimated for Jamaica.[9] The positive correlation of Irish potatoes to income is in agreement with the survey result. Changes in taste, relative prices and the competition from substitute carbohydrate foods may well be the dominant factors in determining the demand for individual starchy roots.

If the sample of households surveyed is representative of the population and the pattern of purchases for the week typical, then increasing per capita income over time may lead to a lowering of the demand for starchy roots. A linear regression of quantity purchased to income yielded an average income elasticity of demand of – .29 per cent in the quantity of sweet potatoes purchased.

VI

The demand for starchy roots may also be adversely affected by the increased number of wives in the labour force (resulting in the trend towards easily prepared staples) and the changing composition of the population. With the increased share of the retail grocery trade captured by super-markets and the declining importance of public markets, the uncertainty about the quality of starchy roots, the primitive

9 U. S. D. A. ERS Foreign 94, **op. cit.**, p. 160.

manner in which starchy roots are marketed and the increasingly adverse price ratio for starchy roots all point to a declining demand for starchy roots. Growth of demand associated with population increases may for a time offset the trend toward declining per capita consumption of starchy roots.

This stable per capita consumption of Irish potatoes over time and the uniformity of purchases among income groups suggest that Irish potatoes have assumed the role of a minor staple providing much needed variety to rice. This role of a minor staple can be attributed to its high edible yield, its availability, and above all to the fact that it can be prepared in several ways.

The present state of knowledge precludes any definitive statements about the level of demand for starchy roots in Trinidad. Economic models of the root crop industry are needed in order to estimate price and cross elasticities of demand and to assess fully the impact of changes on the supply and prices of substitutes of the demand for root crops. Consumer acceptance studies are also needed in order to tailor starchy roots to meet consumer requirements. What is clear is that unless drastic changes in taste occur there is little likelihood of starchy roots replacing rice or Irish potatoes as the staples in the Trinidad diet. The important consideration at this stage revolves around the measures that are necessary in order for starchy roots to maintain their position and not decline any further in relative importance as carbohydrate foods.

A very vital and basic requirement is an improved product. Product improvement should take the form of increases in edible yield which will result in a more favourable price relationship, uniformity in shape and size of tubers to facilitate packing and merchandizing, an improved appearance, and a greater degree of reliability in product quantity. Improvement in product quality will bring about improvement in marketing and distribution.

New and improved ways of using starchy roots must also be developed. At present, starchy roots and other bulky perishables are being promoted and marketed as snack foods. Increased demand for starchy roots as raw materials in preparing snack foods depends on the competitive position of starchy roots and on consumer acceptance of the final product. Development of new uses and of new ways of using starchy roots are necessary to increase their demand. New ways must include the potentials of starchy roots as raw materials in livestock feed formulations.

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