ECONOMIC POLICIES IN SUPPORT OF SELECTIVE STRATEGIES

DUANE E. ERICKSON
(Professor, University of Illinois, USA)

AGRICULTURAL SECTOR

The economic policies of a country and nation are important in directing the total economy. Similarly, the agricultural policies have important effects upon the agricultural sectors. Policies related to the sale of agricultural commodities will have an impact on the development of agriculture in the Caribbean.

The purpose of this paper is to stress the importance of obtaining sound economic information for making policy decisions. Cost of production surveys have been conducted with farm operators in various geographical locations in the world to provide a sound base for conducting price, production and income support programmes. The farm surveys, farm record data summaries, and detailed cost studies are important ingredients that can be used to make judgements on policy recommendations on the net income per farm.

During 1986 to 1988, travels in the Windward and Leeward islands in the Caribbean Agricultural Extension Project suggested that information feedback systems on whole farm efficiency and income levels were developing. The Caribbean Agricultural Extension Project supported efforts in obtaining the demonstration districts to encourage farmers to maintain enterprise records, develop whole farm planning materials, and maintain farm record books. The focus in this paper is on reporting the information obtained from farmers in four Windward Islands and four Leeward Islands in the 1987-1988 period. These data are restricted in terms of implications that can be drawn. However, they are useful to examine since improvements can be made to obtain needed data. Results from the tables suggest planning the process of obtaining data can be improved for whole farm planning use, making extension recommendations, and providing sound data for policy-makers to make judgments.

Long run economic development policies must be based upon sound information, political situation knowledge, and reasonable expectations regarding results based upon performance of the farming systems considered.

IMPORTANCE OF SOUND ECONOMIC INFORMATION FOR POLICY CHOICES

There are important ingredient of making sound decisions on foreign and domestic investments in the agricultural sector of the Caribbean appear according to the Caribbean Basin Initiative.[1] These apply generally in various parts of the world: (1) infrastructure, (2) trained and skilled labour force, (3) credit availability, (4) export and investment promotion capacity, and (5) a favourable investment climate that includes a stable government, reasonable import and export requirements, ability to repatriate profits, access to foreign exchange and rationalized exchange rates and investment incentives such as free trade zones and tax holidays.

The need for favourable evaluation of sound and viable investment opportunities requires reliable information on a number of areas. The questions that need to be answered are:

1. What is the infrastructure in terms of roads, storage and loading facilities?
2. What are the characteristics of the labour force related to age, education and training?
3. Is credit available on a reliable and trustworthy basis?
4. What products are being imported and exported?
5. What are the rates of return currently obtained from the agriculture, tourist, commercial and governmental sectors?
6. What are the long term potentials for agriculture, tourism, commercial and government sectors?

Question 5 and 6 have particular relevance for agriculture. Determination of the rate of return in agriculture requires sound economic information. Data from cost of production surveys by commodity and the whole farm are essential to the development of the rates of return expected for the various geographical areas of the Caribbean. Use of farm record information by types of farming or farming systems can also provide analysis information to determine rates of return on a whole farm basis. Detailed cost studies of the various enterprises can also supplement information from the cost of production surveys and farm record summaries by farming systems. Data obtained through projects like the Caribbean Agricultural Extension Project Sondeo (Rapid Reconnaissance Survey) and follow-up enterprise study on Caribbean farms and whole farm management education programmes may also provide useful information through grouping of farmer's data. Farm record data from the farmers summarized by farming system may also be useful in maintaining contact with changes occurring over a period of time. Farmer use of the data and later summarization for other use may provide an ongoing procedure that is a feedback procedure. A discussion later in the presentation will focus on this question.

The initial focus of this paper has been to construct a logical sequence of suggested approaches to development of farm level economic information for use in decision making at farmer or farm level or at country or aggregate level. Farm surveys have been used throughout the world to secure agricultural input and output information. A target sample is identified through a problem identification stage. A commodity group, a geographical area or a farming system area may focus on a particular sample. Specific questionnaires are devised and field tested to make needed improvements in questions and data recording. Specific statistical techniques of sampling are studied and final decisions are made regarding the sample and sample size. The reliability of sample results required may determine the number in the sample and procedure for obtaining information. Also, statistical testing techniques are discussed and decisions made on the appropriate techniques to use.

The data are summarised, statistical tests are run and implications of the research work are drawn. Results are printed for use by researchers, government staff and extension workers. Results are specific to the particular problem being investigated.

Farm record summaries[2] are another approach to obtaining data on specific farm operations. A farm record book that can be used by farmers must be devised to obtain information for farmers. Farm decision making can be improved by more detailed information secured from all cost and return items. Information obtained is enhanced by obtaining physical inventories and financial information related to these inventories.

A secondary use of farm record information is to summarize a number of similar farming systems and size. The need for samples being summarized larger than 30 improves economic implications that can be made with the data. Individual enterprise analysis can also be completed if information is recorded with both land, labour and capital components. Regular annual summary of the farm record area samples allows feedback on the economic performance. *Controlling* management functions are enhanced by sound input information and the resulting output. Data from farm records must be continuous to be effective as a feedback mechanism reflecting effects of technology, management techniques and general agricultural policy.The subsorts of data by type of farming or farming systems can be useful in maintaining the quality of information obtained over time. The approach does require considerable resources over a period of years. Farmer supported record groups is one way to operate, manage, finance and conduct educational programmes that can accompany these efforts. Competent, well trained and well paid staff are essential for long range continuous development.

The third approach to obtain data for policy making decisions is detailed cost studies. Dr. Carlisle Pemberton has conducted studies in Trinidad in this category. CARDI has been involved in various types of studies in the Windward and Leeward Islands. Specific enterprises are selected to obtain input/output data. Caribbean examples are bananas, sweet potatoes on St. Vincent, sweet peppers or onions or lettuce on St. Kitts. A group of producers are contacted to secure detailed information on the land, labour and capital components of land preparation, planting, preharvest, harvesting and marketing activities for a preselected time period. Homogeneous groups of these producers' data can be summarized, statistical analysis completed and data published for use by farmer participants, agricultural officers and public institution use. The reliability of the data will be determined by quality control devices at the farm

collection level, data summary level. High quality data will improve information provided to policy makers. Actual policy decisions may be influenced by factors outside of the realm of economic choice.

A fourth approach to data that may be considered has been used in four Windward Islands and four Leeward Islands and was conducted in 1986 through 1989 in the Caribbean Agricultural Extension Project.[3] CAEP[4] will be used to refer to this project for the remainder of this presentation.

The following is a description of the CAEP 1987-1988 activities in the Demonstration Districts on the four Windward Islands of Dominica, Grenada, St. Lucia and St. Vincent. Leeward Islands included are Antigua, Montserrat, Nevis and St. Kitts.

EXTENSION EDUCATIONAL PROGRAMMES IN WINDWARDS AND LEEWARDS

Data from the farms were obtained as a part of the farm management whole farm planning activities in 1987-88. Data regarding production techniques, inputs, sales of farm products, expenses, and financial position were gathered from farmers in Demonstration Districts on four Windward Islands and four Leeward Islands. Sondeo's or needs assessment studies were conducted on each island during the 1986 to 1987 period. Sondeo reports on each one of the islands identified farming systems. Also, problems farmers identified in the Sondeo process are included in the report. The farm management effort included enterprises studied in 1986-87 and whole farm planning educational programmes in 1987-88. The results reported on the Windward and Leeward Islands are for the 1987-88 period and reflect a small sample of demonstration district farms.

System of Farming and Types of Farms

The Windward Island farms produce bananas, vegetables, root crops, nutmeg, poultry, cattle and hogs. Twenty-one of the 36 sample farms produce bananas in Grenada. Fourteen of the 30 St. Lucian sample farmers and I out of 12 sample farms in St. Vincent produced bananas as a major enterprise. The Grenadian sample included 5 out of 36 farms with vegetables as a major enterprise. St. Vincent has 10 out of 12 farms producing vegetables and sweet potatoes. Small amounts of tannia, dasheen and tree crops were also providing produce for consumption or sale. The specifics of the Dominica sample of farms represents the northwest area of Dominica. Enterprises on the 30 farms included bananas, coconut, vegetables, citrus, pigs, and goats. The Caribbean Agricultural Extension Project Demonstration District farmers participation are the source of the information on income, expenses and net worth.

1987 WINDWARD ISLAND GROUP RESULTS

Grenada

The sample of farms in Grenada had 36 farms producing vegetables, bananas, coconut, nutmeg, goats, pigs and cattle. The overall average crop sales were $15,045 and average livestock sales were $124. Other cash income averaged $5,346 while changes in inventory averaged $1,197. The average total income for the 36 farms is $21,713. The average total operating expenses is $7,123 and for the 36 farms, the average farm and family earnings is $14,589. The net worth averaged $75,326 for the 36 farms.

Dominica

Dominica had farms with bananas, coconut, vegetables, grapefruit, poultry and goat enterprises on the northwest part of the island. Dominica has a total of 30 farms with averages of $14,332 in crop sales and $885 in livestock sales. Other cash income for the farms averaged $3,817 while changes in inventory averaged $145. The total income, for the 30 farms, averaged $19,180 per farm. Total operating expenses averaged $7,164 and family earnings averaged $12,016. The average net worth was $119,566 in 1987.

St. Lucia

St. Lucia had 28 farms producing vegetables, bananas and livestock. The average crop sales for the 28 farms is $5,225 and livestock sales averaged $8,321. Other cash income on the farms averaged $3,973 while changes in inventory averaged $805. The total income for the 28 farms averaged $18,323. Total operating expenses averaged $7,426. For the farms, farm and family earnings averaged $10,897. The net worth averaged $81,157.

St. Vincent

St. Vincent had 12 farms producing root crops, vegetables, bananas and livestock. Total crop sales for the 12 farms averaged $3,385 and livestock sales averaged $833. Other cash income averaged on $4,088 and the changes in inventory averaged $383. Total income for the farms averaged $8,689. The net worth for the farms

averaged $45,992 in 1987. Many of the farms were part-time farm operations.

Leeward Group - Types of Farms

The Leeward Islands rely mainly on vegetable crop farming. Montserrat, St. Kitts and Antigua are greatly dependent on vegetable farming. Montserrat has vegetable farms on all 3 farms. St. Kitts has vegetables on 14 of 15 farms and Antigua has vegetables on 27 of 28 farms. Nevis has a few vegetable farms. Vegetables were not the only type of farming or system of farming found on these islands. Banana enterprises can be found on 2 to 15 St. Kitts farms and on one of the farms on Antigua. Livestock is a major enterprise on the islands of St. Kitts, Montserrat, Nevis and Antigua. Thirteen (13) Nevis farmers grew root crops.

LEEWARD ISLAND GROUP RESULTS

St. Kitts

St. Kitts had 15 farms producing vegetables, bananas and livestock. The average crop sales for St. Kitts were $16,687 and the average livestock sales were $4,410. The other cash income consists of $4,853 and the change in inventory averaged $-61. St. Kitts average total income for their 15 farms was $21,773. The average total operating expenses for these farms are $5,342, St. Kitts average farm and family earnings were $16,431. The net worth averaged $24,841 for the year end of 1987. Most of the land is leased from the government. A 35 year lease on land was being started and offered in 1987 to farmers.

Montserrat

Montserrat is represented by three farms with mainly vegetables and livestock. The average crop sales for Montserrat were $5,093 and the average livestock sales were $1,767. Montserrat other cash income averaged $867 and the changing inventory averaged $-867. The farmers in Montserrat average income consists of $6,859 and the average farm and family earnings is $1,575. The net worth averaged $56,398 for the 1987 year.

Nevis

Nevis is represented by 13 farms which mainly consists of root crops and livestock. The average crop sales for Nevis were $2,953 and the average livestock sales were $630. Nevis' other cash income averaged $6,615 and the change in inventory averaged $-626. The average income per farm for Nevis was $9,673 and the average total operating expenses was $5,184. The average farm and family earnings for Nevis consist of $7,706. The net worth average $227,827 at the end of 1987.

Antigua

Antigua had 28 farms producing vegetables, bananas and livestock. Total average crop sales per farm for the 28 farms is $19,070 and the livestock sales averaged $3,503. Other cash income on the Antigua farms averaged $5,500 and the change in inventory averaged $234. The total income for Antigua's 28 farms averaged $28,307 and the total operating expense averaged $5,184. Antigua farm and family earning averaged $23,123. The net worth averaged $107,346 for 1987.

1987 WHOLE FARM PLANNING SUMMARY OF THE WINDWARD ISLANDS

Results for 106 farms involved in CAEP whole farm planning farm management educational activities in 1987 and 1988 in the northeast-east area of Dominica, the eastern extension district of Grenada, northeastern part of St. Lucia and the Mesopotamia area of St. Vincent.

Grouping these farms' data reveals average crop sales in EC$ of $10,929 and $2,585 in livestock sales. Non-farm and other cash income was $4,408. A positive change in inventory of $704 was shown for 1987 resulting in a group average total income of $18,626. Operating cost per farm of $6,796 is deducted from total income to calculate a return to capital, labour and management of $11,830 per farm, or about US$4,401 per farm at a 2.6882 exchange rate.

A review of the financial statement shows current assets of $5,620 intermediate assets of $6,349, fixed assets of $77,255 and a total assets of $89,225 per farm. This amount includes the value of the house that may or may not be located on the land. Current liabilities averaged $723, $413 in intermediate liabilities and an average of $2,022 in fixed liabilities. Total liabilities of $3,158 are subtracted from total assets of $89,225 to compute a net worth average for these 106 farms of $86,067.

The number of criteria could be applied to the financial statement data. Liquidity, solvency, profitability and efficiency are typical measures that can be applied to data on financial statements.

A solvency ratio that might be applied is the percent debt or debt asset ratio. Liabilities divided by assets times 100 is the formula.

Liabilities - 3158 - 0354
Assets - 89225
Multiply .0354 times 100 - 3.54

Lenders usually require 50 per cent debt or less. At 3.54 per cent debt, these farms appear to be financially sound. The current ratio equals current assets divided by current liabilities. Current assets for the 106 farms are $5,620. The calculation of current assets divided by $723 in current liabilities, the current ratio is 7.77. To avoid financial difficulties, a current ratio of 1.0 or above is required and 1.5 to 2.0 is preferred by lenders. The current ratio average of Grenada's 36 farmers is 2.47 showing the greatest amount of borrowed money in the four islands compared. The $9,733 borrowed capital showed a $14,589 average farm and family earnings. This is the highest average earnings of the four Windward Islands.

The 1987 Whole Farm Planning Summary of the CAEP Data for Four Leeward Islands

Fifty farms are included in the summary. Average crop sales per farm of $14,202, livestock sales $1966 and a minimum $64 change in inventory produces a $21,450 total income. Operating costs were $4,521 per farm computes an average farm and family earnings of $16,929. The heavy vegetable sales on the Antigua farms accounts for their leading position in farm and family earnings on 28 farms.

Total assets per farm of $113,742 was influenced by one large and more established farm in Nevis. Liabilities were low with a per cent debt of 3416+113,742-.03003x100-3.043 where 50 per cent of .5 is required. A current ratio of 4397 - 3264 equals 1.347 which is above an average financial requirement but below the 1.5 to 2 ratio desired by lenders. Very little capital is borrowed on these farms. However, current liabilities are greater on all Leeward farms sampled compared to the Windward farmers in the CAEP Demonstration Districts.

Interestingly, agricultural credit availability questions begin to arise as you study the data. A caution needs to be made that statements can only be made to the farms in the CAEP group data. Sampling of the farms may or may not be representative of all farms in the CAEP Demonstration Districts. These data do help in the process of evaluating the sources of income and expenses. Also some preliminary analysis can be made to evaluate what might happen if various agricultural policies are implemented. The author had a chance to help obtain the data via the CAEP extension officers. The extension officers spent time talking to their farmers about the results.[5] Additional studies will be needed to accurately predict more detailed economic changes of increased earnings and changes in net worth for the population as a whole.

SUMMARY

The purpose of this paper has been to encourage development of sound economic data for farmer use, extension worker use, research use and policy maker use. Choices of the particular data collection process depends upon the institutions obtaining data. Cost of production studies through survey methods can be designed through sampling techniques and questioning procedures to obtain sets of economic input and output by commodity, farming system or type of farming. Resources required for this approach are capital, research and sampling expertise and data processing ability.

Farm record summary approaches require a dedication of field staff, supervisory staff and funds to complete data processing, farmer delivery of data and analysis of data. A long term commitment of funds is needed to maintain staff, a data bank and ability to publish results. The long term results include continuous contact with farmer data by staff. Feedback and continuous contact provides an excellent opportunity to be aware of the current income and expenses of particular sectors - of the agricultural segment of an economy.

Detailed cost studies provide an excellent opportunity to develop data from existing agricultural enterprises. A particular problem associated with an enterprise can be delineated. A sampling technique can be devised based on sound statistical principles to collect labour, inputs, operating capital inputs and management levels for the enterprise. Recording and collection of data can proceed within the framework of the budget allocation for the detailed cost study. Both physical and financial data can be obtained to insure shelf life of data summarized. Data must be published soon after being collected. Distribution to the users is essential for maximum use.

There are a number of determinants of public agricultural and food policy. These determinants are:

1. Present policy
2. Current situation
3. Knowledge of participants in policy making
4. Values and objectives of participants

5. Relative influence of the participants.

Information related to the farm level inputs and resulting output needs to be of high quality. Sound information on the effects of present agricultural policy and the current agricultural situation should be available from unbiased sources. "*Seeking the truth*" can be improved when economic information is available from reliable sources. The challenge of policy making is to merge the values and objectives of participants in the policy making process to obtain a workable set of public policy decisions that provide equity and efficiency for the society involved. The final product in agricultural policy may be one based on the influence of the various participants.

Notes:

[1]*"Caribbean Basin Initiative, Impact on Selected Countries", United States General Accounting Office, Report to the Chairman, Subcommittee on Western Hemisphere and Peace Corps Affairs, Committee on Foreign Relations, US Senate GAO INSLAP-88-77, July 1988, p.35-36.*

[2]*Lattz, D.H.; Cagley, C.E.; Kesler, R.P. and Chow, Irene: 1988 Summary of Illinois Farm Business Records. 64th Annual Commercial Farms; Production/Costs/Income/ Investments Circular 1293, University of Illinois College of Agriculture Cooperative Extension Service Circular 1293, 40 pp.*

[3]*Alkin, Marvin C.; Andrews, Mary; Manhertz, Huntley; Lewis, Gloria Robinson; and West, Jerry: Evaluation Report of Caribbean Agricultural Extension Project. Prepared for Caribbean Agricultural Extension Project, Regional Agricultural Extension Coordinating Committee, The Agency for International Development, Barbados, March, 1989, pp.1-3.*

[4]*Henderson, Thomas H.; Patton, Michael Quinn: In: Rural Development in the Caribbean "Agricultural Extension in Rural Transformation"; The CAEP Model, P.I. Gomes, Editor. London: C. Hurst & Co. New York: St. Martin's Press, 1985.*

[5]*Pemberton, Carlisle and Erickson, Duane, E.: Diversification at the Farm Level Through a Farming Systems Research and Extension (FSRIS) Approach. Paper presented at the Nineteenth West Indies Agricultural Conference, June 13-17, 1988, St. Kitts, W.I.*

1987 WHOLE FARM PLANNING SUMMARY OF WINDWARDS - CAEP

EC$ (Average per farm)

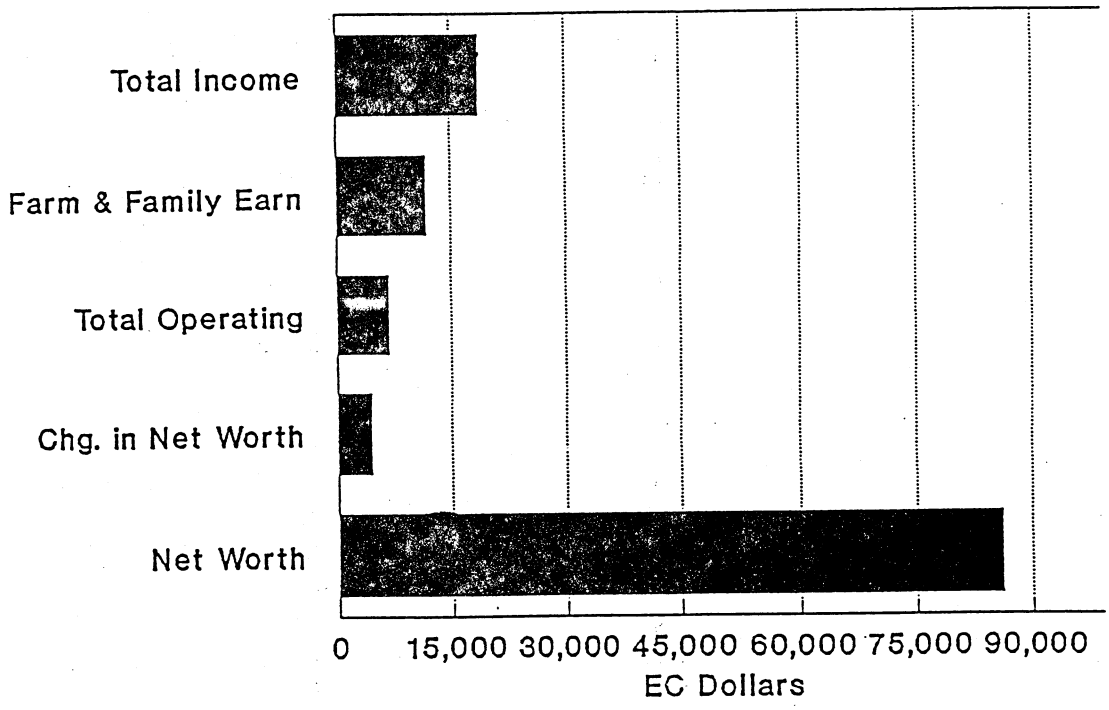
	Grenada	Dominica	St. Lucia	St. Vincent	Average
No. of Farms	36	30	28	12	106
Crop Sales	15,045	14,332	5,225	3,385	10,929
Livestock Sales	124	885	8,321	833	2,585
Other Cash Income	5,346	3,817	3,973	4,088	4,408
Changes in Inventory	1,197	145	805	383	704
Total Income	21,713	19,180	18,323	8,689	18,626
Total Operating Costs	7,123	7,164	7,426	3,428	6,796
Farm & Family Earnings	14,589	12,016	10,897	5,261	11,830
Financial Statement					
Current Assets	4,557	6,935	7,269	1,676	5,620
Intermediate Assets	5,176	7,669	7,923	2,874	6,349
Fixed Assets	71,911	106,609	68,000	41,500	77,255
Total Assets	81,644	121,214	83,191	46,070	89,225
Current Liabilities	1,845	167	171	38	723
Intermediate Liabil.	509	645	200	40	413
Fixed Liabilities	3,964	837	1,663	0	2,022
Total Liabilities	6,318	1,648	2,034	78	3,158
Net Worth	75,326	119,566	81,157	45,992	86,067

1987 WHOLE FARM PLANNING SUMMARY OF LEEWARDS - CAEP

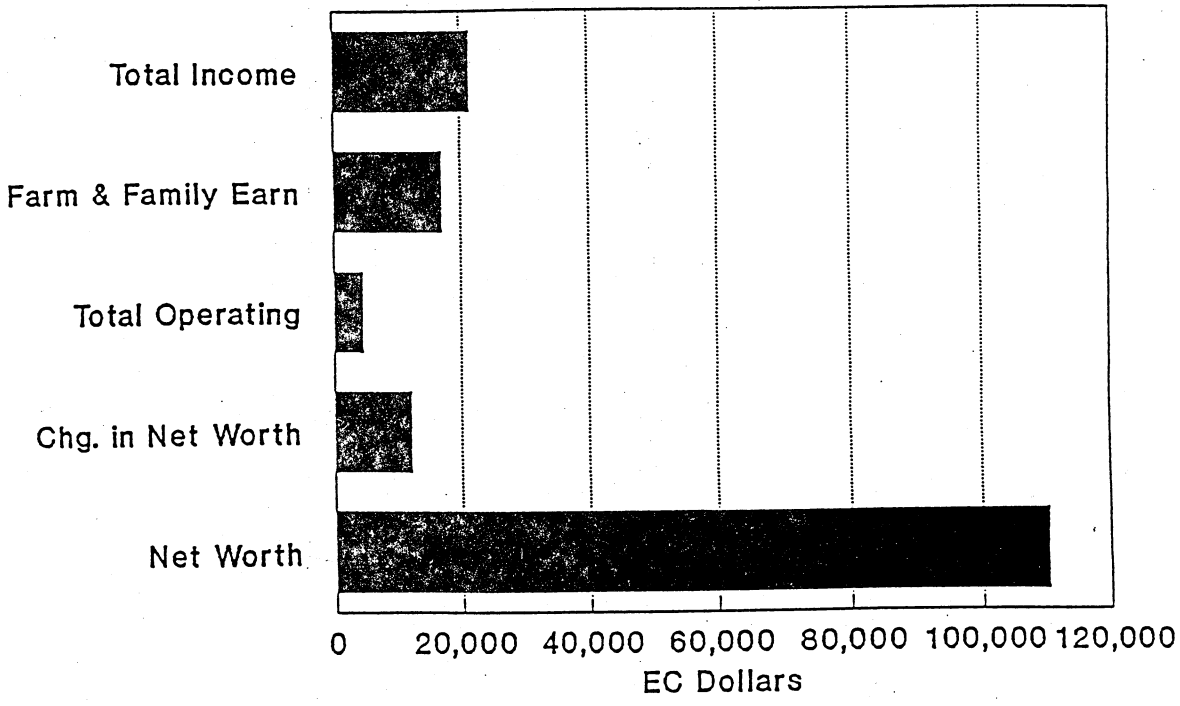
EC$ (Average per farm)

	St. Kitts	Montserrat	Nevis	Antigua	Av. of 50 farms
No. of Farms	15	3	13	28	50
Crop Sales	16,687	5,093	2,953	19,070	14,202
Livestock Sales	4,410	1,767	630	3,503	1,966
Other Cash Income	4,853	867	6,615	5,500	5,346
Change in Inventory	-61	-867	-526	234	-64
Total Income	21,773	6,859	9,673	28,307	21,450
Total Operating Costs	5,342	5,284	1,967	5,184	4,521
Farm & Family Earnings	16,431	1,575	7,706	23,123	16,929
Financial Statement					
Current Assets	2,653	2,167	2,515	6,444	4,397
Intermediate Assets	4,338	12,317	1,834	19,020	11,160
Fixed Assets	20,400	43,267	223,538	87,540	98,185
Total Assets	27,391	57,750	227,888	113,004	113,742
Current Liabilities	2,019	1,032	61	5,657	3,264
Intermediate Liabil.	0	320	0	1	17
Fixed Liabilities	531	0	0	0	135
Total Liabilities	2,550	1,352	61	5,658	3,416
Net Worth	24,841	56,398	227,827	107,346	110,326

1987



Averages (Windward) - CAEP



Averages (Leeward) - CAEP