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IICA



**ESTIMATED GROWTH IN DOMESTIC
CROPS AREA, YIELD,
AND PRODUCTION
1969 - 1988**

WHAT IS IICA?

The Inter-American Institute for Cooperation on Agriculture (IICA) is the specialized agency for agriculture of the inter-American system. The Institute was founded on October 7, 1942 when the Council of Directors of the Pan American Union approved the creation of the Inter-American Institute of Agricultural Sciences.

IICA was founded as an institution for agricultural research and graduate training in tropical agriculture. In response to changing needs in the hemisphere, the Institute gradually evolved into an agency for technical cooperation and institutional strengthening in the field of agriculture. These changes were officially recognized through the ratification of a new Convention on December 8, 1980. The Institute's purposes under the new Convention are to encourage, facilitate and support cooperation among the 32 Member States, so as to better promote agricultural development and rural well-being.

With its broader and more flexible mandate and a new structure to facilitate direct participation by the Member States in activities of the Inter-American Board of Agriculture and the Executive Committee, the Institute now has a geographic reach that allows it to respond to needs for technical cooperation in all of its Member States.

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1969 - 1988**

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Summary

// A total of 50 crops are considered in this analysis. It explores the performance of the crops produced by the majority of the small farmers, mainly for domestic consumption. Small farmer's land and labour are the main inputs in the production of these crops, and continuous increases in the productivity of these crops is an important component in improve small farmer's income. //

Increasing productivity is also a means of reducing the cost of production and the price of food. Reductions in the prices of these commodities are equivalent to increases in income for consumers. The benefits of price reductions have a larger impact on lower income consumers who spend a larger proportion of their income on food.

Estimated trends are given for one 20 year period, two 10 year periods, and four 5 year periods. Also included are 5 year averages of the raw data used to calculate the trends, and a ranking of the 50 crops by average total income to farmers.

The overall trend in area, yield, and production is generally positive over the 20 year period. For the period 1969-1978 the overall trend is substantially increasing. But for the period 1979-1988, the overall trend is decreasing, with a substantial decrease for 1984-1988.

Over the period 1979-1983, farmgate prices of domestic crops generally increased at a rate ~~than~~^{below} the consumer price index. For the period 1984-1988, prices have generally increased at a rate substantially greater than the consumer price index.

Introduction

There exists a great potential to increase agricultural production if yields of export and domestic crops can economically be increased by the dissemination of technical and economic information to farmers on the best technologies available in Jamaica. This would result in higher production per unit of land while maintaining present levels of total production for certain crops and releasing land for more crop diversification. Economically feasible higher yields will result in higher farm income and lower unit cost of production of domestic and export crops. This would increase the competitiveness of Jamaica in the international markets and would benefit the low income urban population that spends a high proportion of its income on food.

The following tables show the national average annual growth rates of area, yield, and production for 50 domestic crops. The coefficients give estimated trends for the 20 year period 1969-1988 1/.

Data from MINAG, Data Bank and Evaluation Division and the from The Statistical Institute of Jamaica were used to estimate the growth rates.

The coefficients are estimated using regression analysis. Coefficients that are significant at the 1 percent level are designated by 2 asterisks, and those that are significant at the 5 percent level are designated by 1 asterisk. Those coefficients listed without asterisks are considered to have a probability greater than 5 percent that their actual value is zero.

Area is given in acres, yield in pounds per acre, and total production in short tons. Price coefficients are given for one 10 year period and two 5 year periods. They are calculated from average farmgate prices in constant 1980 dollars. The price coefficients show the trend of price variations from the national consumer price index. The prices indicate how much farmgate prices for each crop varied from the general inflation rate.

The trends given for the longer time periods are significant more often at the 1 and 5 percent levels than for the 5 year time periods. The longer time periods provide a more accurate view of the trends, as more observations tend to make the trend of the data increasingly clear.

1/ The model used to estimate the growth rate coefficients is the following:

$$Y = Ae^{Bt + U}$$

and $\ln Y = B + Bt + U; E(U) = 0$, where B is the estimated average annual growth rate and t is time.

Increases in Total Production

Changes in total production have been substantial for some crops due to increases in area, increases in yield, or both.

Increases in area

The following crops have had substantial increases in production due to increases in area:

Table 1. Increases in production due to increases in area, and ranking of the crop in value terms.

	1969-1988			IMPORTANCE RANK
	AREA	YIELD	PRODUCTION	
COW PEA	2.8*	0	2.8*	#34
PEANUT	6.9**	.4	7.3**	#18
LUCEA YAM	2.2*	.3	2.5**	#10

* significant at 5 % level (significant)

** significant at 1 % level (highly significant)

Looking at the growth rates for cow pea during the 1969-1978 and 1979-1988 periods (Annex, Table I), the coefficients indicate that the increase in production was mainly due to the increase in area during the 1979-1988 period. The area growth coefficient for the period 1979-1988 is negative but not significant.

The price coefficient during the 1979-1988 period (Annex I), was negative (-6.0**) and highly significant, meaning that the price increase was below the increase in the consumer price index, or that the price decreased in real terms.

Five year average annual growth rates for cow pea during the 1969-1978 period (Annex, Table II) are not significant at the 5 % or 1% levels. As was mentioned before, the analysis of short periods of time shows a definite trend less often.

Table III in the Annex presents the five year average annual growth rates for cow pea for the period 1979-1988, and includes the changes in prices for the five year periods. None of the coefficients are significant.

Table IV presents the five year averages in acres, yield in pounds, and total production for cow pea during the 1969-1988 period.

The average growth rate of yield for peanut during the 1969-1988 period is negligible (.5) and not significant, but it shows a significant negative coefficient during the 1979-1988 period (Annex Table 1). Looking at the five year rates of growth, peanut yields show a significant increase during the 1969-1973 period that continues during the 1974-1978 period (Annex, Table II), but the growth rates are negative in the other five year periods (Annex, Table III). The data presented in Table IV show that the average yield for peanut has not increased notably during the twenty year period considered in the analysis.

Lucea Yam, ranked #10 in total income (Annex, Table V), is the only crop among the first ten that has increased in area planted during the period considered in the analysis.

In the following sections information will be presented showing the performance of the other nine main crops.

Increases in yield

The following crops have had substantial increases in production due to increases in yield:

Table 2. Increases in production due to increases in yield, and ranking of the crops in value terms.

	1969-1988			
	AREA	YIELD	PRODUCTION	IMPORTANCE RANK
CABBAGE	.3	4.3**	4.6**	#11
CHO-CHO	-.4	5.0**	4.6*	#35
PINEAPPLE	1.2	2.6**	3.8**	#19
SWEET POTATO	.7	2.4**	3.1*	# 6
SWEET CASSAVA	-.5	3.5**	3.0*	#30
DASHEEN	.3	1.8**	2.1*	#12

* significant at 5 % level

** significant at 1 % level

Increases in yield of cabbage, cho-cho, and sweet cassava took place mainly during the 1969-1978 period. Increases in yield and production of pineapple occurred mainly during the 1979-1988 period. Prices for pineapple show a significant decrease during the same period (Annex, Table I, page 2).

Dasheen yield shows a positive trend during the 20 year period, but not significant growth in yield for the ten year periods 1969/78, 1979/88 (see Table I, page 2).

Tables II and III show the five year average growth coefficients for dasheen with periods of no significant growth in yield except for the 1974-1978 period.

There were no significant changes in farmgate prices for cabbage, sweet potato, sweet cassava and dasheen during the 1979-1988 period.

Increases in area and yield

The following crops have had substantial increases in production due to increases in area and yield.

Table 3. Increases in production due to increases in area and yield, and ranking of the crop in value terms.

	1969-1988			IMPORTANCE RANK
	AREA	YIELD	PRODUCTION	
RED PEA	2.1*	2.2**	4.3**	# 7
CARROT	3.0**	3.0**	6.0*	# 4
CUCUMBER	3.6**	2.2*	5.8**	#23
OKRA	5.5*	1.8**	7.3**	#42
TOMATO	3.8**	2.3**	6.1**	# 2
ESCALLION	5.7**	4.2**	9.9**	#24
ONION	13.0**	1.8*	14.9**	#16
HORSE PLANT.	2.2*	2.2**	4.4**	#13
YELLOW YAM	3.5**	1.2**	4.7**	# 1

* significant at 5 % level

** significant at 1 % level

Yellow yam, ranked first in value terms, shows highly significant increases in production due mainly to increases in area. The increase in yellow yam yield is the smallest of the increases in yield of crops included in Table 3.

Renta yam, St.Vincent yam, sweet yam, and other yam also have highly significant increases in total production due to increases in area planted and yield, but like yellow yam, the increases in production are due mainly to increases in area (Annex, Table I).

Tomato, ranked second, shows decreases in area planted and total production during the 1979-1988 period.

Price coefficients are not significant, with the except of red pea which is negative.

Decreases in Total Production

There are only two crops that have decreased in total production during the period considered in the analysis.

For lettuce and ordinary corn, reduction in total production is due mainly to reductions in area planted.

ANNEX

Table I. AVERAGE ANNUAL GROWTH RATES OF AREA, YIELD, AND PRODUCTION 1969-1988
(AVERAGE ANNUAL PERCENTAGE CHANGE)

CROP	1969-1988			1969-1978			1979-1988 ^a			
	AREA	YIELD	PRODUCTION	AREA	YIELD	PRODUCTION	AREA	YIELD	PRODUCTION	PRICES
Broad Bean	.7	1.6**	2.3*	3.0	-2.6*	.4	-.2	1.4*	1.2	-6.3**
Sugar Bean	.6	1.1*	1.7	6.5*	-1.8	4.7	-1.2	-.2	-1.4	-5.6**
Cow Pea	2.8*	0	2.8*	11.9**	-1.1	10.8**	-3.5	1.2	-2.3	-6.0**
Gungo Pea	-2.5	2.6**	.1	-6.6*	2.3*	-4.3	8.0	.1	8.1	-6.1**
Red Pea	2.1*	2.2**	4.3**	5.8*	.9	6.7	-1.8	.7	-1.1	-5.9**
Peanut	6.9**	.4	7.3**	9.3	1.0	10.3	1.6	-2.4**	-.8	4.0*
Beetroot	-.4	.2	-.2	3.6	-.1	3.5	5.5*	-1.6	3.9*	-.1
Cabbage	.3	4.3**	4.6**	5.6*	5.5**	11.1**	-1.3	.9	-.4	-3.5
Calaloo	-----	-----	-----	-----	-----	-----	-3.2	.4	-2.8*	-2.0
Carrot	3.0**	3.0**	6.0*	1.9	5.0**	6.9*	1.6	.2	1.8	.9
Cauliflower	-----	-----	-----	-----	-----	-----	32.9**	.8	33.7**	8.5*
Celery	3.8	.8	4.6*	9.5	4.6*	14.2	8.2*	-.8	7.4	-----
Cho-Cho	-.4	5.0**	4.6*	11.7**	6.8**	18.5**	-5.4**	.9	-4.5	3.3*
Cucumber	3.6**	2.2*	5.8**	5.2	1.3	6.5*	6.3**	7.6*	13.8*	-1.6
Egg Plant	-2.1	1.7*	-.4	-9.5*	-1.6	-11.0*	10.7	3.5*	14.2	1.5
Iceberg Lettuce	.1	-1.0*	-.9**	1.3	-4.6**	-3.3	11.0**	.2	11.2**	0
Other Lettuce	-6.7**	-.9	-7.6**	3.3	-6.9**	-3.5	-9.4	-1.0	-10.4	-9.2**
Okra	5.5*	1.8**	7.3**	20.3*	.7	21.0*	-1.1	.4	-.7	1.9
Pumpkin	1.1	2.6**	3.7	7.4**	3.2**	10.6**	0	.2	.2	1.1
String Bean	-----	-----	-----	-----	-----	-----	10.4**	1.1	11.5*	1.2
Tomato	3.8**	2.3**	6.1**	11.8	3.7	15.5**	-4.1*	-.6	-4.7*	-1.2
Turnip	-.7	-.2	-.9	4.4	-2.7	-1.7	2.2	-2.2**	0	3.7
Escallion	5.7**	4.2**	9.9**	9.1**	5.4*	14.5**	-2.2	.4	-1.8	3.7
Ginger	1.5	0	1.5	2.3	3.6	5.9	11.4**	-5.1**	6.3	-.3
Onion	13.0**	1.8*	14.9**	49.0**	5.0	54.0**	-.9	1.5	.6	-3.1
Hot Pepper	-----	-----	-----	-----	-----	-----	3.3	4.6*	7.9*	11.2**
Sweet Pepper	-----	-----	-----	-----	-----	-----	14.3**	9.5**	23.8**	6.6*

Table I. AVERAGE ANNUAL GROWTH RATES OF AREA, YIELD, AND PRODUCTION 1969-1988
(AVERAGE ANNUAL PERCENTAGE CHANGE)

CROP	1969-1988			1969-1978			1979-1988			PRICES ^a
	AREA	YIELD	PRODUCTION	AREA	YIELD	PRODUCTION	AREA	YIELD	PRODUCTION	
Thyme	-----	-----	-----	-----	-----	-----	-1.2	2.9*	1.7	-6.4*
Paw Paw	-----	-----	-----	-----	-----	-----	6.8*	1.5**	8.3**	3.4
Pineapple	1.2	2.6**	3.8**	-1.8	1.0	-0.8	8.7**	2.5**	11.1**	-2.3*
Watermelon	-----	-----	-----	-----	-----	-----	-0.3	-0.6	-0.9	7.1*
Ordinary Corn	-2.8	-2.8	-5.6*	-2.9	0	-3.0	4.7	-2.2**	2.6	2.7*
Rice	-----	-----	-----	-----	-----	-----	0	4.9	4.8	-4.3
Horse Plantain	2.2*	2.2**	4.4**	6.2	.3	6.5	.6	1.5**	2.1	-0.3
Other Plantain	.5	1.0**	1.5	7.8	-1.0	6.8	-5.3**	1.4**	-4.0**	-0.9
Irish Potato	-3.0**	1.1	-1.9	1.3	-1.6	-0.3	-4.9	1.7	-3.2	5.4
Sweet Potato	.7	2.4**	3.1*	6.2	3.3*	9.5*	-1.0	-0.3	-1.3	.1
Lucea Yam	2.2*	.3	2.5**	7.2	-0.8	6.4*	1.3	-0.4	.9	-0.3
Negro Yam	-0.5	-0.2	-0.7	3.1	-0.5	2.6	-3.3	0	-3.3	-0.2
Renta Yam	2.6**	1.2**	3.9**	9.6**	.8	10.4**	1.6	.8	2.4*	-1.5
St. Vincent Yam	3.5**	1.0**	4.5**	12.7**	1.9**	14.6**	-1.3	0	-1.3	-1.0
Sweet Yam	6.3**	1.5**	7.8**	15.3**	.8	16.1**	4.6**	.5	5.1**	2.9
Tau Yam	-0.2	.7**	.5	8.4*	.6	9.0*	.7	1.2**	1.9	0
Yellow Yam	3.5**	1.2**	4.7**	6.4**	1.2	7.6**	6.8**	.2	7.0**	-0.3
Other Yam	1.1**	5.0**	6.0**	4.8	8.6**	13.3**	-3.8**	0	-3.8**	-0.7
Bitter Cassava	-4.0	2.2**	-1.7	4.7*	2.8*	7.5*	-9.1**	1.5	-7.7**	5.5**
Sweet Cassava	-0.5	3.5**	3.0*	6.6*	5.1**	11.7*	-4.8**	1.3*	-3.6*	1.7
Coco	-1.2	2.4**	1.2	6.1**	2.5	8.7*	-4.6	1.4**	-3.2*	1.2
Dasheen	.3	1.8**	2.1*	6.9*	3.6	10.5**	.6	-0.1	.5	1.4
Sorrel	-----	-----	-----	-----	-----	-----	3.7	-0.9	2.8	3.3

^a Average farmgate prices in constant 1980 dollars.
* Significant at the 5% level.
** Significant at the 1% level.

Source: Estimates based on data from Data Collection and Statistics Branch, Data Bank and Evaluation Division, Ministry of Agriculture and The Statistical Institute of Jamaica.

Table II. AVERAGE ANNUAL GROWTH RATES OF AREA, YIELD, AND PRODUCTION 1969-1978
(AVERAGE ANNUAL PERCENTAGE CHANGE)

CROP	1969-1973			1974-1978		
	AREA	YIELD	PRODUCTION	AREA	YIELD	PRODUCTION
Broad Bean	-7.0	-1.9	-8.9	18.0**	-1.1	16.9*
Sugar Bean	16.0	-.2	15.8*	-2.3	1.4	-.9
Cow Pea	4.7	-3.2	1.5	19.3	-1.1	18.2
Gungo Pea	1.6	-.7	.9	-4.7	1.0	-3.7
Red Pea	1.9	1.1	3.0	19.3*	4.1	23.4*
Peanut	10.0	5.9*	15.9	22.2	1.1	23.3
Beetroot	3.8	2.4	6.2	7.3	2.2	9.5
Cabbage	3.8	6.8*	10.7	5.7	6.3	12.0
Calaloo	-----	-----	-----	-----	-----	-----
Carrot	8.0	10.4**	18.4**	3.0	7.5	10.4
Cauliflower	-----	-----	-----	-20.1**	1.5	-18.6*
Celery	-8.8	12.0*	3.2	17.4	-3.5*	14.0
Cho-Cho	28.0*	9.1	37.1	7.5	9.9**	17.4**
Cucumber	-7.4	-.9	-8.3	17.2*	-1.9	15.3**
Eggplant	-16.4	5.0	-11.5	-13.8	-2.1	-15.8
IcebergLettuce	34.3	.6	34.9	-19.6	-7.5	-27.1
Other Lettuce	15.0**	-4.2	10.7	-4.9	2.8	-2.1
Okra	56.5*	12.3*	68.9*	4.7	-4.4	.3
Pumpkin	13.2	2.4	15.6	7.0	4.2*	11.1
String Bean	24.1	1.9	26.0	-----	-----	-----
Tomato	18.3*	-3.4**	14.9	14.9**	16.2*	31.1**
Turnip	20.5*	-5.0*	15.5*	2.4	7.3	9.7
Escallion	9.7	5.5	15.1	17.9*	16.6*	34.5*
Ginger	10.0*	5.0	15.0*	-5.7	-6.1	-11.8
Onion	26.5	8.2	34.7	39.7**	3.0	42.7**
Hot Pepper	-----	-----	-----	12.3*	-4.3	8.0

Table II. AVERAGE ANNUAL GROWTH RATES OF AREA, YIELD, AND PRODUCTION 1969-1978
(AVERAGE ANNUAL PERCENTAGE CHANGE)

CROP	1969-1973			1974-1978		
	AREA	YIELD	PRODUCTION	AREA	YIELD	PRODUCTION
Sweet Pepper	-----	-----	-----	12.1	-.4	11.7
Thyme	-----	-----	-----	4.6	-14.5	-9.9
Paw Paw	-----	-----	-----	8.8	-1.3	7.5
Pineapple	21.3	-2.4	19.0	-10.2	5.5	-4.7
Ordinary Corn	3.1	-3.2	0	-19.8	-24.0	-43.8
Rice	-----	-----	-----	-----	-----	-----
Horse Plantain	29.2**	-2.9	26.3**	-1.7	5.5	3.8
Other Plantain	28.3	0	28.3	7.9	2.6	10.5
Irish Potato	14.5	-7.6	7.0	-10.2	.2	-9.9
Sweet Potato	7.0	-1.4	5.6	16.1	9.9*	26.0
Lucea Yam	25.7	-10.3**	15.4	.5	3.0**	3.5
Negro Yam	12.5*	.6	13.1	3.9	-3.9	0
Renta Yam	23.9**	.4	24.3**	.7	4.6	5.4*
St Vincent Yam	31.9*	1.0**	33.6*	4.9*	1.4	6.3**
Sweet Yam	27.4*	.7	28.1*	11.3	1.9	13.2
Tau Yam	27.9	1.5	29.4	5.7	2.4	8.1
Yellow Yam	14.4*	1.0	15.4*	3.2	3.0	6.2
Other Yam	13.5	6.6	20.1*	13.9	10.0**	23.9
Bitter Cassava	3.6	.4	4.0	11.0**	8.5*	19.5**
Sweet Cassava	5.6	6.1	11.7	23.2**	8.8**	32.0**
Coco	13.0*	8.2	21.2	6.1	3.7	9.8
Dasheen	17.9	0	17.9	3.4	3.3*	6.7
Sorrel	-----	-----	-----	-----	-----	-----

a
Average farmgate prices in
constant 1980 dollars.
*Significant at the 5% level.
**Significant at the 1% level.

SOURCE: Estimates based on data from Data
Collection and Statistics Branch, Data Bank
and Evaluation Division, Ministry of
Agriculture and The Statistical Institute
of Jamaica.

Table III. AVERAGE ANNUAL GROWTH RATES OF AREA, YIELD, AND PRODUCTION 1979-1988
(AVERAGE ANNUAL PERCENTAGE CHANGE)

CROP	1979-1983 ^a				1984-1988 ^a			
	AREA	YIELD	PRODUCTION	PRICES	AREA	YIELD	PRODUCTION	PRICES
Broad Bean	-5.3	3.1	-2.2	-.4	-11.0*	-.8	-11.9**	-1.7
Sugar Bean	-.4	3.4	3.0	-5.6**	-18.0**	-3.2	-21.2	-1.7
Cov Pea	-3.7	.5	-3.2	-2.7	-9.1	2.3	-6.8	-2.7
Gungo Pea	20.1	.5	20.5	-6.1	-1.8	.9	-1.0	-3.1
Red Pea	-7.2	1.1	-6.2	-5.8	-3.9	-2.8	-6.7	-5.8
Peanut	1.9	-1.1	.8	12.3*	-7.2	-1.9	-9.1	2.2
Beetroot	-3.7	.5	-3.2	3.5	7.4	-5.5*	1.9	14.2*
Cabbage	2.8	2.9*	5.7**	-21.4**	-6.6**	-.8	-7.4**	16.4**
Calaloo	-4.3	-.8	-5.1	-5.3	-7.2**	.4	-6.8**	7.6**
Carrot	9.7**	.4	10.1*	-1.2	-5.2	-1.5	-6.6	7.6**
Cauliflower	21.6	4.1	25.7	19.4	2.9	-2.4	.5	12.4*
Celery	.4	1.3	1.7	-----	6.9	-1.6	5.2	-.6
Cho-Cho	-7.8	-2.9	-10.7	4.0	-11.7**	-1.9**	-13.6**	10.7
Cucumber	1.8	15.2	17.0	-5.5*	4.8	2.0	6.8	13.2*
Eggplant	3.8	4.5	8.4	-14.3*	9.1	-2.2	6.9	19.5*
IcebergLettuce	18.0	2.6	20.6	-15.9*	2.9	-1.3	1.6	15.5
Other Lettuce	-20.9**	-13.5*	-34.4	-15.9**	-19.9	3.3	-16.7	.4
Okra	3.2**	8.5*	11.6**	-7.7	-10.9	-4.2	-15.2*	16.2
Pumpkin	5.5	.7	6.2	-.2	-10.3*	-1.0	-11.2**	15.0*
String Bean	14.7**	0	14.7*	-1.3	-3.9	1.8	1.1	7.1
Tomato	-3.8	-1.0	-4.7	-7.1	-12.3**	-3.1*	-15.4**	12.8
Turnip	6.6	-1.9	4.7	-3.4	-5.0	-1.5	-6.6	14.8*
Escallion	-.8	-2.0	-2.8	-3.1	-7.9	-1.7	-9.6	36.7*
Ginger	-2.4	-3.2	-5.6	-10.8**	11.5	-1.0	10.5	-1.9
Onion	-15.0	3.7	-11.3	-2.6	-14.0	-3.9	-17.9	12.3
Hot Pepper	6.7	-.5	6.2	25.2**	-12.6*	4.7	-8.0*	7.8

Table III. AVERAGE ANNUAL GROWTH RATES OF AREA, YIELD, AND PRODUCTION 1979-1988
(AVERAGE ANNUAL PERCENTAGE CHANGE)

CROP	1979-1983 ^a				1984-1988 ^a			
	AREA	YIELD	PRODUCTION	PRICES	AREA	YIELD	PRODUCTION	PRICES
Sweet Pepper	10.5	6.3	16.8	13.3	.8	2.3	3.1	9.5
Thyme	-.3	2.4	2.2*	-14.3**	.7	-3.6	-2.9	9.7**
Paw Paw	-3.7	2.1	-1.6	-2.2	9.8*	1.2	11.0**	21.9**
Pineapple	23.4*	3.2	26.6*	-2.6	.5	4.6*	5.2	2.1
Ordinary Corn	15.5**	.9	16.4**	.4	-9.5	-4.7	-14.2	26.4**
Rice	.2	16.1*	16.3	-----	-29.9	.9	-29.0**	-4.3
Horse Plantain	-2.0	-.9	-2.9	.5	-2.2*	.8	-1.4	4.3
Other Plantain	-2.3	-.9	-3.2	1.4	-11.0*	1.1	-9.9*	6.1
Irish Potato	-11.6	2.8	-8.7	3.2	-1.9	4.5	2.6	17.7*
Sweet Potato	-1.4	-2.5*	-4.0	2.1	-13.7**	-.2	-13.9**	12.5**
Lucea Yam	-4.7	-6.1	-10.8*	1.5	0	0	0	13.5
Negro Yam	-11.9**	-.7	-12.6**	-3.4	-1.7	-.4	-2.0	7.9
Renta Yam	-2.6	-.9	-3.5	5.5	1.4	3.8*	5.2*	-1.2
St Vincent Yam	-4.6	.1	-4.5	1.0	-6.1	0	-6.2	1.0
Sweet Yam	1.9	.3	2.2	2.7	0	1.9	2.0	12.9**
Tau Yam	-12.7	1.0	-11.7	-.6	2.6	-.3	2.3	7.8*
Yellow Yam	-1.1	-.3	-1.4	1.7	7.5**	-.4	7.2**	10.5
Other Yam	-5.5	-1.7	-7.2	-3.6	-3.3	2.3	-.9	-3.6
Bitter Cassava	-10.3**	-4.4	-14.7**	-7.0	-8.1*	1.6	-6.6	-7.0
Sweet Cassava	-9.8*	-.6	-10.3*	1.6	-11.5**	2.5	-9.0**	5.0*
Coco	-10.0*	1.7*	-8.3	-.3	-9.9*	.5	-9.4*	4.8
Dasheen	-5.8*	-1.8	-7.6	-2.3	-1.5	-.7	-2.2	8.2*
Sorrel	6.1	-1.9**	4.2	5.5	-13.4	.9	-12.5	0

^a
Average farragate prices in
constant 1980 dollars.
*Significant at the 5% level.
**Significant at the 1% level.

Source: Estimates based on data from Data Collection and Statistics Branch, Data Bank and Evaluation Division, Ministry of Agriculture and The Statistical Institute of Jamaica.

Table IV. AREA, YIELD, AND TOTAL PRODUCTION
FIVE YEAR AVERAGES 1969-1988

CROP	AVERAGE AREA UNDER PRODUCTION (ACRES)				AVERAGE YIELD (LBS./ACRE)				AVERAGE TOTAL PRODUCTION (SHORT TONS)			
	69-73	74-78	79-83	84-88	69-73	74-78	79-83	84-88	69-73	74-78	79-83	84-88
Broad Bean	581	651	589	662	626	540	708	763	181	175	207	253
Sugar Bean	537	718	589	650	646	570	728	717	173	204	214	235
Cow Pea	1289	2511	2335	2110	802	774	756	798	512	942	877	847
Gungo Pea	8133	5471	4970	5600	570	663	836	835	2334	1833	2063	2341
Red Pea	7990	10284	11160	10816	608	618	776	819	2437	3256	4312	4436
Peanut	2101	3296	4803	5619	934	949	1076	946	985	1620	2578	2686
Beetroot	247	291	184	258	6416	6146	6820	6396	797	907	625	821
Cabbage	2918	3877	3266	3098	5867	7620	10432	10868	6500	14921	17053	16847
Calaloo	-----	-----	2431	2154	-----	-----	10516	10838	-----	-----	12797	11670
Carrot	2412	2495	3333	3553	6007	7224	8828	9017	7368	9113	14737	16028
Cauliflower	137	24	15	85	4028	5240	5928	6182	94	64	48	264
Celery	19	30	20	32	4763	5956	5724	5393	42	89	58	88
Cho-Cho	1277	1925	1432	1176	4228	5638	7836	8604	2810	5510	5696	5082
Cucumber	1154	1511	1433	2081	7590	8427	7988	11121	4292	6289	5789	11700
Eggplant	50	34	22	54	4594	4002	4628	5707	119	67	50	162
Iceberg Lettuce	437	415	247	409	12393	9773	10288	10277	2731	2052	1287	2103
Other Lettuce	318	364	182	164	3796	2443	3084	3086	594	440	296	254
Okra	423	753	744	749	3122	3049	3864	3809	720	1129	1445	1439
Pumpkin	4358	5950	5054	5310	8046	9426	11456	11668	17661	28247	28982	31006
String Bean	341	-----	398	713	3074	-----	4348	4623	528	-----	823	1377
Tomato	2145	3525	4204	3698	7772	9250	10752	10674	8252	17170	22629	19889
Turnip	561	615	435	496	6609	5531	6684	5953	1818	1660	1450	1484
Escallion	720	1074	1714	1608	2897	3573	4916	5118	1050	2055	4271	4127
Ginger	421	480	308	626	2561	3252	3424	2526	544	791	529	794
Onion	74	1050	559	662	6559	7999	7724	8569	256	4264	2125	2898
Hot Pepper	-----	1094	1073	1407	-----	2117	2684	3490	-----	1144	1461	2419
Sweet Pepper	-----	3452	5068	8921	-----	3903	5068	8921	-----	390	1110	4616

Table IV. AREA, YIELD, AND TOTAL PRODUCTION
FIVE YEAR AVERAGES 1969-1988

CROP	AVERAGE AREA UNDER PRODUCTION (ACRES)				AVERAGE YIELD (LBS./ACRE)				AVERAGE TOTAL PRODUCTION (SHORT TONS)			
	69-73	74-78	79-83	84-88	69-73	74-78	79-83	84-88	69-73	74-78	79-83	84-88
Thyme	-----	300	392	363	-----	1341	1080	1324	-----	200	211	241
Paw Paw	-----	511	327	488	-----	9160	10080	10860	-----	2328	1654	2653
Pineapple	1231	955	958	1319	9013	9397	11620	12862	5459	4451	5667	8487
Watermelon	-----	809	583	610	-----	9222	13320	12576	-----	4017	3908	3850
Ordinary Corn	8854	9865	5160	6664	1516	2164	1136	1019	7170	8511	2938	3416
Rice	-----	-----	1869	2587	-----	-----	2388	2863	-----	-----	2272	3542
Horse Plantain	3531	3964	4121	4413	8055	8140	9976	11008	14028	16326	20561	24287
Other Plantain	1349	1541	1569	1243	10892	9991	11348	12408	7385	7811	8911	7694
Irish Potato	3000	3150	2427	1948	8202	7848	8988	9487	12221	12258	10943	9235
Sweet Potato	5321	7006	5787	6193	6926	8132	9760	9791	18440	29948	28271	30332
Lucea Yam	2204	2664	2568	2904	10706	10653	11244	11417	11214	14198	14481	16599
Negro Yam	4498	4855	4579	4064	11620	11627	11304	11407	26148	28559	25931	23211
Renta Yam	3484	5111	4566	5125	9921	10072	11284	11633	17374	25675	25762	29845
St Vincent Yam	1561	2428	2442	2445	8604	9513	10028	10004	6810	11554	12248	12235
Sweet Yam	974	1854	1846	2460	7304	7526	8833	8969	3580	7015	8150	11061
Tau Yam	1522	1850	1282	1418	11506	11595	11780	12699	8756	10725	7550	9004
Yellow Yam	7315	9480	8639	12856	9897	10392	11488	11750	36322	49324	49622	75468
Other Yam	527	601	679	564	6126	9284	12464	12421	1619	2888	4238	3488
Bitter Cassava	3175	3833	2772	1754	8184	9223	10276	11538	13063	17992	14366	10097
Sweet Cassava	1857	2399	2028	1750	6028	7468	9168	9816	5691	9367	9299	8554
Coco	3437	4380	3497	3010	6833	7154	8544	9180	12069	15845	14802	13799
Dasheen	2851	3608	2742	3018	9309	11376	12176	12302	13129	20541	16717	18582
Sorrel	-----	-----	1060	1463	-----	-----	1048	1000	-----	-----	554	726

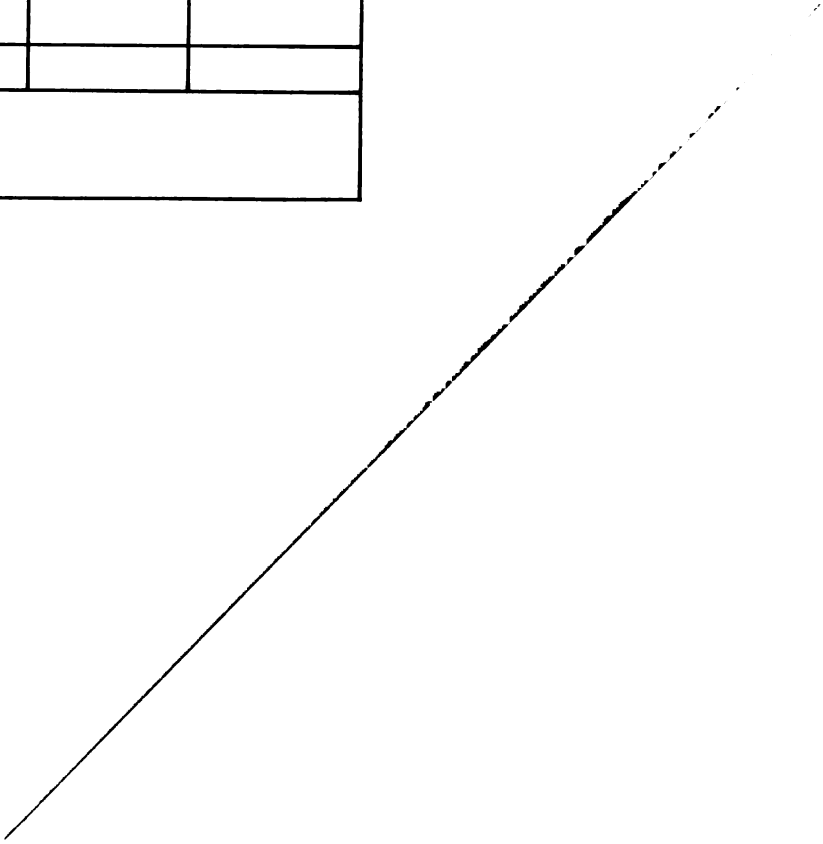
Source: Estimates based on data from Data Collection and Statistics Branch, Data Bank and Evaluation Division, Ministry of Agriculture and The Statistical Institute of Jamaica.

TABLE 5. RANKING OF CROPS BY TOTAL INCOME
(Area X Yield X Farmgate Price)

<u>AVERAGE 1980-83</u>	<u>AVERAGE 1984-88</u>
1. Yellow Yam	Yellow Yam
2. Tomato	Tomato
3. Red Pea	Pumpkin
4. Negro Yam	Carrot
5. Pumpkin	Negro Yam
6. Carrot	Sweet Potato
7. Sweet Potato	Red Pea
8. Renta Yam	Renta Yam
9. Cabbage	Irish Potato
10. Lucea Yam	Lucea Yam
11. Irish Potato	Cabbage
12. Dasheen	Dasheen
13. Horse Plantain	Horse Plantain
14. Coco	Sweet Yam
15. Calaloo	Coco
16. St. Vincent Yam	Onion
17. Onion	St. Vincent Yam
18. Gungo Pea	Peanut
19. Sweet Yam	Pineapple
20. Peanut	Calaloo
21. Pineapple	Gungo Pea
22. Escallion	Tau Yam
23. Tau Yam	Cucumber
24. Other Plantain	Escallion
25. Cucumber	Sweet Pepper
26. Cow Pea	Hot Pepper
27. Bitter Cassava	Bitter Cassava
28. Sweet Cassava	Watermelon
29. Other Yam	Ginger
30. Watermelon	Sweet Cassava
31. Cho-Cho	Other Plantain
32. Ordinary Corn	Iceberg Lettuce
33. Hot Pepper	Ordinary Corn
34. Ginger	Cow Pea
35. Iceberg Lettuce	Cho-Cho
36. Sweet Pepper	Other Yam
37. String Bean	String Bean
38. Thyme	Paw Paw
39. Turnip	Sorrel
40. Hybrid Corn	Turnip
41. Sorrel	Thyme
42. Okra	Okra
43. Sugar Bean	Cauliflower
44. Broad Bean	Beet Root
45. Paw Paw	Broad Bean
46. Beet Root	Sugar Bean
47. Other Lettuce	Hybrid Corn
48. Cauliflower	Other Lettuce
49. Celery	Celery
50. Eggplant	Eggplant

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