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ACTION STRATEGY
AT COUNTRY LEVEL

SURINAME

1992 - 1993

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INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE
IICA OFFICE SURINAME



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PRESENTATION.

The IICA office in Suriname opened its doors in October 1981. At present almost 10 years later it has seen the Country move from a stable and high income economy with stable prices, to a declining economy with a deepening recession and economic instability.

This Country strategy for 1992 - 1993 has been prepared based on instructions of the IICA headquarters, and shows in general and specific terms the interest from the Government, Non-Government Organizations, Private sector and Farmers, it also shows the areas in which IICA technical cooperation is needed to ameliorate and solve partially, some of the many problems of the Agricultural sector of Suriname.

Dr. Hector Munoz
Animal Production Specialist.

Dr. Percy Aitken - Soux
Representative.

Paramaribo
October 30th, 1990.



I. EXECUTIVE SUMMARY OF THE COUNTRY.

1.1 OVERALL ECONOMIC SITUATION OF THE COUNTRY.

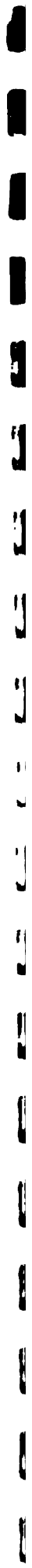
The economy of Suriname was the strongest in the Caribbean and its per Capita Income the highest in the area. The economy has historically been based on agriculture (Plantation economy). Since the end of World War II, the economic base shifted to Mining (bauxite). Since then, bauxite represented 75% - 90% of the total Government income. This income was based on a system of export levies and other taxes to mineral exports.

The economy is now in a state of decline ; the bauxite price has declined in the World Market while variable costs increased in Suriname. The plantation economy is difficult also, due to the lack of available labour. The efficiency of labour has decreased; as inputs, tools and spare parts have increased in price and become rare.

The Government deficit is \pm 25% of GDP. This is financed by monetary expansion which results in rapid inflation. The official Price Index rose from 100 (1984) to 671,0 for December 1989.

Emmigration has created a shortage of professionals applying for jobs. They have to be replaced by ungraduates if at all.

Government enterprises (Parastatals) have multiplied . Most of them loose money and demand subsidies. The Suriname Guilder has shown a declining purchasing power.



1.2. EVOLUTION OF AGRICULTURE'S SHARE OF THE GDP.

The agricultural share of GDP keeps on increasing as people try to produce a larger part of their sustenance and as import substitutes are produced in the country.

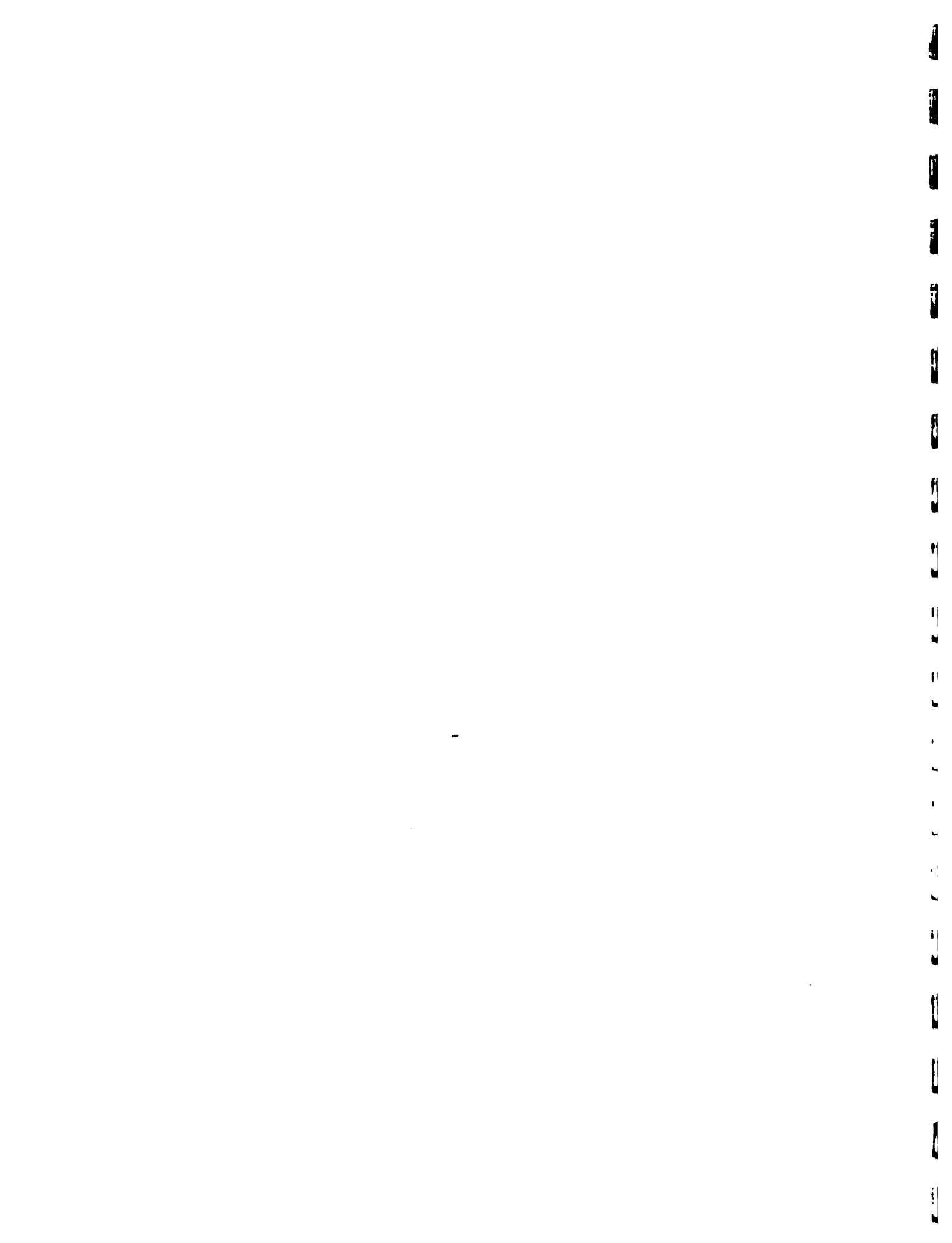
The following statistics show a consistent trend :

<u>1976</u>	<u>1978</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
8%	8.3%	9.1%	9.0%	9.4%	9.0%	9.6%	9.6%

<u>1986</u>	<u>1987</u>
10%	11.3%

1.3. EMPLOYMENT.

As the economy deteriorated more people entered the sector as a secondary source of income and for the production of food products which were imported from Holland before. (Milk, cheese, dry fruits, marmalades, etc.). Nonetheless the agricultural production for export decreased ; because of lack of inputs, export foreign exchange control, etc. Labour force in agriculture decreased as a full time occupation from 7 600 farmers in 1982 to 6 610 farmers in 1987. There is no up to date statistic. The largest employer is the Government with 43% of the total labour force. (It is assumed by non-official sources that it is over 50%).



1.4. GENERATION OF FOREIGN INCOME.

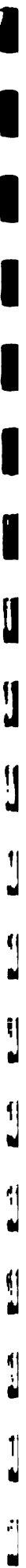
It is estimated that a 75% of the Foreign Income has been generated by the mining sector. The agricultural sector exported mainly rice, bananas, fruits, palm oil and a few other crops. But due to the Government policy to return to the exporters 1.78 Guilders for every US Dollar received by the Central Bank, most exporters decreased their exports to a shadow of their former self. (The Dollar has a black market value 10 times the official rate).

1.5. PER CAPITA INCOME.

An approach to estimate the present real per Capita Income is to apply the appropriate exchange US\$/Sf. As per the Bureau of Statistics 1988 the per Capita Income was Sf 5 400. At the official exchange rate of Sf 1.78 this was equal to US\$ 3 034. At the parallel market of US\$ 1.00 equals Sf 17.00 (October 12th, 1990) is equal to US\$ 317.6 which is assumed closer to the reality.

1.6. IMPORTANCE OF THE SECTOR IN THE DEVELOPMENT STRATEGY.

The Central Government of Suriname still has not internalized that their potential economic development is to be based on the agricultural sector; its great potential and its great multiplier to investment.



The priorities are still divided at present among the other sector of the economy. Also the agricultural products of large producers are directed to export. The local market is too small.

The Ministry of Agriculture is not only poorly financed but is also a politically weak Ministry.

1.7. PRINCIPAL PROBLEMS THAT LIMIT AGRICULTURAL AND RURAL DEVELOPMENT.

The enumeration of the problems does not imply an ordinal priority scale, because in different circumstances and for different projects the scale of priorities vary.

The problems observed among others are :

1.7.1. Centralized planning whose priority is not the agricultural sector.

1.7.2. Prejudicial outrank at potential markets. The national priority is Holland.

1.7.3. Lack of inputs for extensive agriculture, among these we can mention fertilizers, insecticides, pesticides, machines and machine parts.
The country does not produce any.

1.7.4. Government policy on foreign currency emergent of agricultural exports.
Cost of production is based on black market prices and external returns to producers are based on official rate of the exchange.

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- 1.7.5. Shortage and/or lack of services for the agri-livestock sub-sector which include Government and private services.
- 1.7.6. Low and/or lack of skilled agricultural related production personnel.
Lack of industrial infrastructure to produce inputs for export such as carboard, paper and bags. The country has the raw materials to produce them.
- 1.7.7. Lack of transportation facilities to production areas, these were destroyed by the War. Many production areas are in the War Zone and are being abandoned.

1.8. OUTLOOK FOR THE SECTOR IN THE COMING BIENNIUM.

As the economic crisis deepends and the bauxite's "easy money" becomes more scarce, the Government will have to turn its attention to agriculture.

The authorities of the Ministry of Agriculture, the private sector and the NGO's agree that the sector will be the "bread winner" of the Surinamese economy in the near future.

In order to do that the Government will have to make an effort to invest more in creating linkages to the markets, as well as a stronger look to a market economy approach for the potential agricultural exports.



This includes a more liberal treatment to foreign currency emergent from agricultural exports, and to allow more international carriers to stop or land in Suriname.

1.9. PRINCIPAL POLICIES ON AGRICULTURAL & RURAL DEVELOPMENT.

The main agricultural and rural development policies have been emphasized in the Multi-annual Development Plan (1976 - 1990) and in the Plan of Actions (P.O.A) (1984 - 1990).

The major policy objectives for the agricultural sector are :

- Diversification of the economy to reduce the dominance of bauxite and rice industries.
- Self-sufficiency in food supply and improvement in the country's food balance.
- A drastic increase of productivity and production of agricultural products required to satisfy national, as well as the industry and export needs.
- Self-sufficiency in expertise through intensive education and training at all levels.
- Increase agricultural employment and wages.

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1.10. THE COUNTRY'S PRIORITY AREAS OF ACTION FOR THE BIENNIUM.

The outcome of the diagnostic was discussed with National Institutions, Government officers, Regional and International Organizations and Private sector. With their assistance the country priorities were identified. The Government priorities at present are concentrated in export and import substitution areas of the agricultural sector.

- Rice (Drainage and irrigation infrastructure).
- Bananas.
- Oil industry (palms and Soy bean).
- Livestock (Dairy and Beef).
- Fruit and vegetables production.
- Small industries at village level.

Suriname is the country in the Caribbean that has the greatest potential for the development of a strong agricultural sector. The markets are close : The tourist countries of Antilles, the US and Canada and finally the European markets. The country has traditionally been an agricultural country. The greatest resources of the country are in the agricultural sector.



1.11. AREAS OF CONCENTRATION FOR IICA ACTION DURING THE BIENNIUM.

Based on the development policies and priorities in the agricultural area established by Government, the areas where IICA should concentrate its action for 1992 - 1993 are :

- Livestock production for import substitution of milk and beef for export. (Regular and external funds).
- Fruit and vegetables production for local and export demand (regular and external funds).
- The development of some agri-livestock alternatives for the oil palm industry. The drastic decline due to spear rot disease has caused great losses to the Government's oil palm company (External funds).
- Extension and training as a means of improvement personnel skills in the agricultural sector, and assist the private farmers (External funds).

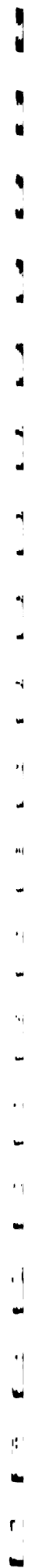
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II. INTRODUCTION.

In accordance to instructions from Headquarters, Dr Hector Munoz, Animal Production Specialist and Dr. Percy Aitken - Soux, Representative of the office of IICA in Suriname hauled the following actions :

- Studied carefully the document, "Guidelines for Preparing IICA's Actions Strategy at Country Level".
- Made a list of potential people to be interviewed at :
 - International Organizations level.
 - Government level.
 - Private sector level.
 - Made the interviews.
 - Made an Aide Memoire with highlights of all the interviews.
 - Analyzed the Aide Memoires.
 - Proceeded to write the document as carefully as we could.

The responsibility of the total activity was shared by Dr. Hector Munoz and Dr. Percy Aitken - Soux. Also a selection of reference materials was made. Finally we obtained the help of a Ministry of Agricultura statistician for the collection of pertinent statistics.



2.1. THE INTERNATIONAL ORGANIZATIONS INTERVIEWS.

- Embassy of Holland, Bert Ronhaar, Secretary for Development. (In charge of all the economic assistance to Suriname). He indicated that the economic assistance to Suriname is subjected to the changes that the Government will make in the Macro economic structure of the country. He also indicated that the Embassy would be happy to finance some Micro projects. He asked if IICA had an agreement with the Ministry of Cooperation and Development, which is a division of the Ministry of Foreign Affairs. He commented very positively on the agreement with the Ministry of Agriculture of Holland.

- Embassy of France, Ambassador Gaston Le Paudet, personally deals with the problem of the Suriname refugees in French Guyana and the economic assistance to Suriname. He is interested in assisting in the financing of any agricultural extension project that would assist the returning refugees.

- The Representative of the EEC, Mr. Lutz Saltzman, repeated his offer to give IICA the execution of a project on "Credit to Small farmers". Also he asked if IICA had an agreement with the EEC.

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We immediately requested the information to Headquarters since the project could probably start in January 1991. He indicated also that the future assistance to Suriname is subjected to Macro economic structural changes to be made by the Government.

- The Representative of the PAHO, Dr. Michael O'Carroll indicated that he would be very happy to work with IICA in the area of Animal Health (Zoonoses). He also indicated that he has a small budget of ± 3 000 US Dollars per year for Animal Health and that he would seriously consider the possibility of a small Joint Venture with IICA.

- The Representative of the OAS, Dr. Armand Tjon A Hung. He provided a wealth of information on the Ministry of Agriculture and indicated that the Ministry at present does not use all the assistance available to them. The Representative indicated that OAS scholarships could be available for Surinamese candidates that want to go to CATIE, Costa Rica.

- The Representative of the Belgian Technical Assistance.
Mr. Gerald Poppe has replaced Mr. J. de Smith. He has indicated that the level of activity of the missions has considerably decreased.

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- The Representative of the IDB, Mr. Airto Texeira indicated that IDB is always ready to work with IICA. He repeated what the Dutch Embassy, the EEC and the OAS indicated, that the Government does not use all the money made available to them, and that they were tied to work with the Government Plan Bureau.

- The Representative of the ACDI-Canada, Mr. A.F.Smit indicated that he was very interested in cooperating with IICA and that they were limited here to Micro projects of C\$ 50 000, but that they would be happy to consider projects that IICA would present. These projects would be sent to Georgetown, Guyana, as there is no Embassy in Suriname. Mr. Smit's office is honorary. The approval would come from the Embassy in Guyana.

Coincidentally the new Ambassador of Canada to Suriname arrived to present his credentials. He said that our projects should be sent first to our IICA Canada office to be presented to "ACDI" by our Representative in Canada. If "ACDI" can not finance it, he would be happy to consider the possibility to finance them from the "Canada Fund". The name of the Ambassador is John Zawsza.

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2.2. GOVERNMENT LEVEL INTERVIEWS.

We had separate one hour meetings with the following members of the Ministry of Agriculture and the office of Plan.

- Ir.S.Redjosentono, Minister of Agriculture.
- Ing.W. Esajas, Vice Minister of Agriculture.
- Ir.G.Soerjoesing, Permanent Secretary of the Ministry of Agriculture.
- Drs. R. Liew A Joe, Director of Livestock Production, Animal Healt and national Abattoir, Ministry of Agriculture.
- Ing.R. Huiswoud, Director of Research and crops division, Ministry of Agriculture.
- Ing.P.Sewdien, Director of Extension and Crop production, Ministry of Agriculture.
- A.van Sauers-Muller, Enthomologist.
- Dr.Lieveld, Veterinarian Pest Control Unit.

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- Mrs.Landen, Pest Central officer.
- Dr.Hok, Animal Health Unit.
- Mr.I.E.Kortram, Office of Plan Bureau.

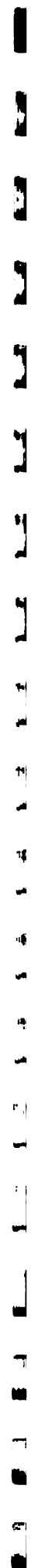
2.3. PRIVATE SECTOR INTERVIEWS.

The Private sector interviews in Suriname can be divided in three ;

- A. The Missionaries or Church missions, which play a big role especially in the interior. Dr.John de Miranda Director of the "Dia-konessen Hospital", is the coordinator.
- B. The private entrepreneurs and exporters of agricultural products.
- C. The small farmers, that come to the office to ask for assistance.

Finally meetings were held with the following exporting "Parastatals" (Government sponsored Corporations) :

- "S.E.L." - Foundation for Experimental Agricultural Research.
H.C.Alvares, General Director.
- "Oil Palm Industry" - I Foeng Poen,
General Director.



- "Surland" - (Banana Exports)
Stanley Gulzar , General
Director.
Jagoe Drielpman, Manager of
Jarikaba Plantation.

- "Rice" - J. Bhansing.
A. King.

III. SUMMARY OF THE SECTORAL ASSESSMENT.

3.1. DEVELOPMENT STRATEGY OF THE COUNTRY.

The Multi-Annual Development Plan (MNDP) which is still the official development document of the country has the major objectives, which are :

- Diversification of the economy to reduce the dominance of the bauxite and rice industries.
- Self-sufficiency in food supply and improvement in the country's food balance with the rest of the world.
- Growth of domestic savings so that future development financing would be provided increasingly from local savings and less from abroad.
- Guarantee of an adequate share of benefits by contracts with foreign companies operating in the country.
- Self-sufficiency in expertise through intensive education and training at all levels.

- Wider international relations by expanding economic, social and cultural relations with the Caribbean and Latin American countries to reduce the exclusiveness of relations with Holland. The MNDP provided the basis for the preparation and execution of its agrarian component, the MAIOP (Multi-Annual Integrated Agricultural Development Plan) in 1977.

- As stated before, one of the major objectives was for Suriname to become self-sufficient in food. The actual expenditure compared to allocated funds for the sector was only a small portion of what was available as occurred for the economy as a whole.

The utilization of less than $\frac{1}{2}$ of available investment funds indicates the limited capacity of Suriname to implement an economic plan with large multi-sectoral components to be implemented simultaneously. This experience suggests the need to concentrate on a few crucial programs for which the national human resources can be developed to properly implement.

3.2. MAIN CHARACTERISTICS AND PERFORMANCE OF THE ECONOMY

- 3.2.1. The bauxite industry that provides 75% of the foreign income to Suriname has been damaged by civil strike.



If the costs of producing electricity (which is hydroelectric now) go up, they run the risk of closing.

3.2.2. Rice is by far the most important sectorial activity in agriculture. The rice industry lost in 1989 10 million Dollars. In 1990 it is a little better because some inputs were provided by the EEC.

The other sectorial activities suffer mainly for two reasons :

- Lack of inputs (fertilizer, pesticides, insecticides, spare parts etc.).
- All export Dollars are surrendered to the Central Bank, which pay the exporters Sf 1.78 per US Dollar. As a consequence, nobody wants to export. Many observers suspect that they are exporting illegally.

Industry seems to be stable, although the International organizations believe that they are working below their installed capacity. Trade has been affected by the diminishing exports. There is no tourism.

3.3. PERFORMANCE OF THE PRINCIPAL ECONOMIC INDICATORS.

3.3.1. The trade balance shows a deficit of ±70 million Dollars.



3.3.2. The total demand for credit of the private sector remained weak due to the shortage of hard currency. The banks do not promote interest in time deposits. Interest rate on time deposits is 2 or 3%. The general level of prices followed the exchange rate rather than the Monetary supply.

3.3.3. Labour force and employment. Official figures put the present population at nearly over 400 000 people, versus some 365 000 in 1974, i.e. an average annual growth rate of 0.6%. The natural increase of 2.3% p.a. (birth rate 3.0%, mortality rate 0.7%), and a substantial inflow of migrant workers from Guyana and Haiti, was largely off-set by massive emigration mainly to the Netherlands, in 1974 - 1975 and in 1980 - 1982. The emigrants to Holland were well trained. The immigrants are not. The presence of some 200 000 people of Surinamese origin in the Netherlands, and a substantial number in the U.S.A. and the Dutch Antilles, is of economic significance, among them we can mention : gift parcels of food and other commodities, remittance of money. Also at the demand of Surinamese living in the Netherlands, a market for typical surinamese vegetables has developed.



The economically active population is estimated at about 40% of the total population, i.e. 160 000 people, of whom 105 000 are gainfully employed. According to some sources, the sectorial distribution in 1974 and 1987 was as follows :

	<u>1974</u>	<u>1987</u>
Agriculture, Fisheries		
Forestry	29%	25%
Mining	8%	4%
Industry, Construction	10%	10%
Services	21%	18%
Government	32%	43%

3.3.4. Operation and financing of the public sector .

The fiscal deficit has been financed by the emission of new currency. This has caused a flood of bank notes in the market, a shift in the demand of the US Dollar, an increase of prices in the market etc.etc.

3.3.5. Summary of main problems.

Among others we can mention :

- A galloping inflation.
- Shortage of foreign currency.
- Shortage of inputs.
- Declining exports.

- Problems in freedom to travel inside the country (insecurity and civil strife).
- Limitation of linkages for foreign travel and shipping (airlines and shipping services.).

3.4. AGRICULTURAL SECTOR.

3.4.1. With respect to land use and water management, three agricultural production systems can be distinguished :

- a. Irrigated crop production
- b. Rainfed crop production
- c. Food plots.

Irrigated production is restricted to wet rice cultivation in Nickerie and Coronie districts in the Northwest and in Saracca district in the Central region. A distinction may be made between river irrigation, reservoir irrigation, and swamp irrigation.

Rainfed dryland crop production systems are found throughout the country. The main management concern is with drainage of excess water to the fields.

The fertile heavy clay soils with low permeability require complicated drainage systems, which are expensive to conduct and to maintain. Proper drainage of these clay soils requires the construction of large, deep canals, spaced 200 metres apart. The field area in between is intersected by small drainage gullies spaced 6 to 9 metres apart. This lay-out hampers mechanization of production operations. For this reason, producers of rainfed crops give preference to the highly permeable but less fertile sandy soil of the ridges and to the unbleached sandy soil of the old coastal plains. In general, rainfed operations are for the production of various combinations of fruits, vegetables beans, pulses and root crops, beef and dairy cattle. Mechanization of the operations requires the use of small light equipment rather than heavy machines as those used in irrigated rice production. The main concern of land management is to maintain and improve soil fertility. The use of heavy machines in the clay causes soil compaction and deterioration of crop capacity.

Bushnegroes and Amerindians of the interior have food plots. The system is geared towards short-term rather than prolonged utilization of the land.

Small tracts of rainforest of 0.5 has. are cleared by slashing and burning the vegetation. Preference is given to more fertile slopes close to the rivers. The food crops are raised in a multiple cropping system of cassave, yams, fruit trees and some vegetables.

Part-time farming, this is a new concept in Suriname. It is said that most of the public employees are part-time farmers. But given the economic crisis of the country the "part-time" farmers have increased in numbers and time dedicated to farming.

Finally, an additional category of farmers are "farmers without land", i.e. persons in urban or rural residences of 15 - 60 years of age, who without owning and agricultural parcel, feed their animals on public or private lands along the streets or highways.

Potentially the agricultural production of the country is very great, but now, crops that were traditionally exported such as ; sugar and coffe are not being produced, Au Contraire" they are being imported.



- 3.4.2. Sectoral performance in production.
Please see appendicies Ia, Ib, Ic and
Id : Agricultural Products, Livestock
Grassland & Fisheries.

At first, you notice an increase in the productivity of the sector. This is true of fisheries, grassland and livestock. But it is necessary to point out that the production of rice has dropped sharply in 1990. Same as of bananas and oil palm. All of them were export products.

- 3.4.3. There is a very small Agro-Industry developed in the country. Most of it is artisanal. It is expected to grow due to the need to produce import substitutes.

Due to the Government regulations that dictate that all the export Dollars will go to the Central Bank and will be paid at 1.78 Guilders per Dollar, exporters are not interested in exporting. The Black Market rate for US Dollar is 17 Guilders at present (October 12th, 1990).

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IV. COMPONENTS OF THE STRATEGY.

4.1. DEFINITION OF PRIORITY AREAS FOR IICA COOPERATION.

The guidelines for the definition of the IICA 1992 - 1993 cooperation action in Suriname is based on :

- Governments's policy statements 1988 - 1993 for the agricultural sector make emphasis in the modernization and diversification of the agri-sector and the strong importance that Government is given for exporting non-traditional agricultural commodities. However the policy and main efforts from the Ministry of Agriculture Animal husbandry and Fisheries is in their policy of self-sufficiency in food supply to reduce the dependence of foodstuffs importation.
- The objectives and strategies set down in IICA Medium Term Plan and the PLANALC.

The definition of the areas made with the Government officers, national institutions and private sector were also based on the IICA cooperation programme areas as follows ;



Generation and transfer technology

In this area the actions selected are related to vegetables and fruit production, as well as to milk and beef production and finally to oil palm managements and control.

Rural development

This are actions selected that will concentrate on : rural radio agricultural extension service, organization of farmers for small credits.

Animal and plant protection

In this area the country will benefit from an Hemispheric animal and plant protection project, as well as from a national action in improve animal health service.

Other external assistance.

The external technical cooperation on agriculture (IDB and EEC) that have being offering the country during the last two years is restricted mainly to the rice production (inputs supply) and the development of infrastructure of the rice areas and processing facilities.

The Ministry of Agriculture and Plan have not mentioned any requests for technical assistance in Program I for the biennium 1992 - 1993.

4.2. IDENTIFICATION OF COOPERATION INSTRUMENTS TO BE USED.

The cooperation instruments identified also were the results of the analysis of national hemispheric, multinational and short term actions that have been carried by the Ministry of Agriculture and IICA.

A summary description of these proposed actions for 1992 - 1993 are presented in the following tables.

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4.2.1.

SURINAME NATIONAL ACTION PROJECTS.

PROJECT TITLE (NATIONAL PROJECT)	PROGRAMME	CONCENTRATION AREA	EXPECTED RESULTS	COUNTERPART INSTITUTIONS
Development of fruit production project to be integrated to the multinational project "Supporting the Development of Tropical fruit crops in the Caribbean".	II	<p><u>SURINAME.</u></p> <p>To conduct training activities for fruit production related personnel</p> <p>To build and repair existing facilities (Nurseries and lab) to support fruit production.</p> <p>To introduce fruit selected cultivars for Suriname.</p> <p>Transfer and adaptation of post harvesting processing and marketing practices.</p>	<p>Farmers and personnel from private sector trained in fruit production</p> <p>Personnel trained produce plants for fruit commercial farmers.</p> <p>Nurseries and laboratory facilities established for fruit production.</p> <p>Technological package on fruit production developed.</p> <p>Commercial fruit production farm established.</p> <p>Store, cooling and processing fruit production facilities improved.</p>	<p>Ministry of Agriculture Women Organization.</p> <p>Ministry of Agriculture Private farmers. Women Organization.</p> <p>Ministry of Agriculture Private farmers. Women Organization.</p> <p>Ministry of Agriculture Processing Private Companies. Women Organization.</p>



PROJECT TITLE (NATIONAL PROJECT)	PROGRAMME	CONCENTRATION AREA	EXPECTED RESULTS	COUNTERPART INSTITUTIONS
<p>Improving small farmers vegetables production (Preparation process). Project for quota funds.</p>	<p>II</p>	<p>Surveys and "Rapid appraisal" to identify production and marketing limitations need to be carried out at local national and external markets.</p> <p>To organize training activities for farmers and retrained personnel on production and marketing practices.</p> <p>To adapt, test and generate technology in vegetable production.</p>	<p>Production and marketing limiting factors identified.</p> <p>Farmers and farm personnel trained in the main areas of vegetable production.</p> <p>A vegetables technical package developed which includes main production and marketing practices.</p> <p>Local vegetables demand satisfied and surplus production for export is available. Facilities for export established.</p> <p>Vegetables are being exported on regular bases to Holland now.</p>	<p>Ministry of Agriculture. Farmers Organization and Service Cooperatives.</p> <p>Ministry of Agriculture Farmers Organization and Service Cooperatives.</p> <p>Ministry of Agriculture Farmers Organization and Service Cooperatives.</p> <p>Ministry of Agriculture Farmers Organization and Service Cooperatives.</p>



PROJECT TITLE (NATIONAL PROJECT)	PROGRAMME	CONCENTRATION AREA	EXPECTED RESULTS	COUNTERPART INSTITUTIONS
<p>Strengthening animal health service in Suri name. Conjunctional activity approved to prepare project in 1991.</p>	<p>V</p>	<p><u>NATIONAL</u> Survey on diseases and pest to be carried out at National and farmer level. To upgrade and adjust central and auxiliaries laboratories for country needs. To conduct animal health training activities for technical and farm personnel. To prepare a feasibility study to improve and rebuild the slaughterer's house facilities.</p>	<p>Incidence of the major livestock diseases and pests identified. Animal health laboratories improved and offering services to farmers. Animal health personnel trained to face the major diseases and pests. Slaughterer house facilities improved and with acceptable standards to export meat. Campaigns in place to control and eradicate the major diseases and pests found.</p>	<p>Ministry of Agriculture Animal health and production Direction. Ministry of Agriculture Animal health and production Direction. Ministry of Agriculture Animal health and production Direction. Ministry of Agriculture Animal health and production Director.</p>



PROJECT TITLE (NATIONAL PROJECT)	PROGRAMME	CONCENTRATION AREA	EXPECTED RESULTS	COUNTERPART INSTITUTIONS.
Agricultural radio extension to support Government and IICA technical cooperation actions.	II	<p><u>NATIONAL</u></p> <p>To prepare and carry out field days, special demonstration and on farm visits to support radio news and writing information for fruit vegetables and dairy farmers.</p> <p>To prepare and carry out radio news programs for dairy, fruit and vegetables production.</p> <p>To prepare dossiers as means to support the radio programs and teaching activities.</p>	<p>Personnel trained for audio writing and visual activities.</p> <p>Dairy, fruit and vegetables farmers are using the technology promoted by radio bulletins and farm demonstrations.</p> <p>Dairy, vegetables and fruit production radio news are daily transmitted.</p> <p>Extension leaves, bulletins, newspapers articles and posters prepared for fruit, vegetables and milk producing farmers.</p>	<p>Ministry of Agriculture Ministry of Education Radio Netherland Farmers Organization Women Organization Ministry of Transport and Communication Church Organizations.</p> <p>Ministry of Agriculture Ministry of Education Ministry of Transport and Communication Radio Netherland.</p> <p>Ministry of Agriculture Ministry of Education Radio Netherland Women Organization Church Organizations.</p>



HEMISPHERIC PROJECT	PROGRAMME	ACTIONS AT THE COUNTRY LEVEL	EXPECTED RESULTS IN THE COUNTRY	COUNTERPART INSTITUTIONS.
<p>Hemispheric project on international quarantine and agricultural health emergencies. Project approved SC/PE-1274 September 18th, 1990.</p>	<p>V</p>	<p>SURINAME Transfer and adaptation of international animal and plant inspection and quarantine methods.</p> <p>Transfer and adaptation of organizational model for agricultural health emergency systems.</p> <p>Boost participation of private sector to strengthen the operations of animal health laboratories and foster horizontal cooperation with laboratory services of other countries of LAC.</p> <p>Study of the plant protection diagnostic services and development of horizontal cooperation actions with laboratory services of other countries of LAC.</p>	<p>Plant and animal health inspection services in international points of entry operate more effectively.</p> <p>Emergency system in place to deal with exotic animal diseases and pests and another in place for plants.</p> <p>Animal health laboratory services operate more efficiently.</p> <p>Plant protection diagnostic services will have a liaison mechanism for receiving from and providing reciprocal technical cooperation to other countries.</p>	<p>Directorates of animal health and plant protection.</p> <p>Directorates of animal health and plant protection.</p> <p>Directorates of animal health.</p> <p>Directorates of plant protection.</p>

MULTINATIONAL PROJECT	PROGRAMME	ACTIONS AT THE COUNTRY LEVEL	EXPECTED RESULTS IN THE COUNTRY	COUNTERPART INSTITUTIONS.
<p>Multinational project "Support for the Development of Livestock Sub-sector in Guyana and Suriname" (Extension for three years of actual project) Project for quota and external funds. (1992 - 1993 - 1994)</p>	<p>II</p>	<p>IN GUYANA An agreement with CARDI signed to carry out, in collaboration, research and transfer of technology activities.</p> <p>To validate and transfer milk production technologies at farmers level</p> <p>Carry out training activities to improve skill of dairy production related personnel.</p> <p>The feasibility dairy production study project, adjusted and actualized to be presented to finance institutions.</p> <p>In collaboration with CARDI to develop sheep production models for small and medium size farmers.</p>	<p>National (NARI) and Regional (CARDI) generation and transfer of technology institutions strengthened.</p> <p>National Dairy Development programme (NDDP) is carrying out a project to validate two milk production systems at farmers level.</p> <p>Field days, in-service training and short courses offered to farmers and NDDP personnel.</p> <p>A dairy development milk production project promoted.</p> <p>Sheep production technologies available to farmers.</p>	<p>Ministry of Agriculture NARI CARDI</p> <p>Ministry of Agriculture NDDP CARDI Agriculture - Bank</p> <p>NDDP CARDI</p> <p>Ministry of Agriculture NDDP Agriculture-Bank.</p> <p>NARI CARDI</p>

MULTINATIONAL PROJECT	PROGRAMME	ACTIONS AT THE COUNTRY LEVEL	EXPECTED RESULTS IN THE COUNTRY	COUNTERPART INSTITUTIONS
		<p>To develop coconut-sheep production mixed systems.</p> <p><u>SURINAME</u></p> <p>To transfer, to Suriname dairy farmers, the validated milk production technology from Guyana.</p> <p>Milk production feasibility study prepared by IICA in 1987, adjusted, actualized and submitted to be finalized.</p> <p>To use Guyana project activities for in-service training for farmers and technical personnel.</p> <p>To prepare a project for the development of beef production and processing facilities for export markets.</p>	<p>Coconut farmers have technologies for utilizing un-used land under coconut trees.</p> <p>Dairy farmers in Suriname are using technology generated and validated in Guyana.</p> <p>Dairy development milk production project promoted.</p> <p>Farmer and technical personnel skill improved by training activities.</p> <p>Farmers have improved their beef production and export markets are opened.</p>	<p>NARI</p> <p>CARDI</p> <p>Ministry of Agriculture</p> <p>Animal health and production Direction</p> <p>Farmers Association.</p> <p>Ministry of Agriculture</p> <p>Agriculture-Bank</p> <p>Ministry of Agriculture</p> <p>Animal health and production Direction</p> <p>Farmers Organization.</p>

4.2.3.

PRE-INVERSION ACTIONS

PROGRAM OR PROJECT TO SUPPORT OR TO DEVELOP	TYPE OF ACTION	PARTICIPATE INSTITUTIONS	ESTIMATED COST	MISCELLANEOUS
To prepare an agri-live-stock alternative for the oil palm fields because the devastating damage caused by the spear rot.	To prepare a project profile.	Oil Palm Industry.	US\$ 10 000	Quota funds
Study of the improvement of milk plant facilities.	To prepare a project.	Milk plant MOFA.	US\$ 10 000	Quota and/or extrenal.
Credit for small rice farmers MOFA -EEC funding.	To prepare a project to organize small rice farmers in order to use more efficient the credit.	MOFA EEC Rice farmers.		External funds project already funded by EEC. EEC has indicated its interest in the execution by IICA.



4.3. MECHANISMS FOR REACHING AGREEMENT.
AND FOR CONSULTATION.

4.3.1. With authorities from the sector and
from the counterpart.

Periodic meeting and courtesy visits
have been used as tools to inform, consult
and confront the Government officers.

<u>Authority</u>	<u>Schedule</u>
Minister	Twice a year
Vice-Minister	Twice a month
Director of Agriculture	Once a month
Director of Animal Health and Production.	Twice a month and when it is required.
Livestock Parastatals S.E.L.	Twice a year and when it is required
Livestock officer counter- part of the IICA project leader.	Twice a month and when it is required.



4.3.2. With other international organizations and agencies.

Once a month lunch-meeting is promoted by this representation to use as a mean of consultation and information exchange between the organization and diplomatic mission providing or financing technical assistance in the country. In addition to these meetings an official visit is made once a year to advise the mission on IICA's activities in the country.

4.3.3. With subregional intergration agencies.

Suriname is only an observer member of CARDI and CARICOM. Suriname is invited to very few activities that are taking place in the region.

Suriname is indicating that as a member of the Caribbean area, they have the least opportunity to have direct benefits from Caribbean project actions. However this office within its limitations have sent technical staff to participate in some Caribbean activities.

4.3.4. With representatives from private sector.

There is not a formal schedule fixed for the different groups in the private sector, however during the last two years this office maintained an open and permanent communication with the private sector.



- a. Livestock Farmers Organization, IICA office helped this group to prepare a project for IDB.
- b. Surinamese Women Movement. Information to prepare project profile in fruit production have been supplied by IICA.
- c. Industrial private group have verbally requested from IICA to prepare a project on fruit production processing and marketing. (Fernandez N.V.).
- d. "Stichting voor Experimentele Landbouwbedrijven" S.E.L. a parastatal group is requesting IICA collaboration in beef production and meat processing.
- e. "Tropica N.V.", manufacturer of fruit sirops and juices, wishes IICA's cooperation.
- f. "Mrs.Ho N.V.", manufacturer of fruit sirops and juices, wishes the assistance of IICA on fruit production and transformation.
- g. A week farm visit is paid to farmers that are working in the livestock project.

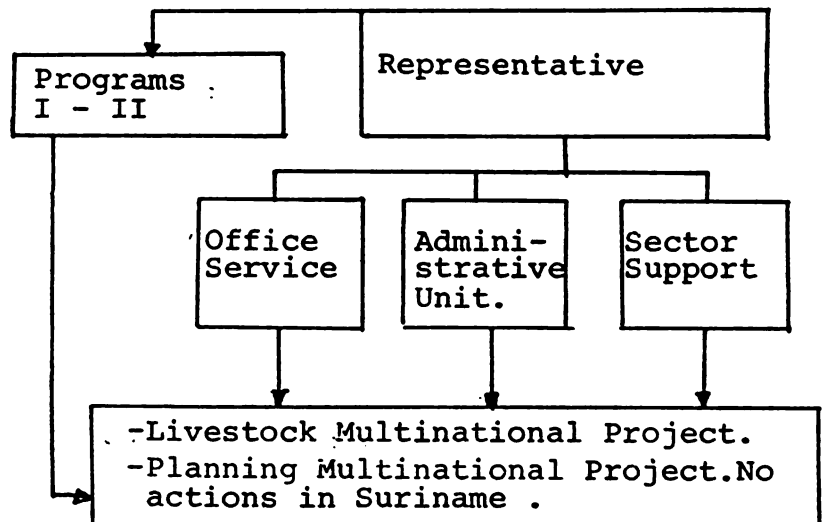


h. More and more farmers and non-Government associations are visiting the office now.

4.4. DESIRED IMAGE OF THE OFFICE AND THE DEVELOPMENT OF ITS MANAGERIAL CAPABILITIES.

4.4.1. The actual internal office organization.

During 1989 and 1990 it is described in the following chart ;



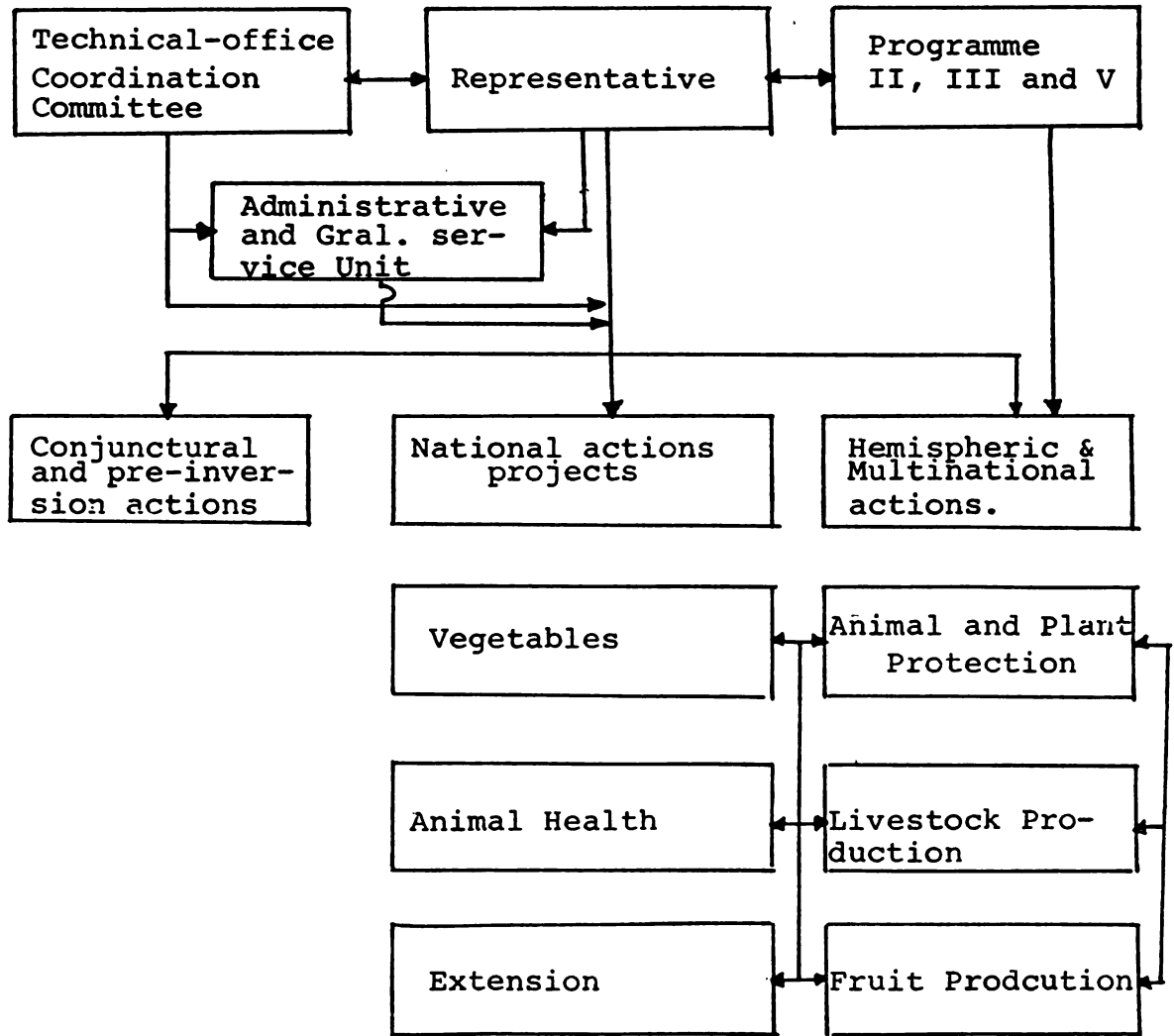
The Managerial activities of this representation are limited to a coordination and support of two multinational projects. Some conjunctural and pre-inversion activities were cancelled because IICA's economic crisis. No national project is carried out for the 1990 - 1991 period.



The representation in Suriname needs to be prepared to support the Government in the implementation of the agri-policies, based on the areas of actions that were identified during the concertation and confrontation of activities carried out.

The areas needed to be strengthened are shown in the proposed chart,

IICA - SURINAME OFFICE





4.4.2. Programming, Supervision and Follow up.

The Technical Office Coordination Committee will be established to help this representation to program, implement control and evaluate the actions carried out at country level. The activities of this committee will complement the IICA supervision and follow-up system in place.

4.4.3. Training

- Language barrier

In Suriname dutch language is most important to communicate with people and farmers. All non-national IICA personnel must receive a course. Funds are needed to support this activity.

- Technical actualization.

Every year technical personnel should budget in their project funds for attending either, a technical meeting a seminar or a workshop in their field of specialization.

- Service personnel

A refreshment seminar to administrative officers should be offered every two years at regional level.



4.4.4. Support from Headquarters and exchanges with other offices.

- Support from CEPI to prepare projects for external funding.
 - Beef production and meat processing.
 - Improving milk plant facilities and capacity.
- Support from the Caribbean region technical personnel.
 - Organization of vegetables and fruit production for small and medium size farmers.
 - Strengthening dairy farmers organization.

4.5. DISSEMINATION OF IICA's IMAGE.

A combination of tools to disseminate IICA's image will be used according to the level of authority, Government, International, Regional and National institutions as well as in the private sector.

<u>Authority</u>	<u>Type</u>	<u>Frequency.</u>
Ministry of Agriculture and related Ministries.	Consultation and confrontation . Operative Plan.	Twice a year



<u>Authority</u>	<u>Type</u>	<u>Frequency.</u>
	Strategy action Plan.	Every two years.
Vice-Minister and Director of Agriculture.	Consulation and confronta - tion.	Twice a year.
	Operative Plan	Beginning each year.
	Strategy action Plan	Every two years.
	Information and consultation visits.	At least once month.
International and regional organization and Diplomatic Missions providing technical assis- tance to Suriname.	A working lunch on development sctivities in Suriname	Once a month.
	Consultations	As necessary.
Private sector	A field day on IICA activities in the country.	Once a year



<u>Authority</u>	<u>Type</u>	<u>Frequency.</u>
Farmers	Field days De- monstration.	Once a year.
	Written Infor- mation.	Twice a year.
Surinamese public	News paper in- formation.	As often as possible.

In addition to the mean activities described above the office will take all opportunities to represent IICA and participate in all activities where IICA can make an appearance and cause an impact.

4.6. RESOURCES NEEDS.

4.6.1. Criteria for allocating available regular resources.

The criteria for the allocation of regular resources was based on the priorities expressed by the Ministry of Agriculture officials as well as by the Minister Himself. These priorities can be summarized in one sentence : "To increase Agricultural and Livestock production in the private sector". This would permit the initiation of activities in areas that have the potential for the development of projects for external resources in accordance to the guidelines of the IICA system.



The potential financial agencies have also showed interest in the possibility of financing small and micro projects for the private sector. (Holland, Canada and EEC).

Since the opening of the office in Suriname IICA did not obtain any external funded projects. For the first time in September 1989 IICA received an offer for support of a training project. This project was postponed for 1990 and later for 1991. The project is for Programme I, in "Project Preparation". It is expected that the project which is to be financed by IDB as a grant to the "Bureau of Plan" will generate some CATIS for 1991. But neither the Ministry of Agriculture nor the Bureau of Plan have requested any activity for 1992-1993.

If there is some CATIS generated for 1992-1993 this office will need to programme them for office equipment and office repairs urgently needed.

The reason why we are asking for two projects, one for fruit and the other for vegetables, is that one is extensive, uses large tracks of land and the other is intensive. Fruits are grown further away from the city vegetables close to the city. The beneficiary groups are different.

The estimation of regular and external resources needed are shown in the table on page 47.



ESTIMATION OR REGULAR AND EXTERNAL RESOURCES NEEDED FOR
ACTIONS OF NATIONAL SCOPE (US\$).

SURINAME COST OF UNIT AND FUNDING SOURCE	YEARS		TOTAL
	1992	1993	
A. WITH REGULAR RESOURCES			
a. Management	133 564	140 242	273 806
b. Approved projects Nil.			
c. Projects pending approval			
1. Improving small farmer vegetable production	37 656	39 538	77 194
2. Development of fruit production in Suriname Project to be intergrated to the Multina- tional project "Supporting the Development of Tropical fruit crops in the Caribbean.	32 500	34 125	66 625
B. WITH EXTERNAL RESOURCES.			
a. Approved projects Nil			
b. Projects pending of approval			
1. Strengthening animal health service in Suriname	58 000	46 000	104 000*
2. Agricultural radio extension to support Govern- ment and IICA technical cooperation action	28 000	24 000	52 000*
C. WITH REGULAR RESOURCES.			
a. Pre-inversion actions			
1. To prepare Agri-livestock activities for the spearrot devastating oil palm industry	14 000	14 000	14 000
2. Study for the improvement of the milk plant facilities.			14 000
3. To prepare a project to organize small rice farmers in order to benefit of the credit facilities.	6 500		6 500
TOTAL COST OF UNIT	310 220	297 905	608 125

*.Total CARRIES generated US\$ 18 720,00



4.6.2. Strategy for securing external resources.

Suriname is a country with Centralized Planning. All external funds coming to Suriname have to be ok'ed by the "Plan Bureau" or Planning Office. The available financing for Suriname comes from the following sources :

- Dutch Development Fund (Independence).
- EEC.
- Belgian Technical Assistance.
- IDB.

The Centralization has created problems in the capacity to use the available funds. All the above institutions indicate that Suriname does not use all the funds made available to the country.

Some of the institutions expressed interest in working with IICA.

They are now dealing with the "Plan Bureau" and would like to obtain the authorization to deal directly with IICA.

Internal actions .

- a. IICA visited the Embassies of Korea and Japan, which assist the Government in bi-lateral agreements in fisheries.



They indicated that they knew nothing of any possibility to work with IICA. They were supplied with information and publications.

- b. Canadian and Dutch Embassies have funds for micro projects, which are available to Suriname without consultation with the Plan Bureau. Both Embassies were visited by IICA. They specially want assistance to private farmers and to women.

IICA is going to prepare two small projects for private farmers and women in agriculture.

- c. Potential list of sources and amounts.

- Canada - 30 000 Demonstration Farm for farmers.
- Canada - 20 000 Development on fruit orchards for women.
- Holland - 30 000 Radio extension & diffusion bulletins.



- e. If the situation changes in Suriname and if the financing institutions do not have to go to the Bureau of Plan then negotiations may become easier and may begin for the large projects, then we will need assistance from Headquarters.

The external financing is pressing for changes as well as the fact that internal pressures in the Bureau of Plan exist. (Two long strikes in 1989 and 1990).

- f. All legal instruments to commit and administer resources will be beforehand consulted with Headquarters.



4.6.3. Human Resources needed.

In order to achieve the Proposal Strategy Plan for the 1992 - 1993 period the Unit will need the Human Resources showed in the following table ;

HUMAN RESOURCES NEEDED

AREA OF SPECIALIZATION	TYPE OF PROFES- SIONAL	YEARS OF EXPERIENCE	CONTRACT
1. <u>PROFESSIONAL STAFF REPRESENTATIVE *</u>	PPI - PHD		
Animal Production Expert*	PPI - PHD		2 years
Crop production	NPP - MS	4	2 years
Fruit production	NPP - MS	4	2 years
Extension	NPP - BS	3	2 years
Animal Health	NPP - MUD	2	2 years
2. <u>GENERAL SERVICE PERSONNEL</u>			
Administrative officer	NGS HS	1	Permanent
Executive Secretary *	NGS HS	2	Permanent
Two auxiliary secretaries**	NGS - HS	1	Permanent
Driver *	NGS	2	Permanent
Maid *	NGS	1	Permanent
3. <u>CONSULTANTS</u>			
Milk processing	IPP MS	5+	1 month
Crop livestock	IPP MS	5+	1 month
Farmer Organization	IPP MS	5+	1 month

* Existing personnel

** Not existing personnel.



4.6.4. Suriname's assistance to IICA.

Before this exercise is finished it is imperative that we present the efforts of the Government of Suriname to assist the IICA Suriname office. The economic support of Suriname to the office is kind. They provide among others the following things:

-	The office building (rent free)	US\$18 000/year
-	Electricity	US\$ 6 000/Year
-	Gasoline	US\$ 5 800/year
-	A gardener	US\$ 7 932/year
-	A Chauffeur	US\$ 6 060/year
-	A maid for cleaning and coffe service.	US\$ 4 040/year
-	One National Profes- sional	US\$ 8 135/year
-	One technical field assistant.	US\$ 6 509/year
	Total	<hr/> US\$62 476/year.



It can be seen what great effort the Government is doing to assist IICA. This is one more reason why IICA should try to support the country with the national actions proposed.

It may be interesting to know that the Ministry of Agriculture also use to pay for all telephone services since 1981 to June 1989. This service was cut because of lack of control.

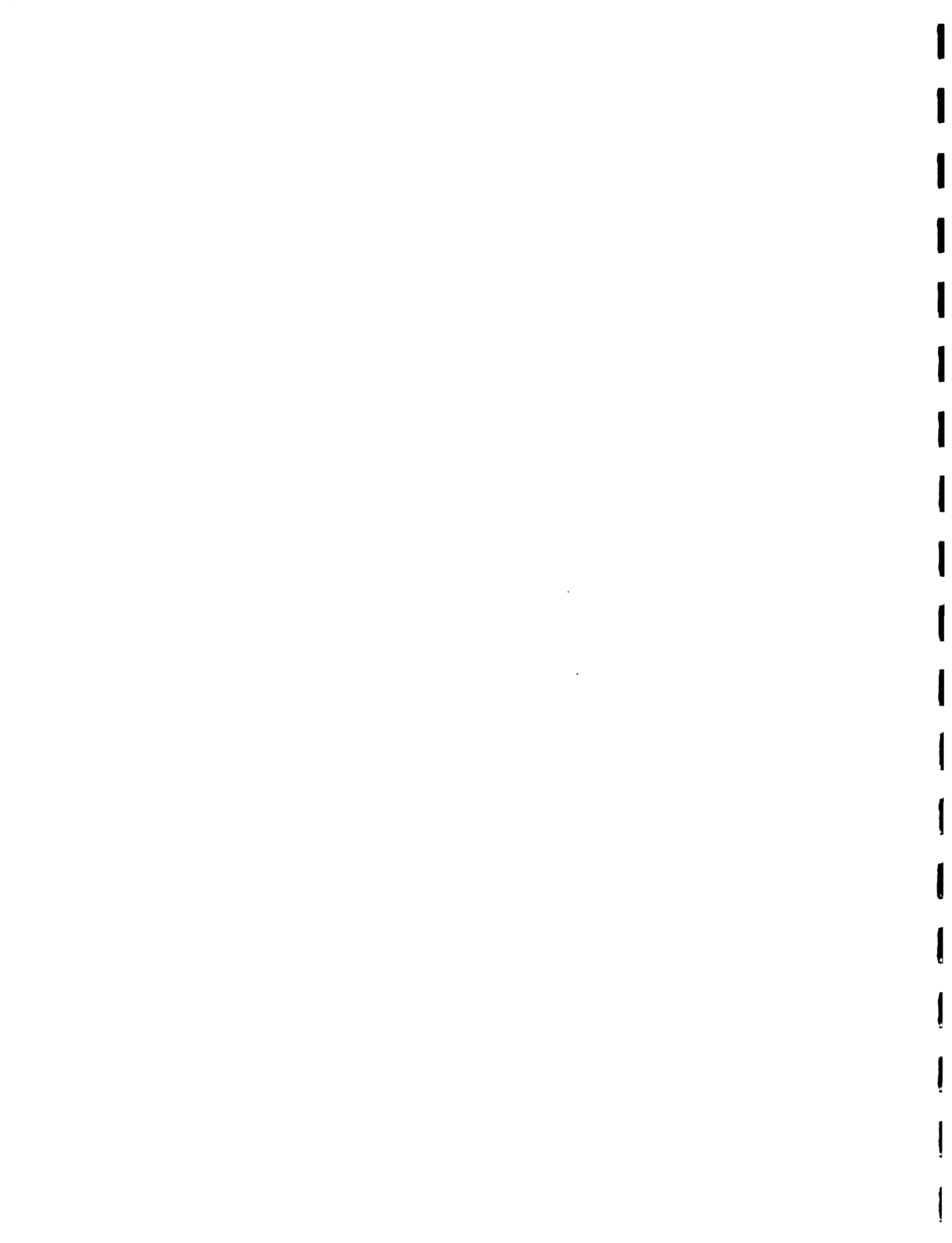


APPENDIX I A

AGRICULTURAL PRODUCTIONS IN TONS

DESCRIPTION	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
ANNUAL CROPS										
Paddy	257.629	280.743	301.130	267.958	301.995	299.185	299.954	271.600	265.244	260.895
Mais	290	408	211	165	375	249	204	415	241	186
Cassave	2.956	4.676	2.571	2.659	3.760	3.000	1.758	3.837	1.843	1.995
Other tubers	622	1.470	586	788	804	818	211	424	128	178
Peanut	210	339	344	257	485	449	467	488	530	410
Oerdie (Bean)	63	100	77	68	80	93	101	192	76	88
Other Leguminous	50	191	36	35	40	48	35	43	74	40
Cabbage	516	680	436	355	574	680	299	1.902	1.709	2.119
Tomatoes	733	1.589	498	447	450	626	351	1.112	1.344	1.720
Other Vegetables	3.401	8.312	4.351	3.778	4.064	4.295	3.583	12.877	10.763	11.277
Other Annual crops	2.083	4.692	2.976	1.860	2.170	2.230	1.332	3.243	4.575	2.368
TOTAL ANNUAL CROPS	268.553	303.200	313.195	278.370	314.803	311.673	308.295	296.133	286.528	281.643
SEMI-PERENNIAL CROPS										
Sugarcane	146.399	146.327	125.391	128.823	130.625	118.225	110.967	48.786	18.875	18.492
Bananas	39.226	44.703	42.399	36.598	41.063	43.139	43.744	43.204	52.894	45.943
Plantain	2.918	4.500	3.166	3.495	5.512	4.963	2.847	8.505	8.391	8.666
Other Semi - Perennial Crops	42	313	304	280	92	159	179	835	744	216
TOTAL SEMI-PERENNIAL CROPS	187.585	195.843	171.254	169.196	177.292	166.486	157.737	101.330	80.904	73.317
PERENNIAL CROPS										
Cacao	65	75	30	35	40	36	34	27	18	20
Cofly	45	53	44	47	40	35	45	36	39	49
Palm bunches	21.026	24.653	28.188	31.235	33.894	38.212	30.296	1.990	11.609	13.953
Orage	8.756	9.375	7.717	8.673	8.659	9.560	9.550	11.161	10.013	12.638
Grapefruit	1.773	1.150	1.197	1.903	1.659	1.447	1.273	1.961	1.005	1.231
Other Citrus	584	606	455	540	940	1.012	801	1.054	1.113	1.373
Coconut	5.479	6.526	7.177	6.453	6.772	6.947	8.518	10.130	8.698	11.270
Other Perennial crops										
TOTAL PERENNIAL CROPS	37.728	42.438	44.808	48.886	52.004	57.272	50.517	26.359	32.495	40.534
GENERAL TOTAL	493.866	541.465	529.236	496.452	544.079	535.431	516.549	423.822	388.245	395.494

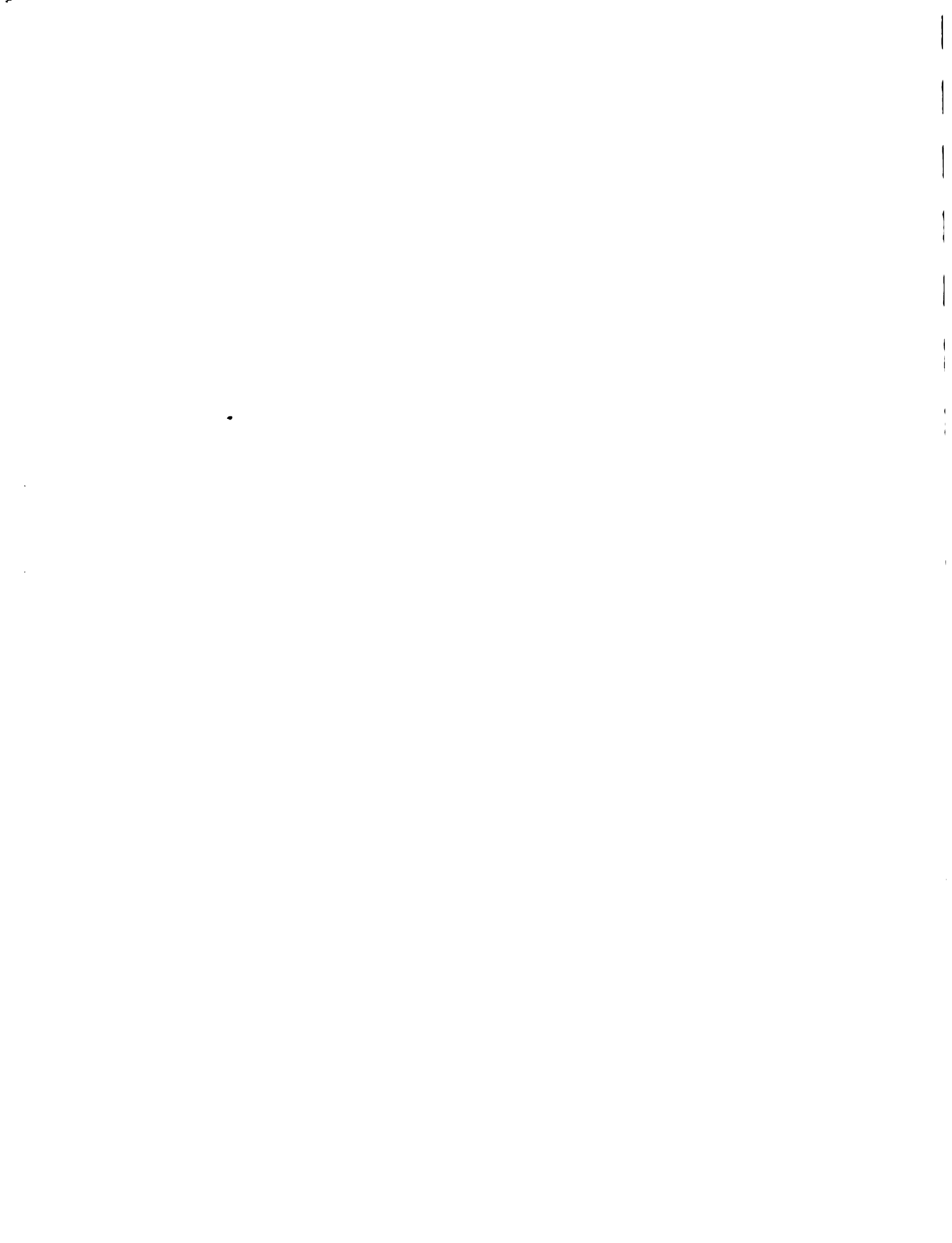
NOTE : 1 ton Orange = 4 000 pieces
1 ton Grapefruit = 2 000 pieces.



A P P E N D I X I B
LIVESTOCK

DESCRIPTION	AMOUNT	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
CATTLE											
COWS	piece	21.282	21.168	22.919	23.803	23.759	24.664	28.310	34.038	37.134	40.315
O.W. Milkgiving	piece	5.922	6.350	6.178	7.020	6.950	6.282	6.804	6.915	8.104	9.032
Young cattle female	piece	10.550	12.981	13.503	13.469	14.549	15.734	17.586	19.100	19.410	18.540
Young cattle male	piece	8.834	10.392	10.569	11.448	12.157	12.034	13.860	14.765	16.211	18.891
Bulls	piece	5.468	6.601	6.254	6.854	7.585	7.976	8.314	9.906	11.060	10.891
Oxes	piece	79	88	117	100	42	22	40	72	227	179
Total number of cattle		46.213	51.230	53.362	55.674	58.092	60.430	66.895	76.367	83.732	89.335
PIGS											
Sows	piece	5.002	3.923	4.612	4.968	4.334	3.863	3.860	3.775	4.381	4.602
Bears	piece	2.210	1.800	1.879	1.504	1.379	1.683	1.384	1.420	1.441	1.320
Farrowers	piece	12.758	13.587	12.102	14.928	16.124	15.426	13.949	14.160	15.178	19.193
Total number of pigs		20.000	17.723	18.593	21.395	21.837	20.972	19.193	19.355	21.000	25.115
POULTRY											
Chicken and other poultry		1.000	4.600	4.700	4.700	4.800	5.600	5.400	5.400	6.210	
OTHER LIVESTOCK											
Buffalo's	piece	224	250	275	342	590	500	528	1.485	670	575
Horses	piece	88	120	92	142	150	105	341	305	351	316
Donkeys	piece	45	40	21	35	36	24	89	77	45	30
Goats	piece	6.441	8.892	3.911	4.096	5.364	4.987	5.768	7.075	9.885	9.595
Sheeps	piece	2.918	4.064	2.197	2.685	3.512	3.183	4.024	5.580	7.750	8.380

O.W. = Of Which.



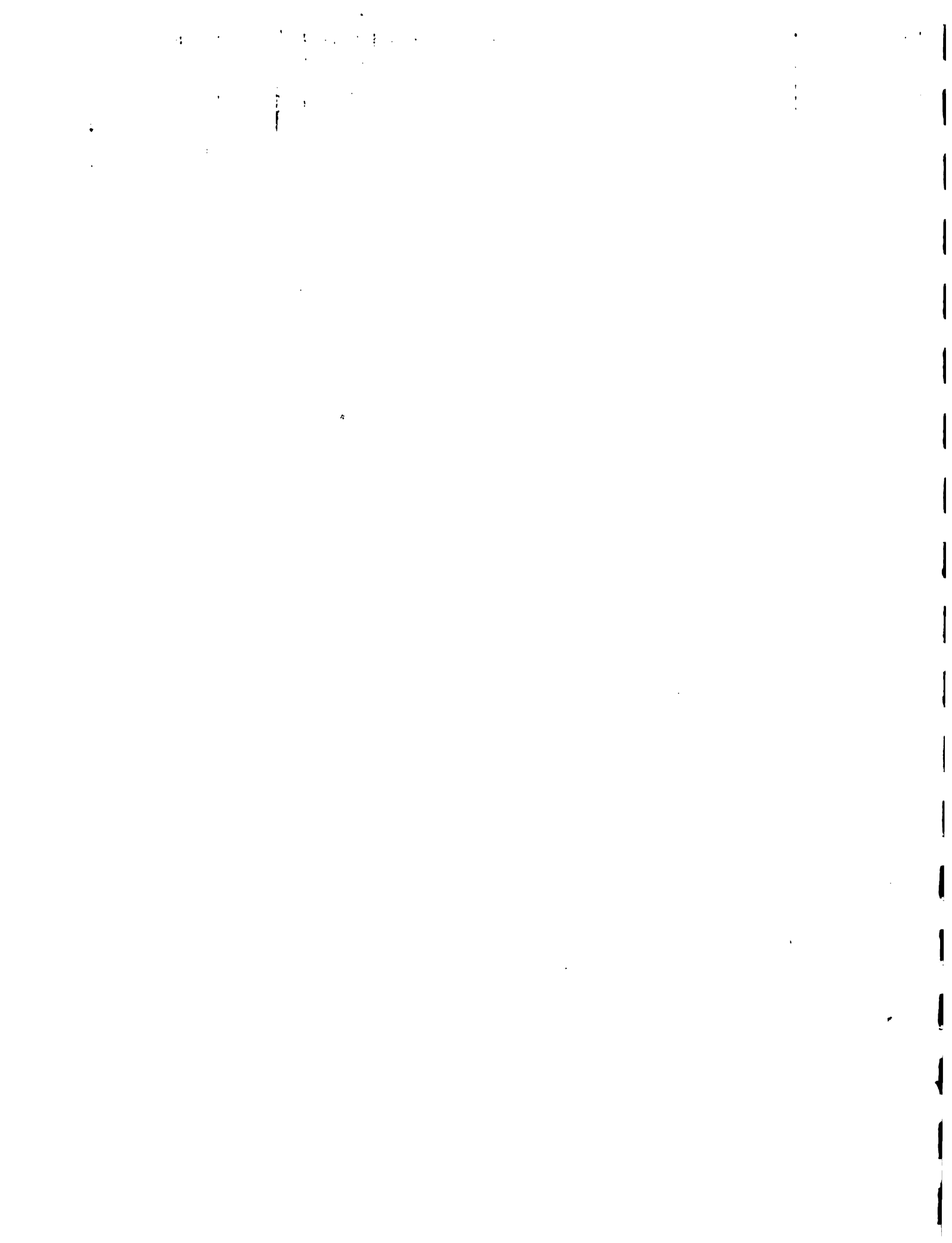
APPENDIX IC
PASTURE AND PRODUCTION OF

DESCRIPTION	UNIT	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
<u>PASTURE</u>											
Fence Not fenced	ha.	13.210 1.763	15.666 5.227	13.084 2.386	15.463 2.472	16.630 2.820	17.000 3.000	18.474 3.654	22.800 4.595	23.665 5.240	23.860 5.250
<u>TOTAL PASTURE</u>	"	14.973	20.893	15.470	17.935	19.450	20.000	22.128	27.395	28.905	29.110
<u>CATTLE FOOD PRODUCTION</u>											
Chicken food	ton	39.781	43.080	47.533	43.930	43.840	40.816	34.595	32.196	41.964	44.562
Hatchers	"	-	-	12.995	12.010	11.985	11.428	11.697	9.400	10.600	13.259
Pigs	"	5.442	4.718	6.839	6.321	6.308	6.066	7.433	3.931	8.748	1.097
Cattle	"	1.356	1.663	684	632	631	635	1.135	677	465	284
Others	"	97	127	342	316	315	325	712	860	859	2.113
<u>TOTAL FOOD PRODUCTION</u>	"	46.676	49.588	68.393	63.209	63.079	59.270	55.572	47.064	62.636	61.315
<u>SUPPLY RAW MATERIAL</u>											
Mais	ton	29.912	29.353	-	-	29.574	17.466	23.424	10.742	20.302	21.585
Rice bran	"	2.295	2.479	-	-	4.374	16.256	13.440	26.207	22.376	30.455
Soya	"	690	5.501	-	-	9.268	14.321	10.557	2.308	753	0
Concentrates	"	12.580	7.822	-	-	6.057	3.419	8.402	10.341	12.248	11.509
Others	"	295	1.110	-	-	1.882	2.590	2.196	450	528	388
<u>TOTAL RAW MATERIAL</u>	"	45.772	46.265	-	-	51.160	54.052	58.019	50.048	56.207	63.937

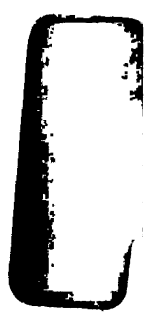


APPENDIX I
FISHERIES

DESCRIPTION	UNIT	SUPPLY AND VALUE OF FISH										
		1980	1981	1982	1983	1984	1985	1986	1987	1988		
1. <u>Shrimps</u>	ton	138	140	157	160	302	205	146	182	198		
	Quantity	200	177	253	273	410	413	655	770	784		
	Supply value	306	273	378	415	863	707	1,106	1,608	1,619		
	Selling value											
2. <u>Krabs</u>	ton	31	37	43	33	40	40	22	42	38		
	Quantity	55	56	79	53	59	72	48	98	104		
	Supply value	88	90	124	85	103	126	102	202	239		
	Selling value											
3. <u>Saltwater Fish scaled</u>	ton	970	1,052	1,222	1,288	1,860	1,682	1,165	1,056	1,648		
	Quantity	1,309	1,588	1,959	2,057	3,031	3,262	3,622	4,602	6,817		
	Supply value	2,106	2,584	2,544	3,281	5,247	5,609	6,659	9,358	13,696		
	Selling value											
4. <u>Saltwater Fish Unscaled</u>	ton	805	963	1,017	1,193	1,269	985	990	1,044	1,613		
	Quantity	840	974	996	1,187	1,241	996	1,757	3,419	5,587		
	Supply value	1,370	1,632	1,586	1,818	2,037	1,808	3,446	7,159	10,936		
	Selling value											
5. <u>Swamp Fish</u>	ton	171	187	199	189	173	233	225	71	195		
	Quantity	537	607	629	692	654	914	1,093	595	1,630		
	Supply value	923	939	987	1,150	1,039	1,527	1,628	1,084	3,177		
	Selling value											
TOTAL	ton	2,115	2,379	2,638	2,863	3,644	3,145	2,548	2,394	3,692		
	Quantity	2,941	3,402	3,916	4,262	5,395	5,657	7,175	9,484	14,492		
	Supply value	4,793	5,518	5,619	6,747	9,279	9,777	12,941	19,411	29,667		
	Selling value											









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