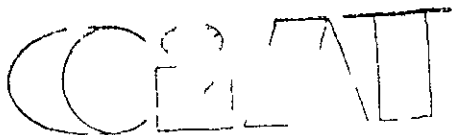


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CENTRO DE INVESTIGACION Y EDUCACION

4 Cassava

MICROFILMADO

Since cassava is a root crop it is a very efficient producer of carbohydrates. Moreover it is particularly well adapted to marginal agricultural conditions producing relatively good yields under stress due to soil and climatic factors. However upon harvest it is highly perishable contains 60% water or more and is extremely bulky with minimal storage potential. Thus quite favorable production characteristics contrast very sharply with very unfavorable market characteristics. Quite simply cassava is an ideal rural subsistence crop but is a high priced vegetable crop in urban markets due to marketing problems. With the high cassava price in urban markets cassava loses its comparative advantage to grains due to their lower marketing margins. Food uses predominantly in rural areas determine the demand for cassava in Latin America.

The growth in cassava production has not kept pace with the rates of growth in the production of grains. Cassava production in Latin America in the 1960-78 period increased at only 1.9% per annum well below the population growth rate of 2.8% (see Table 4.2). This large implicit gap between supply and demand raises two hypotheses. The first assumes constraint on the production side and asserts that the lag in production growth generates rising prices and that the lack of supply response is due to constraints on area expansion or lack of yield increasing technologies. The second hypothesis assumes that the principal constraint is on the demand side and suggests that demand is growing at less than the population growth rate. The potential impact of new technology on traditional cassava food markets obviously depends on which hypothesis is operative.

consumption was declining wheat flour consumption increased 23/ between 1975 and 1976 Thus the decline in cassava consumption in 1975 is at least partially due to an own price rise and a substitution effect The third demand factor could be a low income elasticity at least for flour A low income elasticity may not apply to fresh cassava as there were increases in per capita consumption levels in the urban areas in the North-east and South

Rising prices together with declining production are reducing the role of Brazil in cassava export markets (see Table 4 6) Moreover growth in export markets have seen a relative shift away from starch toward pellets as an animal feed component almost wholly as a result of price policy in the EC market This market has been captured almost entirely by the Far East principally Thailand

Thus cassava in Latin America is following much the same pattern as maize where it goes principally into food uses (see section 6) That is production appears to be stagnating due to lack of demand growth A significant growth market for cassava products is needed This may be provided in Brazil by the alcohol program As well within Brazil the economic rationality of a policy that subsidizes wheat both on the production side and on the consumption side therefore effectively discriminating against the consumption of a domestically produced alternative is not clear Outside of Brazil market growth will probably come in the animal feed sector as has happened in maize However to competitively exploit these markets yield increasing technology and processing technology will be required

Table 4.2 CASSAVA Annual Growth Rates in Production Area and Yield 1960/78

	Production			Area			Yield		
	1960/70	1970/78	1960/78	1960/70	1970-78	1960/78	1960/70	1970/78	1960/78
Cuba	4.1*	3.1*	2.8*	4.2*	2.3*	2.9*	-0.1	0.9*	0.0
Dominican Rep	1.3	-0.8	1.5*	-1.1	1.3	1.4*	2.4*	-2.0	0.2
Guyana	2.1*	7.7	3.6*	0.0	4.8	1.7	2.1*	2.9	2.9*
Haiti	1.2*	1.6*	2.2*	0.8*	0.9*	1.1*	0.4	0.7*	1.2*
Jamaica	-0.1	9.8*	6.2*	2.8	-6.2*	-1.6	-3.0	16.0*	7.8*
Costa Rica	4.1*	3.6	1.1	2.7	-6.0*	-2.5*	1.4	9.6*	3.6*
El Salvador	3.6*	1.0	3.3*	3.5	-4.6	1.2	0.1	3.5	2.1*
Guatemala	3.0*	3.0*	3.2*	0.0	6.8*	2.9*	3.0	-3.8	0.3
Honduras	8.6*	-18.2*	-0.7	2.4*	3.0*	2.8*	6.2	-21.2*	-3.5
Nicaragua	5.0*	6.1*	-4.5*	4.8*	6.5*	4.2*	0.2	-0.5	0.2
Panama	13.0*	0.0	8.1*	4.6	3.3*	7.9*	8.4	-3.3	0.3
Venezuela	-0.2	2.5	0.4	0.5	0.4	1.5	-0.6	2.0*	-1.2
Bolivia	8.8*	4.3*	6.5*	6.6*	4.3*	5.0*	2.2	0.1	1.5
Colombia	3.9*	6.7	6.6*	1.7*	6.2*	3.6*	4.2	0.4	3.0*
Ecuador	5.4*	-5.1	3.0*	4.9*	-2.8	2.8*	0.6	-2.4	0.2
Peru	2.7*	-2.9*	0.5*	3.3	0.1	0.7	-0.6	-2.9*	-0.2
Brazil	5.6*	-2.6*	1.7*	4.4*	0.8*	2.5*	1.2*	-3.4*	-0.8*
Argentina	2.1*	-3.7	-0.5	3.3*	-2.4*	0.5	-1.2*	-1.3	-1.0*
Paraguay	6.1*	1.5	2.3	3.4	0.2	2.2*	2.7*	1.3	0.1
Latin America	5.4*	-1.8*	1.9*	4.0*	1.1*	2.4*	1.4*	-2.9*	-0.5

Significance Levels (*) = .05

Source: FAO Production Yearbook (19)

Table 4 4 Cassava Per Capita Consumption in Brazil in Fresh and
Flour Forms 1960 and 1975

Country	1 9 6 0			1 9 7 5		
	Fresh Cassava	Cassava Flour	Total	Fresh Cassava	Cassava Flour	Total
	----- Kilograms -----					
Northeast	7 1	55 2	172 6	4 3	43 7	135 4
Urban	9	26 8	81 3	3 2	20 4	64 4
Rural	10 3	69 7	219 4	5 2	55 0	170 2
Southeast	11 8	17 0	62 8	4 5	5 9	22 2
Urban	4 4	6 4	23 6	2 0	2 7	10 1
Rural	20 2	29 0	107 2	5 0	14 1	47 3
Sao Paulo	5 7	3 7	16 8	2 4	1 1	5 7
Urban	2 5	2 4	9 7	1 3	1 0	4 3
Rural	11 1	5 8	20 5	4 3	1 7	9 4
South	44 6	12 1	80 9	15 8	3 5	26 3
Urban	3 7	5 2	19 3	7 6	2 5	15 1
Rural	68 7	16 2	117 3	23 2	4 4	36 4
North and West	-	-	-	5 0	23 6	75 8
Urban	-	-	-	0 4	45 5	136 9
Brazil	14 9	26 3	93 8	6 1	17 6	58 9
Urban	3 0	11 6	37 8	2 7	9 7	31 8
Rural	24 7	38 3	139 8	11 2	29 4	99 4

Source Getulio Vargas Foundation (28) and IBGE (29)

Table 4 6 Summary of World Trade in Cassava Products 1962-1976

Region	Net Exports			Net Imports		
	1962-64	1972-74	1976-78	1962-64	1972-74	1976-78
	THOUSAND TONS - FRESH ROOT EQUIVALENT					
<u>LATIN AMERICA</u>	210	157	94	-	-	-
BRAZIL	200	151	81	-	-	-
<u>AFRICA</u>	140	206	102	-	1	-
<u>ASIA</u>	2170	5870	10 367	150	517	523
INDONESIA	280	818	777	-	-	-
MALAYASIA	80	94	100	-	2	-
THAILAND	1710	4958	9400	-	-	-
JAPAN	-	-	-	110	305	307
<u>NORTH AMERICA</u>	-	-	-	824	820	547
U S A	-	-	-	812	800	527
<u>EUROPE</u>	-	-	-	1520	4935	9483
EEC	-	-	-	1504	4928	9453
WORLD TOTAL	2520	6261	10 572	2496	6273	10 559

Source FAO Cassava Supply Demand and Trade Projections 1985 (17)