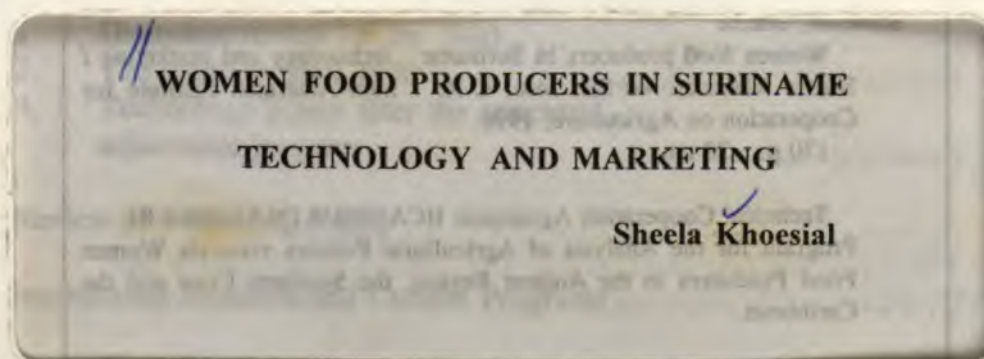


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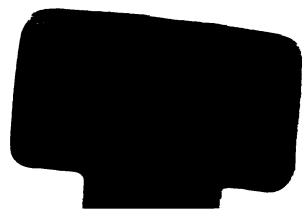
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Program for the Analysis of Agricultural Policies
vis-a-vis Women Food Producers
in the Andean Region, the Southern Cone
and the Caribbean



TECHNICAL COOPERATION AGREEMENT IICA/IDB/ATN-SF-4064-RE

AREA OF CONCENTRATION IV
SUSTAINABLE RURAL DEVELOPMENT



TECHNICAL COOPERATION AGREEMENT IICA/IDB/ATN-SF-4064-RE

**PROGRAM FOR THE ANALYSIS OF AGRICULTURAL POLICIES
VIS-A-VIS WOMEN FOOD PRODUCERS IN THE
ANDEAN REGION, THE SOUTHERN CONE AND THE CARIBBEAN**

// **WOMEN FOOD PRODUCERS IN SURINAME
TECHNOLOGY AND MARKETING**

Sheela Khoesial

**AREA OF CONCENTRATION IV
SUSTAINABLE RURAL DEVELOPMENT**

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Inter-American Development Bank (IDB).
February, 1996.

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IICA's Editorial Service was responsible for the stylistic revision, typesetting and layout of this publication, and IICA's Print Shop for the printing.

Khoesial, Sheela

**Women food producers in Suriname : technology and marketing /
Sheela Khoesial. — San Jose, C.R. : Inter-American Institute for
Cooperation on Agriculture, 1996.
170 p. ; 28 cm.**

**Technical Cooperation Agreement IICA/IDB/ATN-SF-4064-RE.
Program for the Analysis of Agricultural Policies vis-a-vis Women
Food Producers in the Andean Region, the Southern Cone and the
Caribbean.**

**1. Mujeres rurales - Suriname. 2. Tecnología agrícola - Suriname.
3. Mercadeo - Suriname. I. IICA. II. BID. III. Título**

**AGRIS
E51**

**Dewey
305.4**

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LIST OF ACRONYMS & ABBREVIATIONS

ASA:	Foundation for Rural Women
EBGS:	The Moravian Church
EU:	European Union
FAL:	Federation of Farmers and Agricultural Laborers
GOS:	Government of Suriname
IBENTAS:	Institute for the Promotion of Non-traditional Agricultural Exports
IDB:	Inter-American Development Bank
IFAD:	International Fund for Agricultural Development
IICA:	Inter-American Institute for Cooperation on Agriculture
LVV	Ministry of Agriculture, Livestock and Fisheries
MADP:	Multi-Annual Development Plan
MIAOP:	Multi-Annual Integrated Agricultural Program
NAFEDCO:	National Federation of Agricultural Cooperatives
NGOs:	Non-governmental Organizations
NVB:	National Women's Movement
PAS:	Pater Albrinck Foundation
PVU:	Progressive Women's Union
SSP:	Smallholders Support Project



PREFACE

The Program for the Analysis of Agricultural Policies vis-a-vis Women Food Producers in the Andean Region, the Southern Cone and the Caribbean, executed by the Inter-American Institute for Cooperation on Agriculture (IICA) and financed by the Inter-American Development Bank (IDB) under Technical Cooperation Agreement ATN/SF-4064-RE, is the second phase of a program which included 18 countries in Latin American and the Caribbean: Barbados, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

The first phase of the Program was implemented in 1992-1993 in six countries in Central America, under the auspices of the Council of Central American Ministers of Agriculture. The second phase was carried out by request of the First Ladies during their Summit Meeting on the Economic Advancement of Rural Women, held in Geneva, Switzerland, in February 1992.

This document is one of three reports per country which present the technical results from the four areas of Program research, as well as the recommendations and preliminary action proposals related to women food producers. The three documents are:

***Assessment and Policies.** Assesses the participation of women in the agricultural sector and their contribution as food producers on small-scale farms, and presents an analysis of the agricultural policy and program environment and its effects on rural women.*

***Technology and Marketing.** Analyses the technology utilized on small farms and by women in food production processes, and the role of women in the processing and marketing of farm food production; agricultural technology and marketing policies and programs and their effects on rural women are also examined.*

***National Summary.** Drawing from the above two reports, this document synthesizes the major findings and research results, and presents the principal policy, program, and project proposals.*

Other activities carried out under this Program included the elaboration of regional comparative documents; the formulation of policy proposals and other actions in conjunction with the ministries of agriculture, the Offices of the First Ladies, and other public and private organizations involved in agricultural and rural development; national and regional seminars to present and discuss Program recommendations; and the publishing and distribution of the final results.

I. INTRODUCTION

A. Background

The agricultural sector is of great importance for the socio-economic development of small farmers in rural areas and in the interior of Suriname. Except for certain export crops such as rice, bananas and palm oil, agriculture is mainly in the hands of smallholders with limited resources and know-how. Table I.1 gives an overview of farm sizes, the male and female farm population and the type of labor, e.g. full-time or part-time, in 1981, according to the last agricultural census.

Small-scale agricultural production systems have existed in Suriname for as long as recorded data has been available, beginning with the Amerindians, the indigenous people of the country. Amerindian women produced food and other crops in a primitive way, using only self-made manual tools, for subsistence. The men were responsible for land clearing, hunting and fishing. Not much has changed, although there are villages nowadays where food production is carried out on a commercial basis.

During the 17th and 18th centuries, middle- and large-scale farming were introduced by the Europeans, exploiting Africans as slaves. Men and women worked under the same conditions in the field. With the abolition of slavery, most of the Africans or Creoles went to the city and engaged in domestic work. The Maroons, descendants of the slaves who escaped from the plantations during slavery, remained in the interior of Suriname. Maroon women were responsible for food production, generally at the subsistence level, while the men were responsible for land clearing, hunting and fishing.

Following the abolition of slavery, East Indians and Indonesians were brought to Suriname to work on the plantations. They worked on a contract basis for five years. After their contract expired, some went back to their countries of origin. Others stayed in Suriname where they obtained a plot to live on and cultivate. The plots were not sufficient for subsistence farming, so the former contract workers had to work on the plantations to earn additional income.

The descendants of these former contract workers make up the majority of the present small-scale food producers in the rural areas of the coastal plain. They produce on a small scale but commercially.

B. Objectives, General Approach and Definitions

1. General objective of the research

The general objective of the research is to create the basis for participating governments to better orient and focus policies and actions to improve the living and working conditions of women food producers in the region. Consequently, food security and the efficiency of the agricultural sector should be achieved.

Table I.1. Overview of farm size in Suriname, 1981.

Area Range (ha)	No. of Farms	No. of Farmers		Type of labor	
		Male	Female	Full-time	Part-time
>0.5	3 471	9 462	8 746	683	8 371
0.5 - 1	1 866	5 823	4 835	328	5 399
1 - 2	3 795	12 385	10 164	631	10 753
Subtot. >2	9 132	27 670	23 745	1 642	24 505
2 - 3	2 141	6 685	5 895	472	6 199
3 - 4	1 482	4 512	4 018	354	4 186
4 - 5	1 229	4 070	3 606	356	3 860
Subtot.2-5	4 852	15 267	13 519	1 182	14 245
5 - 10	1 873	6 320	5 456	613	5 678
10 - 20	722	2 651	2 139	313	2 206
20 - 50	313	1 009	841	218	790
Subtot.5-50	2 908	9 980	8 436	1 144	8 674
50 - 100	63	217	153	40	159
100 - 200	43	116	95	42	69
200 - 500	28	75	60	19	53
500 - 1000	24	42	27	19	22
>1000	14	18	4	13	2
Subtot. >50	172	468	339	133	305
TOTAL	17 064	53 385	46 037	4 101	47 766

Source: LVV, 1981 Agricultural Census.

2. Objectives of the research components

a. Technology

Technologies used in food production, and especially those used by women, will be analyzed in terms of efficiency and appropriateness. Based on these analyses, recommendations will be made for the formulation of policies and the design of institutional systems and possible programs and projects that would afford rural women access to the best and most appropriate technology.

b. Processing and marketing

The characteristics of the processing and marketing of agricultural products, and their effect on women producers, will be identified. Emphasis will be placed on the role of women in these processes. Recommendations will be formulated to guide decision makers in policy, institutional systems and possible programs and project development.

C. Methodology

An in-depth analysis of secondary data was first carried out. Information was also gathered through interviews with officers from several ministries, non-governmental organizations (NGOs), farmers organizations and international institutions. Primary data about 150 female farmers was to be collected using a detailed questionnaire. Thirty women from each of the five main ethnic groups in Suriname (Amerindian, Maroon, Creole, East Indian and Javanese) were selected.

Due to the inapplicability of the questionnaire for gathering information from Maroon and Amerindian women, group meetings and individual interviews were conducted for this purpose. The results for the Maroons and Amerindians are presented in Appendices I and II. Among the Creole, East Indian and Javanese women, 35 interviews were done in the Coastal Plain for each group.

The districts selected were: Wanica, Saramacca and Commewijne (for Javanese and East Indian farmers), Para (for the Creoles) and Sipaliwini and Marowijne for the Maroons and Amerindians. For more background information on the regions, see Appendix III. In Sipaliwini (the area around Ladoeani, along the Suriname river) the Saramacca tribe of the Maroons was studied. In Marowijne (the Moengo area) the Aucan tribe of the Maroon community and the Cariben of the Amerindian community of Galibi were studied (See Appendix VI, map of Suriname).

Potential interviewees were identified through local departments of the Ministry of Agriculture, Livestock and Fisheries (LVV) and several agricultural organizations. Due to budget constraints

the crops studied were limited to cassava (to cover Maroon, Creole and Amerindian farmers), peanuts (to cover Javanese farmers) and vegetables (to cover East Indian farmers). Appendix IV gives a brief description of the selected crops.

D. Plan of the Document

Chapter I gives background information on the project entitled Rural Women Food Producers in Small-Scale Production Systems in Suriname: Technology and Marketing.

Chapter II demonstrates sectoral policy in regard to technology and marketing. The changes in technology policy are divided into three time periods. The Ministry of Agriculture is the main institution responsible for agriculture. Other institutions, e.g. NGOs and producers' organizations, support this sector individually.

Chapter III gives an overview of traditional and improved cultivation, processing and marketing technology applied in the Coastal Plain and in the Interior. It is differentiated into the main agricultural crops and the three selected crops or groups of crops.

In Chapter IV, the technology and instruments used on small-scale farms by women food producers are presented. The division of labor based on gender is also given. As far as research on technology is concerned, the appropriateness of technology used by women is generally not considered.

Chapter V describes the national market, marketing channels and agents.

Chapter VI gives an overview of small-scale food processing by women.

The report ends with a conclusion and recommendations.

II. SECTORAL POLICIES ON TECHNOLOGY AND MARKETING

Three separate periods can be distinguished: pre-1980, post-1980 and the structural adjustment period, which is treated separately.

The only official agricultural policy document produced in recent decades was the Multi-Annual Integrated Agricultural Development Program (MIAOP). It is the agriculture component of the Multi-Annual Development Plan (MADP), which was first drafted in 1976, following the independence of Suriname in 1975. General agricultural policy is normally included in national policy documents. Table II.1 gives an overview of policy plans during the last three decades. Technology and marketing policy is not treated separately, but is included in the general policy programs. Although women have been involved in agriculture since ancient times, there is to this day no specific agriculture, technology or marketing policy, based on their needs (IDOS, 1992).

A. Review of Technology Policy

1. Historical review before 1980

Supported by slave labor, a prosperous plantation system, with 600 plantations in 1785, was developed. It made Suriname one of the most important colonies for the Netherlands at the time. From 1870 to 1940 the number of plantations declined rapidly. Plantation products became non-competitive on the European market due to the opening of the Suez Canal. Of the then 600 plantations, only a few remain.

Following the abolition of slavery in 1863, Creoles started to farm cocoa on a small scale. It was abandoned after pests attacked this crop. Many Creoles opted for the more profitable rubber bleeding and gold-digging operations, while others migrated to the city.

When the contracts of the hired laborers from the British East Indies and the Island of Java (Indonesia) expired, some chose to remain in Suriname. The East Indian settlers turned to rainfed rice production and cattle breeding. The Javanese went into rice cultivation, as well as peanuts and pulses, on the farm land that was allocated to them (IDOS, 1992).

Small-scale production at that time was characterized by labor-intensive cultivation methods, depending on animal traction and human labor for tillage. Output was primarily for domestic consumption, but also provided small marketable surpluses.

From 1939 to 1945, Suriname became the primary supplier of bauxite for the US armaments industry. Revenues from bauxite mining enabled the colonial government to start several programs to improve living and production conditions. Rural roads and drainage systems were constructed and services introduced.

Table II.1. Sectoral policies on technology and marketing, Suriname 1975-1993.

Policies and Programs	Orientation by size of producer			Gender orientation	
	Small	Medium	Large	Women farmers	Other women
I. Research	yes	yes	yes	no	no
II. Technology	yes	yes	yes	no	no
III. Extension	yes	yes	yes	no	no
IV. Training	yes	yes	yes	no	no
V. Processing	yes	yes	yes	no	yes
VI. Marketing	yes	yes	yes	no	no
VII. Price	yes	yes	yes	no	no

After 1945 efforts were made to modernize the smallholder sector. Large investments were made in land reclamation and land settlement projects, along with other projects for irrigation systems. The government set up its own enterprises in order to boost production of crops such as rice and fruits. In addition, strong support was provided to agricultural research (IFAD, 1993).

The Republic of Suriname gained its independence from Holland in 1975, and in 1976 began implementing the MADP. The MADP was prepared and negotiated as the socio-economic complement to political independence, and was to be implemented over 10 years, or up to 15 years, if necessary (1976-1985/90).

Under the Treaty on Development Cooperation between Holland and Suriname, Holland was to provide, among other things, a grant of 2.7 billion Dutch Guilders.

The economic development strategy of the MADP was based on "economic growth with trickle-down effects," focused on "unbalanced growth" through investment. From heavy industries in the leading sectors, income and investment would trickle down to other sectors through inter-industry linkages.

The MADP provided the basis for the preparation and execution of the MIAOP in 1977 as its agrarian component. One of the major objectives was to achieve self-sufficiency in food.

The fact that less than half of the available investment funds were utilised indicates the limited ability of Suriname to implement an economic plan with large multi-sectoral components simultaneously. This experience suggests the need to concentrate on a few crucial programs for which national human resources could be developed to properly implement them (Farquarson, 1987).

During this period technology development was as follows. From the early 1960s to approximately 1980, agricultural production was modernized and mechanized. Research programs were conducted to select high-yielding varieties and develop efficient cultivation methods and mechanization. The extension service was expanded to transfer the results to the smallholder sector.

The resulting transformation of the agriculture sector was marked by the replacement of traditional labor-intensive plantations, oriented toward export markets, with smallholdings and medium-sized family farms which produced primarily for the domestic market.

About six highly-mechanized government-owned farms produced primarily for export. Most small-scale rice-producing operations were already fully mechanized around 1965. The mechanization of other types of crops followed at a slower pace. But smallholder agriculture eventually became highly mechanized, requiring great quantities of agrochemicals.

2. The situation after 1980

In February 1980, the Surinamese army staged a coup and took over the reins of government. It began to change the economic strategy of the country from the so-called "trickle-down strategy and unbalanced growth" of the MADP to one of "balanced growth." This was stated in the Manifesto of the Revolution and restated in the Government Statement and Plan of Action (POA).

The overall policies designed to achieve these objectives were, firstly, export promotion utilizing national resources, and import substitution, to a lesser extent. To develop "resource-based industries," a proportion of the investment was to be shifted away from heavy industry toward "resource-based projects" in the primary subsectors. This would result in increased national control in the short run. Development was to be realized through government- and privately-owned small- and medium-sized enterprises in the crop, livestock, fishing, forestry, non-bauxite mining and energy supply subsectors.

The POA was the official statement of the objectives and policies of the Government of Suriname (GOS) until the election of the democratic government in 1987.

In 1983 the world aluminum industry suffered a severe recession, which led to a worldwide adjustment in the structure of this industry. The change in market relations caused Suriname's income to drop by 45%. The Dutch Government, meanwhile, suspended its aid in 1982 for political reasons. Economic mismanagement aggravated the situation and the Surinamese economy started to deteriorate, including the agricultural sector.

Since the government had always been responsible for maintaining the nation's infrastructure, the lack of foreign exchange for imports of inputs made it difficult for many farmers to produce at a profitable level.

The civil war in the eastern part of the country from 1987 to 1989 made the situation worse. Infrastructure was damaged, and the palm oil sector, in particular, was severely hit. The export of vegetables and fruits overland to French Guiana disappeared.

In 1989 the second MADP for 1989-1993 was proclaimed by the democratic government. Agricultural policy was primarily based on increasing agriculture's contribution to GDP. The second objective was to increase the inflow of foreign exchange. This policy was to be implemented through:

- increased productivity, efficiency and profitability of the sector**
- diversification and improvement of the quality of the products**
- market-oriented crop selection**
- optimization of public and private services for the sector**
- availability of adequate infrastructure and communications**

- credit facilities with subsidized interest rates
- organization of farm-oriented research and education, together with an efficient extension service (MADP, 1989).

In 1993 the third MADP, for 1994-1998, was produced by the GOS. Agricultural policy focused on increasing exports, import substitution and assisting agricultural activities to increase the incomes of the poor during the structural adjustment program. Investment programs for the rehabilitation of the infrastructure should be implemented (MADP, 1993).

The first step will be to halt the deterioration of the agriculture sector, during the so-called "recovery period." In this period, emphasis will be placed on stabilizing and rehabilitating existing production capacity and infrastructure. Priority should be given to export-oriented crops with a guaranteed market. In the so-called "growing phase," expansion investments with financing facilities should be given priority. The development program for the agriculture sector is focused on rice, bananas, palm oil, vegetables and fruits.

Attention will be paid to research, extension, education and a realistic price policy, based on real market prices.

For the fruit and vegetables subsector, the production conditions of small farmers will be improved.

3. Technology policy after the structural adjustment program

The prevailing agricultural development policy is still based on concepts of significant public involvement in the agricultural sector, reflected by a national price policy, and production by means of a number of state-owned enterprises. The recent decline in the economy gave rise to some changes in this policy. However, for the time being it focuses on removing some fundamental bottlenecks in the agricultural sector:

- the lack of farm inputs and farm implements
- the lack of adequate support services, such as agricultural research, extension and marketing
- the general deterioration of infrastructural works (mostly irrigation and drainage systems).

More fundamental policy changes are envisaged in the framework of the structural adjustment program for the Surinamese economy. The agricultural sector's declining capacity to absorb labor is supposed to be reversed by facilitating access to agricultural land by individual producers. Simultaneously, many state-owned enterprises might be privatized (of the 13 surveyed in 1990, only one appeared to be profitable). The price policy was adjusted to such an extent that its major aim will no longer be the protection of urban consumers (object price measures), but only those urban consumers who really need some support (subject price measures), through the social security system.

The investment program of the structural adjustment program adopted by the Government of Suriname in November 1992 gives priority to the maintenance and rehabilitation of some agricultural infrastructural works. However, it is not very explicit in regard to overall policy for the agricultural sector. The first goal is a return to previous production levels, and then to expand activity and increase exports.

Preparations are under way for a mission funded by the Dutch Government to assist Suriname in determining a new framework for its agricultural policy and strategy.

Agricultural activities have had a very low status in Surinamese society for decades. White-collar employment was preferred by the majority of the population. This attitude is gradually changing since many urban families (mainly civil servants) have started to complement their income by cultivating land for either their own consumption or for cash sales. Under the structural adjustment program, the smallholder agricultural sector is supposed to grow by 4% per annum, absorbing an additional 2.7% of the labor force each year.

Based on the LVV's assessment of the need for farm implements, licenses are granted to importers by the Ministry of Trade and Industry. Depending on the financial situation of the government, and now less and less frequently, implements are imported and distributed to registered farmers at reasonable prices.

In this context, the IFAD's Suriname Smallholders Project (SSP) should be mentioned (see paragraph II.C.4.a).

As government involvement is gradually being phased out and inputs are becoming more expensive, some smallholders at the bottom end are shifting their cultivation practices towards production for on-farm consumption only. This means that there is no longer any benefit to be gained from being close to the market and paying rent to the owner of the plot. Some of these producers have moved to the interior to find unoccupied and non-registered land. There they can cultivate without paying rent.

An increasing number of civil servants are resigning to become part-time agricultural producers and more will leave under the SAP. Eventually it is expected they will devote their time entirely to agriculture. Most of these producers receive some financial incentives, hence they have some funds to invest in their plots. These smallholders produce almost exclusively for the market and are the main competitors of the traditional smallholder.

According to the Bureau of Agricultural Administration, the country is divided into four Agricultural Regions. Each region consists of one or more sub-departments. The LVV is supposed to be in direct contact with the farmers to inform them about new technologies and to find adequate solutions to their practical problems through the research service.

In 1990 a joint IICA/Dutch government mission conducted a study for the purpose of upgrading and reorganizing the agricultural research, extension, education and training system. The

recommendations called for a complete restructuring of national agricultural institutions and the development of a national agricultural council. The council would develop, among other things, a policy for integrated research and extension programs to cater to the development needs in terms of export promotion and import substitution (IICA, 1990).

There is no written policy on women farmers. The head of the extension department is aware of the position of women and the unwritten policy is for at least 30% of the participants in training programs to be women.

B. Review of Marketing Policy

Suriname has a long tradition of fixing maximum consumer prices for a number of basic foods. In general, prices have been set at levels favoring the short-term interests of the consumer, to the detriment of producers and local production capacity. The production of sugar and milk are examples: sugar production has ceased entirely, and milk production has suffered from long periods of below-production-cost prices (see Table II.2).

Even under normal conditions, with an adequate and affordable supply of inputs and well managed government-operated agricultural enterprises, it is probably fair to say that Suriname's production of most agricultural commodities needs some degree of protection against artificially low world market prices. The question is whether this is to be done through market forces, resulting in higher consumer prices, or through direct government subsidy. The government has traditionally favored the latter approach.

In addition to the commodities produced by public enterprises, the government intervenes in the marketing of milk and rice, and some basic foods. All milk produced for sale is required to be delivered to the country's sole dairy plant, the Melkcentrale. But, due to the price policy that consistently set the farm-gate price below the actual cost of production, a part of the output is now illegally sold directly to consumers.

Marketing of vegetables, cassava and peanuts is in hands of intermediaries or the producers themselves, and there is no price regulation by the government.

The LVV recommends a review of the internal marketing structure for agricultural products. Greater attention should be paid to the storage, transport, processing and marketing of agricultural crops and better post-harvest handling facilities for fresh agricultural products should be created.

In a study published in 1986, the Irish Export Board stated that:

The fruit and vegetable sector in Suriname has considerable growth potential. In general terms, soil and climatic conditions are favorable. Large unused areas of potentially arable land still exist and the country can lay claim to some, if not extensive, expertise.

The corollary of this is that under-utilisation is a characteristic of the current situation. It is a small-scale, unprogrammed and unplanned industry. It is not supported at production, post-harvest or marketing promotion levels (Irish Export Board, 1986).

Many of the prerequisites necessary for the formation and maintenance of a successful and continuing export industry do not currently exist in Suriname. These must be resolved before any growth in exports can be expected. Some of the problems constraining exports were identified to be the continuity of supply, quality and pricing.

The most important export products are rice, bananas and small amounts of vegetables. Other export products such as palm oil and citrus fruits are now negligible (see Table II.3).

Among the most important import products are milk, dairy products, and various grains, including wheat and maize. Significant amounts of fresh vegetables are imported, such as onions and potatoes. Other imported products are processed vegetables and fruits, tobacco, coffee, cocoa and sugar (see Table II.4).

C. Institutional Structure and Current Programs

Most of the government's involvement in agriculture falls under the aegis of the LVV. This ministry is responsible for general policy formulation and also for implementation of most specific policies and special projects. Due to an exodus of qualified staff over the past five-ten years, the ministry has not been able to effectively carry out several of its functions; research, extension, education, veterinary services and policy formulation, in particular. Figure II.1 gives the institutional structure of the LVV. Only a few non-governmental organizations are supporting this sector (Bishay and Bishay, 1987).

Some key areas in agriculture fall under the responsibility of other ministries. For example, pricing policy belongs to the Ministry of Trade and Industry, agricultural credit is shared with the Ministry of Finance, land allocation is the responsibility of the Ministry of Natural Resources, and public investment in agriculture is channelled through the Ministry of Planning and Development Cooperation.

Table II.2. Producer prices of agriculture products.

Description	Unit	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Annual crops														
Padi (14% moist.)	ct/kg	24.7	23.3	24.4	24.5	24.8	25	25	29	30	31	50	71	140
Meliss	ct/kg	90	105	150	150	106	100	91	100	104	123	225	270	290
Tubers	ct/kg	110	105	95	95	88	100	128	114	115	163	306	255	265
Cassava	ct/kg						56	87	81	100	108	185	300	347
Peanuts	ct/kg	327	365	350	400	315	360	385	620	795	913	1095	1060	1635
Urdi	ct/kg						315	381	414	425	636	1010	1035	1835
Other Pulses	ct/kg	240	245	230	270	325	325	348	237	408	490	873	963	1575
Cabbage	ct/kg	130	86	80	150	93	135	192	251	255	375	470	475	865
Tomatoes	ct/kg	150	215	203	179	285	285	345	453	366	378	590	530	955
Other vegetables	ct/kg	150	116	100	120	96	120	129	171	197	196	305	260	564
Watermelon	ct/kg	na	na	na	na	na	100	100	130	137	148	145	195	235
Biennial crops														
Sugar	ct/kg	58	60	60	60	60	65	75	80	80	-	-	-	-
Alcohol	l	51	50	50	50	50	60	66	65	65	-	-	-	-
Bananas	ct/kg	27	30	32	35	45	43	46	53	53	56	60	55	55
Plantains	ct/kg	100	82	75	65	180	44	93	92	100	103	175	150	230
Other	ct/kg	240	213	175	175	180	165	155	200	174	203	230	260	285
Perennial crops														
Cocoa	ct/kg	260	260	260	260	260	325	355	440	500	948	1110	1324	1750
Coffee	ct/kg	1080	900	650	650	650	650	650	725	1000	1200	1500	1500	2100
Palm oil	l	100	130	130	130	285	280	280	380	450	450	450	450	-
Oranges	ct/at	13	13	14	36	48	57	67	70	81	80	115	148	214
Grape fruits	ct/at	13	13	13	26	20	30	36	40	61	93	155	116	200
Other citrus	ct/at	10	10	12	76.2	63.5	74	81	86	103	103	147	146	175
Cocanuts	ct/at	15	15	15	15	13	13	18	90	82	82	115	120	120
Musbandry products														
Beef	ct/kg	550	532	550	550	590	600	1000	1200	2000	1475	1500	1500	2500
Porkmeat	ct/kg	320	350	350	350	450	450	500	950	1500	1200	1300	1320	2410
Sheep and goats m	ct/kg	725	725	750	1100	1125	1125	1750	2000	3000	2500	2500	3000	4000
Chicken meat	ct/kg	300	300	325	325	350	360	500	720	1000	1100	1000	1250	1950
Milk	ct/lt	45	70	70	70	70	70	80	90	95	95	110	110	150
Eggs	ct/at	13	13	13	13	15	16	25	38	34	42	55	60	125

Sources: Min. of Agriculture.

- Note : 1) 1 ton kg = ca. 4 pcs.
 2) 1 kg grapefruits = ca. 2 pcs.
 3) 1 kg other citrus = ca. 6.35 pcs.
 4) 1 kg cocanuts = ca. 1 pcs.

Table II.3 Exports of main agricultural products (Value in mln SP.) (1980 - 1991).

Product	Unit	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991**
Rice	Value	78.7	74.7	70.0	65.3	74.3	84.0	58.6	70.5	71.1	56.7	45.4	37.0
	Quantity 1000	104.1	110.1	155.9	115.1	119.2	155.2	102.0	115.7	85.8	80.7	64.9	50.0
	Price	0.76	0.68	0.45	0.57	0.62	0.54	0.57	0.61	0.61	0.83	0.70	0.74
Bananas	Value	10.3	11.9	13.3	13.6	16.4	18.3	22.1	17.7	20.2	18.2	18.4	16.2
	Quantity 1000	33.4	34.8	37.6	32.3	35.2	37.6	40.1	34.0	35.6	28.8	28.3	23.8
	Price	0.31	0.34	0.35	0.42	0.47	0.49	0.55	0.52	0.52	0.63	0.65	0.68
Shrimps	Value	19.2	22.2	21.1	25.7	19.2	38.6	80.2	79.4	55.8	57.1	63.7	42.5
	Quantity 1000	3110.5	4072.3	3272.7	4132.4	3207.4	2827.6	4,118.4	3,979.2	721.1	2,489.7	3,312.9	2,377.4
	Price	0.006	0.005	0.006	0.006	0.006	0.014	0.019	0.020	0.021	0.023	0.019	0.018
Wood & Wood pr.	Value	20.9	18.7	20.5	11.5	8.6	4	.9	3.3	5.6	4.3	1.2	8.6
	Quantity 1000	59.1	52.1	47.1	32.4	23.2	17.2	14.0	7.5	15.4	12.0	2.2	1.4
	Price	0.354	0.359	0.435	0.355	0.371	0.372	0.350	0.440	0.364	0.358	0.545	6.143
Fish	Value	0.5	0.6	1.4	2.0	2.6	1.4	1.4	2.4	2.4	2.4	2.3	1
	Quantity 1000	235.9	226.5	417.3	489.3	717.5	461.5	416.3	790.3	693.0	893.4	1,013.3	
	Price	0.002	0.003	0.003	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Vegetable	Value	1.7	1.4	1.3	1.9	1.5	1.2	1.8	1.4	1.8	1.5	1.5	1.5
	Quantity 1000	1278.6	878.9	712.4	759.2	732.3	729.1	208.4	1,077.0	1,312.8	1,906.8	2,181.2	
	Price	0.001	0.002	0.002	0.003	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001

** Provisional Figures.

Source: General Bureau of Statistics.

Table II.4. Imports of main agricultural products and inputs, 1984-91#.

Products	Unit	1981	1982	1983	1984	1985	1986	1987
1988								
1989								
1990*								
Meat & Meat Products	volume	1,167	1,141	999	208	371	65	150
	value	2,511	2,375	2,760	641	1,435	279	772
Milk & Dairy Products	volume	2,552	2,380	2,134	2,302	1,640	2,761	639
	value	6,201	5,817	5,402	6,507	4,408	8,571	2,562
Vegetables & Root Crops	volume	11,061	6,987	8,565	4,086	7,000	6,654	4,435
	value	7,331	4,541	5,320	2,949	5,723	5,602	3,692
Fruits & Pulps	volume	128	133	91	90	168	133	48
	value	325	344	273	261	528	486	236
Coffee, Tea & Spices	volume	404	436	281	193	238	210	166
	value	1,589	1,759	916	998	1,176	876	711
Cocoa Products	volume	112	38	34	131	107	157	102
	value	644	235	206	729	741	728	768
Grains (wheat, corn, sorg)	volume	45,355	33,741	33,707	29,941	42,186	51,596	16,346
	value	16,532	11,496	9,940	7,469	12,271	17,920	5,428
Corn Meal	volume	3,533	2,053	7,741	1,115	762	742	503
	value	3,002	1,699	3,221	1,085	982	919	700
Sugar & Sugar Products	volume	6,623	10,087	5,534	10,216	7,590	11,858	6,555
	value	4,709	5,263	2,991	5,692	4,300	8,374	6,010
Prepared Vegetables & Fruit Products	volume	658	491	138	318	582	387	380
	value	1,271	750	591	823	1,659	1,190	694
Tobacco	volume	511	546	522	264	504	439	343
	value	4,562	4,072	4,398	3,345	3,365	2,480	2,149
Fertilizer	volume	21,983	25,944	26,015	24,077	14,708	14,194	8,572
	value	8,372	10,298	8,718	8,083	5,909	6,837	2,916
Machines	value	12,400	16,097	13,297	13,122	16,258	22,849	

Volume in Mt. and Value in SF '000.

* Estimates for first six months.

Source: LVV.

At the international level, the following institutions and countries are involved in agricultural activities: the International Fund for Agricultural Development (IFAD), the Inter-American Institute for Cooperation on Agriculture (IICA), the European Union (EU), the Belgian Embassy, the Dutch Embassy, and the Inter-American Development Bank (IDB). The transfer institutions and programs for marketing and technology are summarized in Table II.5.

1. The Ministry of Agriculture, Livestock and Fisheries (LVV)

a. Agricultural research

At present no coordinated national agricultural research program has been devised. There are various long-term research plans but no systematic short-term research program is applied.

Agricultural research currently takes place in more than 100 locations in Suriname. This results in very high costs and an inappropriate use of scarce resources. Figure II.2 sets out the institutional structure of the research division of the LVV.

Research is entrusted to five institutions, of which the largest is the Agricultural Experimental Station of the Ministry, the Foundation for Agricultural Research, with a central station in Paramaribo, and three sub-stations, one in Brokopondo for oil palm, coconut and citrus fruits, one near Paramaribo for livestock, and the third in Nickerie, for rice. The department now has eight researchers, compared with 40 in 1968. Promising research by CELOS (Centre for Agricultural Research, attached to the University) on rainfed crops in Tibiti and the Savannah belt has been discontinued because of lack of staff; the same applies to STIPRIS (Foundation for Experimental Farms) in Tijgerkreek (Saramacca), Santo Boma and Tibiti. Research by the SML rice estate in Wageningen, which enjoyed a high reputation, has also virtually ceased (IFAD, 1993).

b. Agricultural extension services

Agricultural extension started following agricultural research in Suriname around 1910. Real agricultural extension work in the modern sense started around 1950, within the framework of an agreement between the American and the Dutch governments to develop a rural development program in Suriname. This program lasted from 1952 until 1962, and the use of essentially American extension approaches produced moderate results.

Following the conclusion of this program, which meant, among other things, the end of external funding for extension, the program deteriorated rapidly. A boost in extension was experienced in the period 1969-1974, when the Dutch government funded and assisted in developing a so-called integrated program of farm enterprise management. Since then the development of extension has stagnated. Some attempts, at best organizational in nature, have been made by the Surinamese Government but with no significant results at all.

Table II.5 Marketing and technology transfer institutions and programs, Suriname, 1994.

Institutions, Programs & Projects	Types of Programs										Orientation		
	Welfare	Reproductive Activities	Productive Activities				Marketing	Others	Rural Women	Urban Women			
			Animal Husbandry	Agriculture									
			Pre harvest	Post Harvest									
I. Public Institutions	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Min. of Agricult. Technology	no	yes	yes	no	no	no	no	no	no	no	no	no	no
Min. of Trade and Industry, Prices	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
II. NGOs EBGS, PAS	no	no	no	no	no	no	no	no	no	no	no	no	no
III. International Agencies	no	no	no	no	no	no	no	no	no	no	no	no	no
IICA	no	no	no	no	no	no	no	no	no	no	no	no	no
IFAD	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
IV. Farmers Organizations	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
FAL, NAFEDCO													

At this moment there is practically no organized extension service in existence. This is a result, among other things, of underfunding, a lack of communications equipment and transportation, unsuitable human resource management, a lack of appropriate research results at the disposal of extension, no extension philosophy and methodologies, a lack of policy direction, little motivation for field and staff extension personnel and, last but not least, virtually no structural and appropriate communication between research, extension and the farming community.

Field extension officers usually work part-time. They devote most of their working time to input distribution and the gathering of statistical data. Only about 15% of the extension workers' activities are educational in nature. Around 75% of their time is spent on non-educational activities and 10% on staff meetings and other such support activities.

Extension is being planned, but because of the lack of structural communication links among field extension, research and the farming community, there have been few results so far.

Agricultural extension is currently organized on three levels. At the national level, the Deputy Director of Agriculture is responsible for all the agricultural extension work conducted by the Ministry. Under him, at the national level, is the Agricultural Information Unit, whose task is to plan, monitor and evaluate field programs. This unit consists of:

- the **Agricultural Extension Section**, which provides training and support to field extension staff in methods of communication and technology transfer, as well as in identifying problems in rural areas
- the **Agricultural Education Unit**, which plans and organizes appropriate training activities for field extension staff and farmers
- the **Home Economics/4H sections**, which produces training materials and provides training for field staff in home economics and youth work, and
- the **Sociological Research Section**, which conducts sociological studies in the rural environment and the institutional settings of extension. It also advises on the implications of the findings of such studies.

At the regional level, the country is divided into three regions, each headed by a regional coordinator with responsibility for all agricultural activities in the region. The coordinator reports to the Deputy Director of Agriculture.

Furthermore, a region is divided into several "*resorts*" and each "*resort*" into several "*rayons*."

The extension unit consists of:

- The **Eastern Region**, which comprises the districts of Marowijne and Commewijne. This region consists of two *resorts*, which are located in Moengo and Nieuw Amsterdam.

- The Central Region, which comprises the districts of Paramaribo, Wanica, Para, Brokopondo and Saramacca. This region consists of six *resorts* located in Kwatta, Houttuin, Santo Boma, Lelydorp, Brokopondo and Groningen.
- The Western Region, which comprises the districts of Nickerie and Coronie. This region consists of three *resorts* located in Henar Polder, Clara Polder and Totness.

Each *resort* has a coordinator working out of the regional office. Each *resort* consists of several *rayons*, headed by *rayon* leaders.

The extension staff is composed of approximately 118 field extension officers/assistants. The extension officers/assistants are supported by four extension specialists. Each of these *resorts* forms a unit, from which extension officers maintain close relations between farmers and the LVV. The officers support farmers with technical advice. Figure II.3 reflects the institutional structure of the extension sub-department of the LVV.

In the 1960s and 1970s, the extension service was in full operation. For example, in 1968 roughly 10 972 visits were made, 3487 farmers meetings were held, and 2372 office visits for technical support were made by farmers.

As stated earlier, this impressive service has changed drastically. Today extension work is seriously limited because officers also have other duties besides extension. Other limiting factors are the small operating budget, lack of trained personnel, and poor communication. Because of the declining service, farmers complain that little agricultural support is available and that problems at the farm level do not receive attention.

As a result, private organizations have started their own extension units. Some of the NGOs active in this field, especially in the interior, are the EBGs (the Moravian Church) and the PAS (Pater Albrinck Foundation). Sometimes they also provide planting material. FAL (Federation of Farmers and Agricultural Laborers) is operating in the fruit and vegetable sector.

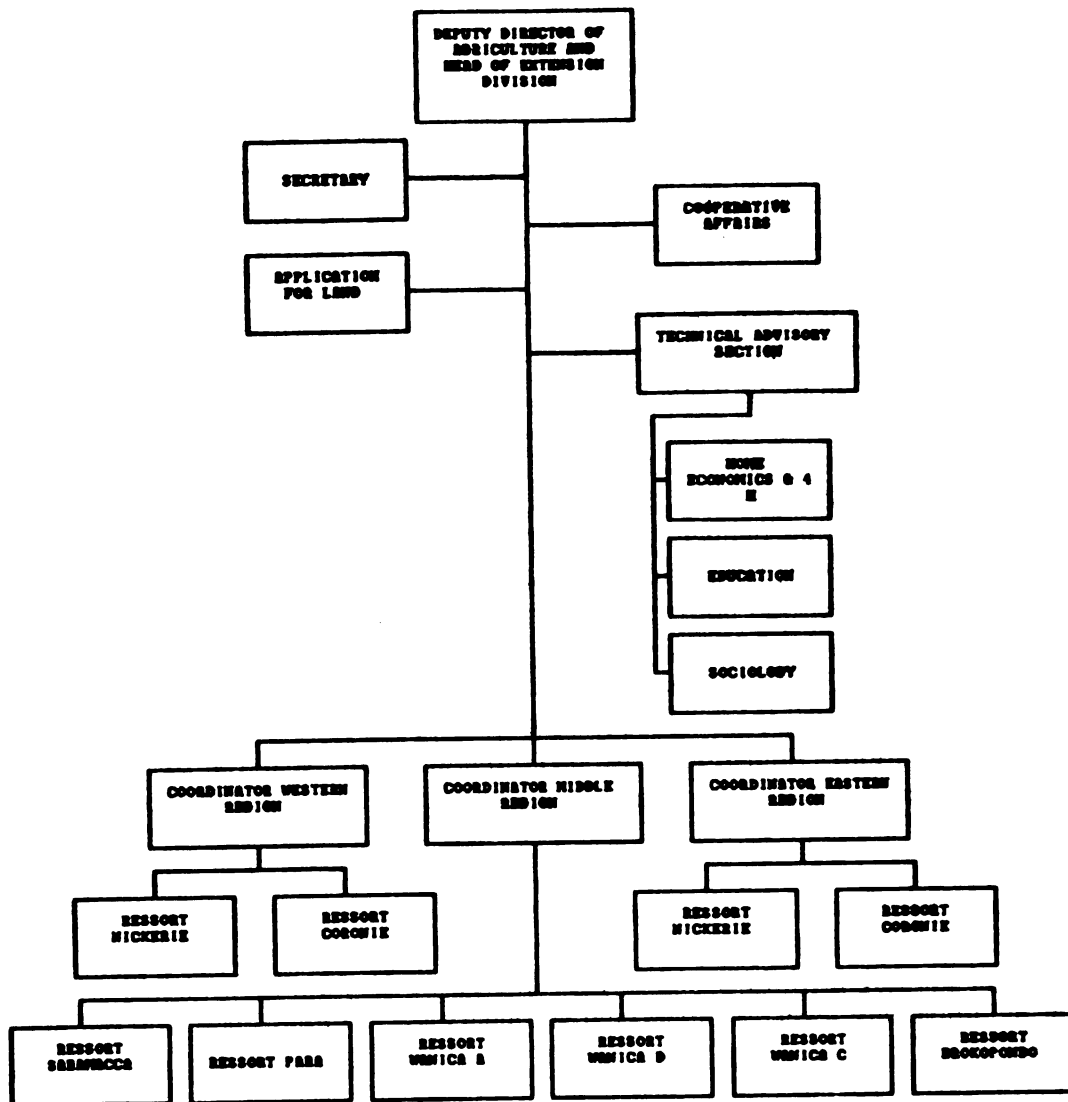
c. Agricultural education and training

Some agricultural education in Suriname is provided at the Higher Technical School (Natin) level, and at the university level. Primary and secondary agricultural schools do not exist.

d. Agricultural inputs

Material inputs can be obtained in most areas from small and medium-sized stores specializing in the sale of these products, and from similar stores operated by local farmers' cooperatives. Due to the lack of foreign exchange, prices of inputs are very high, because it is only available on the parallel exchange-rate market.

Figure II.3. Organizational chart of extension services, LVV



SOURCE: IICA, 1990

e. Agricultural credits

Credit for investment and financing of operations is obtained from private banks and the government-owned Agricultural Bank. The latter has independent branches operating in most production areas.

Current programs on women in the agricultural sector are:

- The LVV: chutney project for the Charlesburg suburb near the capital. The purpose is to produce high-quality chutney from several fruits, depending on their seasonal availability, for local and export markets.
- A prerequisite of the IFAD project Support to Smallholders is to include in the target group of 5000 farmers a significant number of women farmers. Under this project small farmers will have the opportunity to get agricultural inputs through a special credit program. The extension department of the LVV will be provided with personnel and transportation to assist in this project.

2. Non-governmental Organizations (NGOs)

Agricultural NGOs operate in both the Coastal Plain and the Interior. For example, the Moravian Church (EBGS) and the Pater Albrinck Foundation (PAS) have been providing services among the Amerindian and Maroon population in the Interior since the late Sixties. Recently the National Women's Movement (NVB) started agricultural activities for Maroon women. The other NGOs mentioned are operating in the coastal plain.

a. The Moravian Church (EBGS)

The EBGS has been active in the interior since 1975, originally for missionary purposes. Subsequently, health and education were added. Also under its auspices is the Center for Community Development, set up in 1988. It primarily coordinates the activities of the personnel of the Foundation in community development and support to local initiatives of an agricultural nature.

Two of its agricultural centres in the interior were destroyed during the civil war in 1986-1987 and are currently in process of reconstruction. These centres were staffed by agricultural extension agents who tried to serve the producers, predominantly women, in villages within their reach.

Before the war, the EBGS provided heavily subsidized agricultural inputs and traditional implements, chain saws, pesticides and fertilizers, mostly collected through donations. The institute is not involved in the marketing of agricultural produce or the provision of seeds.

The Moravian Church has a Women's League. The League has a chapter in each village where there is a Moravian congregation. They are in the process of educating groups of women producers, adjusting their own objectives "from prayer to production." A few projects for (group) production and processing of peanuts have recently been started in the area of Lake Brokopondo.

b. The Pater Albrinck Foundation (PAS)

The PAS was established in 1968 to facilitate the development of Maroon and Amerindian society. The target groups participate intensively in decision making and implementation. The PAS has a subdivision called Agricultural Promotion, whose task is to promote, implement and accompany agricultural activities through education, extension, marketing and processing. The PAS presently has 14 registered cooperatives, predominantly in the Maroon community. The cooperatives distribute agricultural implements. Four cooperatives currently operate agricultural shops, which are provisioned regularly.

c. The National Women's Movement (NVB)

The NVB was founded in 1982 and became a legal entity in 1986. It organizes Surinamese women, irrespective of their race or creed, to pursue their interests. Part of the NVB's program is to develop activities aimed at furthering the interests of women and to bring about a change in their status. Another part is to promote and maintain good joint-action relations with women's organizations inside and outside of Suriname.

In addition to activities in the fields of health, garment production, education and training, community works and others, the NVB also started agricultural activities.

A fruit processing project initiated in 1990 provides jobs and income to women. A mini-project in which women are engaged in cultivating and supplying the necessary fruits was started in 1988. A larger project for the growing of fruit trees by women in the Commewijne district, financed by the Belgian Government, is being implemented. Together with the Women's League of the Moravian Church, the NVB also started a project for the production of pulses by women in the interior. Another project of the NVB which is also being implemented is the technical assistance project for women in Paramaribo to promote back-yard horticulture. This project is financed by Lions Suriname.

d. The Progressive Women's Union (PVU)

The PVU was established in 1974. Its main thrust is to create activities which are in the interest of women. At present it is seeking to collate a data base on women in agriculture and is working on a small project to assist women in agriculture in the Coronie District.

e. The Foundation for Rural Women (ASA)

The ASA was founded in 1988. At present the ASA is conducting a pilot research project on the role and position of female farmers in the Jarikaba area, in the district of Saramacca. The objective is to identify the problems, needs and opportunities of rural women, and to elaborate models that provide solutions.

f. The Foundation for Agrarian Women in Commewijne

This foundation was established in 1993 as an initiative of the PVU, with the aim of increasing women's participation and productivity, improving efficiency in the agricultural sector and implementing the processing of agricultural products, starting in the district of Commewijne.

g. The NGO Forum

At a national conference of NGOs held in 1991, 37 such organizations decided to found the National NGO Forum for development and to combat poverty.

h. The Institute for the Promotion of Non-traditional Agricultural Exports (IBENTAS)

IBENTAS was established in 1993 to promote the development of non-traditional subsectors such as orchids, exotic flowers, decorative and potted flowers, vegetable and fruit culture.

3. Producers' Organizations

a. The Federation of Farmers and Agricultural Laborers (FAL)

The FAL is an umbrella organization. It arose out of a political party with socialist leanings. The FAL started general activities in 1974 to improve the living and production conditions of small farmers and their families, and of the rural population in general. It now groups together a number of farm labor unions and some cooperatives and grassroots producers' organizations, with a total membership of 1500.

The aims of the FAL are to:

- distribute farm implements, pesticides and fertilizers to cooperatives
- export agricultural products, especially to Holland
- process agricultural products, especially fruits, vegetables, tubers and rice

- rent out farm implements and machinery to members of the cooperatives (in preparation)
- provide agricultural extension services to members of the cooperatives
- provide small loans to members of the cooperatives.

b. The National Federation of Agricultural Cooperatives (NAFEDCO)

Like the FAL, NAFEDCO is an umbrella organization. Established in 1990, at present it groups together nine cooperatives with a total membership of around 3000. The members are producers of fruits, vegetables and peanuts. Approximately 60% are part-time producers.

The aims of NAFEDCO are to:

- distribute farm implements, fertilizers and pesticides at reasonable prices to the member cooperatives
- coach members of the cooperatives in management of the cooperative (training sessions are held at least once a year)
- set up a central, computerized administrative service for the member cooperatives
- rent out farm machinery and implements to members of the cooperatives
- process agricultural products, especially fruits and vegetables
- export agricultural products
- provide extension services to individual members of the cooperatives on agronomic and economic aspects of crop cultivation.

4. International Organizations/Countries

a. The International Fund for Agricultural Development (IFAD)

A support program for small farmers of around US\$7.5 million was recently approved by IFAD. This program includes 5500 farmers in the coastal plain and the interior. The purpose of the program is to increase the production and incomes of these farmers and create employment by means of a program of small loans. This project includes the production of vegetables, fruits, peanuts, peas, root crops, milk and honey, and fish and shrimps produced on a small scale.

IFAD will finance 45% as a loan, and the Dutch government 55%, out of the Treaty Funds. The project will be implemented and monitored by the Agricultural Bank and supported by the LVV's extension department.

It is an IFAD requisite that small women farmers should be included as beneficiaries in this program and some consideration is given to the participation of women in the above-mentioned subsectors (MADP, 1993).

b. The Inter-American Development Bank (IDB)

At present, the IICA/IDB Rural Women Food Producers in Small-Scale Production Systems in Suriname is the only project being implemented with IDB funding. Some other agricultural projects in the pipeline will target fruit production, agricultural health services, banana research, etc.

c. The Inter-American Institute for Cooperation on Agriculture (IICA)

IICA has several projects in the pipeline. These are:

- Support for the Development of Livestock Production in Suriname and Guyana, concentrating on increasing milk production among small farmers.
- Support for the Development of Fruit and Vegetable Production in Suriname as part of a regional fruit and vegetable project. Surveys of the fruit and vegetable subsector have been carried out to serve as input for the elaboration of externally funded projects.
- A feasibility study to upgrade agricultural health services in Suriname to be funded by the IDB.
- The project From Hunting to Sustainable Animal Production in the Amazon - Suriname is focused on providing protein to people living in the interior.
- Under the Peanut Marketing and Production project, farmers in the interior will be assisted in increasing their peanut production and marketing their produce.
- Together with the Moravian Church, IICA is working on a proposal to introduce agriculture as an academic subject in schools in the interior.
- Together with the Suriname Agricultural Bank, IICA will carry out the training component for extension officers of the IFAD Smallholders Support Project.
- Several projects are being prepared or implemented in the livestock subsector.

None of these projects focus specifically on women. The participation of women in projects focusing on the interior is assured, because nearly all farmers in the interior are women.

d. The European Union (EU)

The EU Representation in Suriname does not have a special policy focused on women at the moment. Most of the current projects are related to infrastructure. The intention exists to start

women's projects, e.g. an education project, which is at the pre-feasibility stage. Assistance of local women's organizations is required.

e. The Belgian Embassy

The Belgian Embassy is executing about 25 agricultural and non-agricultural projects focused on women. The policy is to promote techniques that will improve the living conditions of women and to finance small equipment such as sewing machines, tools for fishing, and farming.

f. The Dutch Embassy

The policy of the Dutch Embassy is to include as many women as possible in their projects, even though the projects are not specifically for women. Under the Speerpunt Program, projects are focused on research and the training of women in all possible subjects.

The Embassy financed the NVB's fruit cultivation project in the District of Commewijne. Through the PAS, several activities are financed in the interior. A rice mill will be established soon in the interior, in the District of Brokopondo.

III. TRADITIONAL TECHNOLOGY AND THE SUPPLY OF IMPROVED TECHNOLOGY

Until the 1950s traditional technologies were applied both in the coastal plain and the interior, using manual tools and self-made planting material. In addition manure and animal traction were used in the coastal plain.

Modern agricultural technology has not yet been adopted in the interior. Agricultural activities are still performed traditionally. All work is done manually and no chemicals are used. In a few villages, the LVV and some NGOs have introduced rice and cassava mills.

In the coastal plain, agro-chemicals and high-yielding crop varieties are used. This development can be traced back to the early 1950s, when the "green revolution" in rice production started. Since then there has been a tendency toward ever-increasing amounts of applied agro-chemicals, resulting in improved production. However, there is evidence of negative effects for both the environment and public health.

Table III.1 gives an overview of the improved technology used in the coastal plain and in the interior.

By far the largest amount of pesticides and fertilizers are used in rice (approx. 80%) and banana production, sprayed by aircraft.

Supporting agencies have not been able to develop other appropriate technology for small farmers. The LVV's extension unit is not able to transfer improved technology to farmers when available. Some NGOs are introducing farmers to new technology, e.g. the FAL, the EBGs and the PAS.

Rice, bananas and palm oil are the traditional agricultural products of Suriname, produced by large government-owned enterprises and, in the case of rice, also by private enterprises, using modern technology.

Generally speaking, all other agricultural products are produced on a small scale.

A. Production Technology

1. Crops produced on a large scale

a. Rice

Rice is the most important agricultural product exported by Suriname. It is produced on small, medium-sized and large farms, varying from 6 ha to 10 000 ha.

Table III.1. An overview of improved technology in Suriname.

Indicator	Improved technology	Technology	
		Coastal Plain	Interior
1. planting material	purchased seed	I	T
2. land preparation	mechanized	I	T
3. weed control	herbicide + back-sprayer	I+T	T
4. pest and disease control	pesticides	I	T
5. fertilizing	anorganic	I	T
6. production systems	mechanized	I+T	T
7. post-harvest, handling and storage	washing, sorting, packing and cold storage	I+T	T
8. processing	mechanized	I+T	T

I = Improved T = Traditional

Until the 1970s rice was cultivated traditionally, using traditional varieties. These varieties did not require chemicals. Land preparation was done using animal traction. Furthermore, all work, from planting to weed control to harvesting, was done manually. Animal traction was sometimes used in post-harvesting activities. Drying of the paddy was done manually, in the sun. Only milling was mechanized. In this period women were involved in production activities, ranging from planting to processing.

With the establishment of the Foundation for the Development of Mechanized Agriculture (SML), rice production changed from small-scale manual operations to totally mechanized large-scale enterprises.

Rice production is mechanized to varying degrees, with complete mechanization on large farms, but with several operations conducted manually on smaller farms. On nearly all farms land preparation and harvesting are done mechanically. On the larger farms, sowing, fertilization and spraying operations are carried out by aircraft, but many smallholders perform these operations manually.

High-yielding varieties demand considerable amounts of agro-chemicals. Post-harvesting activities, e.g. drying and milling, are totally mechanized. No women are involved in mechanized rice production other than in administrative jobs. Small-scale rice production is again being promoted by the FAL, since this requires fewer or no chemicals. The latter are scarce on the local market, since the country suffers a lack of foreign exchange.

b. Bananas

Bananas are the second most important crop exported by Suriname. Production is partly mechanized, with some operations still being done manually. Women make up 14% of the full-time, and 45% of the part-time, labor force. They mostly clean the young bunches of bananas, using a wooden trap. In the post harvesting operations they pack bananas for export. In Suriname bananas are not grown by smallholders, as in the rest of the Caribbean. They are grown on a government-owned estate, Surland N.V., with an area of 1750 ha, located in the district of Saramacca, and in Nickerie.

Banana cultivation calls for considerable amounts of agro-chemicals.

c. Palm oil

Palm oil is the third crop produced on a large scale in Suriname. It is cultivated on three government-owned estates located in the central and eastern parts of the country at Victoria, Phedra and Patamacca. The total cultivated area is 3840 ha. At Victoria some smallholders are involved in the production of palm oil. Women are not involved in the production of palm oil (Mollering, 1991; IDOS, 1992; IFAD, 1993).

2. Crops produced on a small scale

A global view of existing production, processing and marketing technology is presented in the following section. The role of women and the technology used in the production of three selected crops or groups of crops, cassava, peanuts and vegetables, are highlighted.

Except for the production of rice, bananas, palm oil and some fruits (e.g. citrus fruits), all other food products are produced by small farmers. Only land preparation is sometimes mechanized on the small farms. Planting, harvesting and processing are mostly done manually. In general, the following tools are used by the smallholder: machetes, axes, shovels, spades and forks, and sometimes back-sprayers and water pumps.

With regard to the technology used in the small-scale production systems, two regions can be identified in Suriname -the coastal plain and the interior.

a. The coastal plain

Small farmers in the coastal plain commonly use high-quality imported planting material, and agro-chemicals. Nowadays, these are not always available at reasonable prices. Farmers have therefore started producing their own planting material, while they partly replace fertilizers with organic material (manure).

Soil preparation is done by men, often using the Kubota tractor, and sometimes manually. Women are mostly involved in planting, maintenance, harvesting and post-harvesting activities. All vegetables, peanuts, cassava and also nearly all fruits are produced on small farms.

Women play an especially important role in small-scale agricultural production. Planting, harvesting and processing are done mainly manually. In general, the following tools are used by the smallholder: a machete, an axe, a shovel, a fork and spade and, sometimes, a back-sprayer and water pump.

b. The interior

In the interior, except for large-scale palm oil production, only small-scale farming is done by the Maroons and the Amerindians. The tools used are machetes, axes, knives and spades. These farmers produce their own planting material and do not use any chemicals. There are indications that in areas where farming has become commercial, some farmers learned about the use of chemicals while marketing their products and then started using agro-chemicals.

The activities of the men are limited to soil preparation, while they spend the rest of their time hunting, fishing and, nowadays, gold mining, in the wood industry or working elsewhere for a salary. All other cultivation activities are performed by women.

In the interior women are responsible for 90% (IFAD) of agricultural production.

c. Technology used in three selected crops

Vegetables

Vegetables are grown by smallholders in the entire coastal area of Suriname, with concentrations in the districts of Commewijne, Wanica and Saramacca. Production has been steadily increasing in recent years. In 1991, the land area increased to 1800 ha. Most producers grow two-four kinds of vegetables a year on plots varying from 0.04 ha to 0.5 ha in size. Production is labor-intensive and requires considerable off-farm inputs, such as fertilizers, pesticides and herbicides.

Most producers are characterized as part-time farmers. In fact, it is men who work as part-time farmers. The hours that women contribute to the production process are ignored. In the interior, only a few vegetables are cultivated or consumed. Table III.2 gives an overview of the cultivated areas and the production of vegetables in Suriname from 1985 to 1992. Notwithstanding the deteriorating economic situation and the lack of foreign exchange to buy implements, both the cultivated area and production are increasing.

Table III.2. Areas and production of vegetables in Suriname, 1985-1992.

Year	Cultivated Area (ha)	Production (tons)
1985	864	5 601
1986	920	4 233
1987	1 491	15 891
1988	1 235	13 816
1989	1 202	15 483
1990	1 687	23 153
1991	2 112	33 122
1992	1 800	32 723

Source: LVV.

Peanuts

Peanuts, another smallholder crop, are grown on the sandy ridges of the young coastal plain by farmers of Indonesian origin. Full-time farming is more common than in the other categories of smallholders. This is due to the fact that a substantial number of peanut producers are elderly farm operators, with a less than average educational level. Table III.3 gives an overview of the areas and peanut production in Suriname. Peanuts are also grown in the interior.

Cassava

Cassava is, together with highland rice, maize and other root crops, the subsistence crop for the Interior. As already stated, women in the interior are responsible for 90% of all agricultural activity. A sweet cassava variety is grown in the coastal plain for fresh consumption. Table III.4 gives an overview of the areas and production of cassava in Suriname.

B. Processing Technology

Totally mechanized processing technology exists for the processing of rice and palm oil and the preserving of vegetables, fruits, wheat, fish and shrimp, produced locally or imported by a few larger-scale agroindustrial operations.

Table III.3. Area and production of peanut in Suriname, 1985-1992.

Year	Cultivated Area (ha)	Production (tons)
1985	497	499
1986	627	467
1987	640	488
1988	593	530
1989	519	410
1990	548	571
1991	446	414
1992	385	385

Source: LVV.

Table III.4. Area and production of cassava in Suriname, 1985-1992.

Year	Cultivated area (ha)	Production (tons)
1985	455	3000
1986	438	1758
1987	275	3837
1988	156	1834
1989	170	1995
1990	195	2450
1991	198	3058
1992	200	2645

Source: LVV.

After harvest the paddy is dried and milled into cargo rice. Part of this is exported, while the rest is further processed to produce white rice for both local consumption and export. All activities are totally mechanized. No women are involved in the processing of rice other than in administrative jobs.

The post-harvest treatment of bananas is limited to the cleaning and packing of bananas for export, and most of these activities are done by women.

The processing of palm oil is also totally mechanized, while the processing of coconut oil is still, to a large extent, manual. All activities are performed by men.

The processing of fish and shrimp is limited to cleaning and packing for frozen storage, for export and local consumption. Some fish sticks and rolls are prepared on a small scale. Women are heavily involved in both small- and large-scale post-harvest activities.

For most producers the post-harvest treatment of most vegetable products involves cleaning, packing and sorting. Most of the vegetable products are perishable, which means that the products have to be sold immediately. Women play a particularly important role in harvesting, sorting and preserving produce for the market.

Some fruits are processed to make juices, jam and preserves on a small scale.

Cassava, mainly produced in the interior, is processed into flour, bread, etc., by elderly Amerindian and Maroon women, on a small scale and manually. The tools used are the grader and the *mata* for grading and squeezing the cassava. Baking ovens and other equipment are mostly shared by several producers.

Peanuts are harvested and shelled manually, while the product is sun-dried. In some communities, a self-designed thresher is used for the shelling of peanuts. Post-harvest activities and the processing of peanuts into sauce, snacks or butter are mainly performed manually by women.

Peanuts usually represent the main source of income from agriculture for the smallholders involved in their production. Since about half of the men are involved in a variety of off-farm activities, the continuity of peanut production and processing is increasingly managed by women (IDOS, 1992; IFAD, 1993; Centrum Index, 1984).

C. Marketing Technology

The domestic market for agricultural production is very small, and will remain so for a long time to come. The market offers very limited or no possibilities at all for the absorption of larger volumes of most products than at present.

The sales conditions of the domestic market are characterized by highly unstable prices and large price fluctuations.

Agro-processing has not reached a scale sufficient to absorb the present surpluses of most products. The relative under-development of local agroindustry is also largely due to the small total volume of products for processing.

In terms of marketing, the outlook for the expansion of agricultural production is largely determined by the prospects for access to foreign markets.

The lion's share of rice for both local distribution and the export market is bought from the rice farmers by five large buyers. In addition to owning large production farms, they operate drying and milling facilities, and also control export channels. Until a short time ago, all rice was distributed through SUREXCO (Suriname Rice Export Company), a government company responsible for all rice exports from Suriname. Some 20% of the paddy produced is contractually delivered to the state office in charge of buying and distributing consumer goods for local consumption.

Rice prices are fixed by the State and rice producers, processors and exporters. Export products, such as rice, bananas, fish and shrimp, have their own specialized marketing channels, in which no women are involved.

In general, farmers, including women, do not market their products by themselves. After harvesting, the product will be delivered to the buyers, who own the necessary transport and collect the product at the farm gate. This is especially true of the vegetable sector in the coastal plain. Some women farmers sell their products on the market themselves, together with other products that they collect in their village. Due to transportation problems, this phenomenon is decreasing. Most of the market traders prefer to buy their supplies for retailing at the marketplace itself (Lahmeyer, 1993; IDOS, 1992; IFAD, 1993).

IV. THE USE OF TECHNOLOGY ON SMALL PRODUCTION UNITS AND BY WOMEN

In the interior, women are responsible for farming. All tasks except land clearing are performed by women, which suggests that all the tools mentioned earlier are used by women. In the coastal plain, men are responsible for land clearing and preparation. Women manage or assist in the other activities. The technology used by women is described in detail in the following section, based on the survey results.

A. Inputs, Instruments and Practices

There are no differences in the technology applied by women and men, neither in the coastal plain or the interior.

In the coastal plain, only machines and back-sprayers are in general used by men. Furthermore, women participate in all activities using the same heavy equipment as the men.

In the interior, land clearing is done by men using axes and assisted by women. The same heavy axe is used by women while gathering firewood. All the other tools mentioned earlier are used by women, because they are the farmers. Table IV.1 gives an overview of the types of equipment and tools used in the farms surveyed, broken down by gender.

The interior lags far behind the coastal area as far as the use of technology is concerned. For instance, farmers in the interior still use a spade with a very small stick about half a meter long, with all the negative effects on their back, while a longer stick could lighten the work.

In the interior, farming is traditionally carried out as shifting cultivation. This means that plots are gradually situated further away from the villages, increasing the distance that farmers have to walk. This is hard, especially when the women return to the village with their harvest in a basket on their head, walking across creeks and on narrow paths, often climbing over thick trunks and sometimes carrying babies on their backs. Depending on the distance to the plot, women often move with their younger children to a hut on the plot for a few weeks, totally isolated from the village.

Table IV.2 indicates that 51% of farmers depend for water for farm use on rivers/springs/wells/ponds, and 80% on rainfall. This means that they are more dependent on the weather and water pumps. Flooding is indicated as one of the main problems in the survey.

B. Adoption of Improved Technology

Most small farmers use traditional technology as far as cultivating methods and tools are concerned. The use of fertilizers and other chemicals is, however, adopted rapidly, because it immediately translates into higher yields.

Table IV.1. Types of equipment and tools used on the farms surveyed by gender, Suriname, 1993.

Equipment/Tools	% used on the farms	% Used by gender		
		Women	Men	Both
Hand tools	100	30	2	68
Plough	5	0	80	20
Cart	20	19	5	76
Animal power	1	0	100	0
Tractor	23	4	83	13
Trailer	2	0	100	0
Irrigation equip.	10	10	40	50
Sprayers	67	20	64	16
Indigenous implements	11	73	9	18
Other	3	33	0	67

Source: Survey data, 1993.

Table IV.2. Source of domestic and farm water supply, Suriname, 1993.

Source	Domestic %	Farm-Use %
Public-pipe to yard	37	9
Public standpipe	24	4
Stored rain water	57	3
Private-pipe to yard	4	2
Private catchment	8	1
River/spring/well/pond	24	51
Rainfall	-	80
Canal	-	1

Source: Survey results, 1993.

C. Familiarity with and Access to Improved Technology

Small farmers, especially from the interior, have hardly any access to improved technology, even when this is available. Some NGOs are active in the interior to improve this situation.

In the coastal plain, the LVV has the structure to develop new technologies and provide this to farmers. But, due to lack of specialized manpower and implements, the Ministry is not able to respond to every request. Farmers therefore have no access to improved technology.

Of the 280 men and 269 women surveyed under this project, only two farmers received training in farm technology, namely in marketing, seed selection and production, and the use of chemicals.

The cultivation technology used in small farming is transferred from parents to children. Due to lack of know-how and adequate infrastructure, production losses are high. Table IV.3 gives an overview of the percentage lost and the reasons for these losses.

In the coastal plain, there is a well developed infrastructure for the distribution of high-yield varieties of seeds and agro-chemicals. But, due to the bad economic situation of the country, agricultural inputs are not always available at reasonable prices.

Most of the agricultural cooperatives act as distributors of inputs to their members. These inputs are imported by the government and prices are lower than the prices of the same inputs on the parallel market. Farmers can buy these inputs only through their cooperatives. Most of the cooperatives are not willing to accept new members or increase the group of beneficiaries.

Table IV.4 gives an overview of the source of equipments and tools by farm size.

D. The Appropriateness of the Technology Offered to Women Food Producers

The appropriateness of technology for use by women food producers is generally not taken into account by research programs and policies. The same technology is used by both men and women. Typical "male jobs," such as (manual or mechanized) land preparation, spraying and the use of water pumps, will be done by men, while women will participate in the rest of the activities, such as planting, manual weed control, harvesting and post-harvest handling.

Table IV.5 indicates the family member participation by type of activity and type of crop in percentage.

Table IV.6 indicates the family member participation in marketing of farm products.

Table IV.3. Percentage of production lost or given away and reason for loss by crop, Suriname, 1993.

CROPS	TOTAL PRODUCTION KG	REASON FOR PRODUCTION LOST OR GIVEN AWAY IN %						
		REASON NOT STATED	PRAEDIAL LARCENY	SPOILAGE	PESTS/DISEASE	NATURAL DISASTER	GIVEN AWAY	
SOYA BEAN	1.020	0.39						
MUNG BEAN	299	0.33						
BITTER GUARD	242	1.24						
RED PEA	800	0.00						
PEANUT	28.245	5.58			0.64			
CABBAGE	14.140	0.00	0.07		0.11			
CALALOO	55.362	0.70			0.24			
BITTER GREENS	2.920	3.60						
STRING BEANS	3.016	9.95			0.66			
BORA	38.015	1.30			0.73	0.03		
EGG PLANT	23.964	0.62						
OKRA	33.150	0.00						
TOMATO	23.181	0.25						
CUCUMBER	7.230	0.07						
PUMPKIN	4.485	12.91						
SHALLOT	49	0.41				0.05		

HOT PEPPER	9.943	0.10						
SWEET PEPPER	30	66.67						
GREEN BANANA	47.200	0.00						0.11
PLANTAIN	65.510	0.86	0.73					
ORANGE	126.180	0.11						
PINEAPPLE	200	10.00						
GRAPEFRUIT	1.590	3.77						
CITRUS	16.585	1.51						
CARAMBOLA	2.720	0.37						
EAST INDIAN BEAN	500	0.00						
POMEGRANATE	1.600	0.00				37.50		
MELON	7.950	1.26			0.63			
PAWPAW	4.000	0.00						
CORN	9.550	0.21						
SWEET POTATO	1.275	0.00						
NAPPI	260	3.85						
CASSAVA	87.229	4.06				2.92	0.03	
COCONUT	135.000'	0.00						

Source: Survey data, 1993.

Table IV.4. Source of equipments and tools by farm size, Suriname, 1993.

Farm size	Number of farms	Numbers of tools & equip. used	Source of tools & equip. in %				
			No response	Foreign	Local	Self-made	Community
< 0.4	16	30		80	17	3	
0.4 - < 2.0	31	69	3	83	14		
2.0 - < 4.0	28	75		90	8	1	1
4.0 - < 10.0	21	54	2	87	11		
10.0 & over	9	24		58	42		
Total	105	252		83	15	1	

Source: Survey data, 1993.

Table IV.5. Family member participation by type of activity and type of crop in percentage, Suriname, 1993.

ACTIVITIES	ALL CROPS			VEGETABLES			CASSAVA			PEANUT		
	RESPONDENT	OTHER WOMEN	MEN	RESPONDENT	OTHER WOMEN	MEN	RESPONDENT	OTHER WOMEN	MEN	RESPONDENT	OTHER WOMEN	MEN
	Purchasing/preparing planting material	22	1	11	9	-	6	8	1	4	5	-
Land preparing	26	7	20	11	1	9	9	5	7	6	1	4
Planting	25	8	18	9	1	7	9	5	7	7	2	4
Crop care	28	7	37	13	1	10	9	4	16	6	2	11
Purchase/use of fert. & chem.	25	6	21	13	1	10	6	3	6	6	2	5
Harvesting	29	9	24	13	1	10	9	5	9	7	3	5
Post harvest	21	7	19	10	1	9	5	3	5	6	3	5
Marketing	22	8	18	9	1	8	7	4	6	6	3	4

Source: Survey result.

Table IV.6 Products marketed on the farm by family member, Suriname, 1993.

CROPS	FARMS THAT MARKET %			NO of FAMILY MEMBERS THAT MARKET				TOTAL
	TOT	<0,4	>0,4	RESPON- DENT	OTHER WOMEN	MEN	BOTH	
SOYA BEAN	100		100	2			1	3
MUNG BEAN	100		100	1		2		3
BITTER GUARD	75		75	1	1		1	3
RED PEA	100		100			1		1
PEANUT	100	100	100	24	1	2	17	44
CABBAGE	100	100	100	2		6	2	10
CALALOO	57	0	67	4		1	3	8
BITTER GREENS	80	100	75	2		1	1	4
STRING BEANS	100	100	100	1		4		5
BORA	93	100	93	12	1	9	4	26
EGG PLANT	86		86	11	1	3	3	18
OKRA	100	100	100	2		3		5
TOMATO	92	50	100	3	1	4	4	12
CUCUMBER	100		100	2		2		4
PUMPKIN	100		100	4		2		6
SHALLOT	100		100	1				1
HOT PEPPER	100		100	4		4	1	9
SWEET PEPPER	0		0					
GREEN BANANA	100		100			2		2
PLANTAIN	100		100	6		8	2	16
ORANGE	100		100	6			2	8
PINEAPPLE	100		100	1				1
GRAPEFRUIT	100		100				1	1
CITRUS	100		100	4			1	5
CARAMBOLA	100		100	2	1			3
E. INDIAN BEAN	100	100	100	1				1
POMEGRANATE	100		100	1				1
MELON	75		75			1	1	2
PAWPAW	100		100	1				1
CORN	75		75	2		1		3
SWEET POTATO	100		100	2				2
NAPPI	100	100						
CASSAVA	92	40	95	28		9	7	44
COCONUT	100		100			1		1

V. THE NATIONAL MARKET FOR AGRI-FOOD COMMODITIES PRODUCED ON SMALL-SCALE PRODUCTION UNITS

The domestic market for agricultural production is very small, and will remain so for a long time to come. The market offers very limited, or no possibilities at all, for the absorption of larger volumes of most products than at present. The sales conditions of the domestic market are characterized by highly unstable prices and large price fluctuations.

Agro-processing is not sufficiently developed to absorb the present surpluses of most products. The relative underdevelopment of local agroindustry is also largely due to the small total volume of products for processing.

In terms of marketing, the outlook for the expansion of agricultural production is largely determined by the prospects for access to foreign markets.

The production of most products has to be at least doubled. Much needs to be done to adopt international standards such as uniformity, quality and the appearance of products.

Present shortfalls in the supply of agricultural products (including milk) to the domestic market are largely due to price levels, which are too low to be attractive for the producers.

Transportation, grading and sales services for farm products are controlled by a small number of middleman organizations, which are regarded as the single most important determinant of both farm gate and consumer prices of the various agricultural products.

In this chapter a review of the national market is presented, followed by a discussion of marketing channels for small farm production, and the marketing agents involved.

Table V.1 give an overview of consumers prices of agricultural products.

A. Demand, Price and Supply

The culturally heterogenous population with diverse food preferences (among others, inspired by religion) has a rather complex food behavior pattern. Rice is the main staple food. In the coastal area, the second important staple is imported wheat. It is consumed as bread, roti or noodles. In the interior, root crops like cassava are the main staple, together with highland rice, produced at the subsistence level. Sweet potatoes and plantains, together with rice, are used as staples, especially by the Creole population. In contrast with Latin America and the Caribbean, the amount of vegetables consumed, especially by the inhabitants of the coastal plain is rather high. In the interior, smaller but still considerable amounts of vegetables are consumed. Table V.2 gives an overview of the production, export and local consumption of vegetables. The figure for consumption is the difference between production and exports. This is, in fact, not realistic because there are also extra-official exports.

Table V.1 Consumer prices of agriculture product in cents per kg.

Description	Unit	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Sweet potato	kg	186	176	174	167	159	194	222	269	295	304	473	413	356
Cassava	kg	129	124	122	118	122	96	181	181	201	216	389	424	403
Yam	kg	210	177	177	165	153	244	267	297	299	391	780	698	645
Taro	kg	153	177	175	181	164	197	241	278	281	361	484	433	380
Yautia	kg	124	120	119	120	113	105	101	143	227	321	589	674	738
GRAINS														
Maize (korrels)	kg	180	209	300	300	200	202	205	236	279	357	615	543	578
Rice	kg	78	83	81	90	95	81	87	86	120	134	160	203	323
VEGETABLES														
Black nightshade	kg	206	213	206	237	213	225	252	374	377	405	596	625	856
Chinese cabbage	kg	160	129	139	167	157	212	244	302	304	285	415	482	784
Eggplant	kg	170	175	181	194	163	183	193	238	245	260	458	487	645
Eggplant	kg	126	102	95	133	99	185	171	195	198	280	490	449	746
Bitter greens	kg	114	130	132	151	134	162	204	247	260	267	437	365	578
Swamp cabbage	kg	98	102	105	108	119	149	171	201	248	275	372	313	447
Chinese mustard	kg	251	221	209	268	242	329	377	503	504	491	730	719	1019
Calaloo	kg	135	134	133	170	146	189	161	236	249	285	443	381	533
Cucumber	kg	88	96	101	98	91	101	104	176	162	162	215	257	493
Cabbage	kg	183	150	126	250	130	204	290	502	511	549	940	948	1440
Cowpeas	kg	190	187	188	215	199	340	456	899	558	674	708	748	1105
Okra	kg	208	248	285	293	208	334	338	391	357	560	705	576	1071
Chinese cabbage	kg	165	143	164	198	174	211	202	294	291	365	641	681	1187
Cayenne pepper	kg	569	450	637	711	432	608	369	617	599	831	1453	774	2232
Bottle gourd calabash	kg	106	98	104	100	95	105	115	151	181	212	303	295	561
Pumpkin	kg	116	104	86	84	79	102	104	209	226	246	304	334	530
Sweet pepper	kg	100												1755
Lettuce	kg	465	463	619	740	595	982	749	759	956	1209	1493	1346	1558
Beans snap or wax	kg	245	221	223	240	210	270	260	651	625	683	884	937	1566
Celery	kg	787	581	769	967	838	2500	1093	1663	1451	1926	1967	1540	1871
Bean carilla	kg	199	265	283	189	161	200	182	229	276	330	525	531	683
Ceylon spinach	kg	186	205	289	337	319	442	508	438	525	592	677	569	691
Cabbage	kg													1670
Tanjaleaves	kg	142	134	146	167	143	164	203	402	496	418	641	590	986
Tomato	kg	274	267	273	351	298	457	553	902	732	756	1188	1064	1590
Cowpeas	kg	300	300	300	267	250								
Dry cowpea	kg	300												
Peanut (gedopt)	kg	467	671	655	658	608	427	579	1852	1226	2208	2498	2326	3177
Peanut (ongedopt)	kg	300					694	871	1034	881	1822	1828	1770	2335
Soybean	kg	300					997	1094	1092	1151	1564	1612	2081	
Urdi	kg	578	600	600	577	600	521	630	690	706	1060	1680	1725	2615
Pigeon pea	kg	300	600											
Eggs	kg	276	275	275	266	321	423	673	1032	914	1112	1473	1585	2636
Ducks (levend)	kg	634	700	700	700	700	692	821	1221	1607	1792	2016	2385	4542
Chicken	kg	460	459	500	500	500	509	777	1110	1267	1359	1199	2009	2975
Chicken (levend)	kg	360	360	400	400	400	405	622	870	983	963	916	1604	2467
FRUITS														
Pineapple	kg	398	346	354	351	360	305	277	329	290	338	381	433	474
Avocado	kg						241	280	336	313	346	542	527	539
Banana	kg	105	102	104	105	102	211	125	135	145	185	185	197	227
Plantain	kg	155	110	106	104	98	86	186	184	200	205	345	294	395
Lemon	kg	111	107	154	148	148	180	208	180	174	239	429	411	438
Grapefruit	kg	52	82	58	50	51	77	91	114	152	213	395	289	402
Coconut	kg	83	78	84	75	74	94	114	294	235	235	228	280	232
Lime	kg	106	79	157	110	79	232	249	208	205	238	420	147	169
Papaya	kg	100	192	167	204	226	153	175	243	284	357	524	455	564
Orange, sweet	kg	102	98	116	114	111	126	172	176	202	201	280	369	428
Passion flower fruit							289	276	284	381	410	600	384	685
Pumelo							128	145	192	263	263	257	246	389
Tangerine							229	224	217	323	280	392	407	302
Mango							187	149	150	168	270	425	432	393
Watermelon											246	243	322	358
Cocoa (gebrand)	kg	400	400	400	400	400	550	600	731	1630	1580	1884	2000	2313
Coffee (gebrand)	kg	1800	1880	1880	1000	1000								
Honey	Ltr													
Garlic	kg	763						2750	3711	2241	1621	4777	2450	5052
Palmoil verpakt	Ltr	1997	1000	1000	1000	1000				4162	4110	4617	4000	5917
Palmoil los	Ltr									809	1027	821	949	1196
Soyasolie los	Ltr										709	681	793	1123
Soyasolie verpakt	Ltr													
Cocosoil	Ltr	253								719		739	818	1146
Onion	kg	117								838	993	777	872	1258
Onion (Zwart)	kg									1217	1242	627	642	1073
Shallot	kg	1016	1072	1256	1203	1150				1217	1466	1662	1439	1733
Ginger							762	760	825	1279	1285	1398	1339	1853

Source: LVV.

Table V.2. Production, export and consumption of vegetables in Suriname, 1985-1992 (tons).

Year	Production	Export	Consumption
1985	5 601		
1986	4 233	1 209	3024
1987	15 891	927	14964
1988	13 816	1 101	12715
1989	15 483	1 879	13604
1990	23 153	-	-
1991	33 122	-	-
1992	32 723	-	-

Source: LVV and own calculations.

Small farmers meet the total local demand for fresh vegetables, fruits, root crops and pulses. Only some temperate fruits are imported on a small scale, as reflected in Table V.3.

Except for rice, milk and imported foodstuffs, prices of other foods are considered to be fixed by demand and supply, but to a large extent are regulated by intermediaries.

With seasonal variations in supply, there are wild fluctuations in the prices of vegetables.

Before the start of the civil war in the east of the country in 1987, a considerable amount of vegetables and fruit were exported to French Guiana. This had a positive effect on price fluctuations. Due to transport constraints, exports to Europe did not increase. The FAL started on an experimental level, exporting vegetables by ship to Europe. The FAL is one of the larger intermediaries. It also helps its farmers with inputs and innovative technology.

B. National Marketing Channels

Small-scale farm products will normally be bought by an intermediary at the farm gate. The intermediary will then transport the product to the market.

There are three main markets in the country. They are all owned by the government. The most important one is the Central Market, followed by the Southern Market, located in Paramaribo. The third main market is located in the District of Nickerie. These markets are open every working day.

Table V.3 Value of imports of food, beverages and tobacco products, 1981-90 (\$F Million).

Imports	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990*
Live Animals	1.30	11.60	9.80	3.50		0.10	0.13	0.42	0.39	0.26
Meat & Meat Products	5.10	5.30	4.50	3.10		3.72	2.05	3.26	1.21	2.91
Dairy Products, Eggs & Honey	11.10	12.30	11.80	11.20		10.05	11.55	9.96	14.25	10.55
Fish & Fish Products	4.70	4.40	4.30	0.60		1.15	1.21	2.55	2.22	3.66
Cereal & Cereal Product	23.30	21.50	22.10	19.40		13.59	8.74	13.75	19.71	20.10
Fruits & Vegetables	11.30	12.10	10.10	10.40		6.90	4.64	8.56	8.11	11.43
Sugar & Sugar Products	6.50	4.80	5.90	4.30		3.07	5.69	4.30	8.42	12.17
Coffee, Tea & Cocoa	4.80	4.50	4.10	2.30		1.31	1.98	2.37	2.19	2.90
Animal Feed	6.80	7.60	9.10	7.00		5.61	4.72	0.12	0.23	1.88
Oils and Fats						3.05	6.74	5.42	6.38	9.90
Other Food Products	11.20	7.40	15.90	8.90		4.77	13.90	49.33	8.14	11.22
Beverages	9.80	8.60	5.90	2.40		2.12	3.55	2.97	5.65	6.72
Tobacco & Tobacco Products	4.60	5.20	5.60	4.60		4.64	3.34	3.37	2.48	3.82
Total	105.30	109.10	77.70	60.07	68.24	106.37	79.37	97.51		

Source: Bureau of Statistics.

The Central Market plays an important role as the main structure in terms of wholesale and retail distribution of farm products, especially vegetables, fruits and fish. Price-setting takes place at the Central Market and is mostly the outcome of a process of price giving and taking between the intermediary and the retailers.

There are also three regional or farmers' markets, located in the Districts of Wanica and Saramacca, which open once or twice a week, in the morning or the afternoon. Markets of this kind were stimulated by the government, because they were established in the production areas to give farmers an opportunity to sell their products directly to the consumer, thus avoiding middlemen. It was hoped that farmers would obtain a higher return on their products. In reality, it appears that intermediaries took over this marketing activity too.

Apart from these government-owned markets, some small- and medium- scale privately owned groceries, as a division of large supermarkets, are retailing farm products. The marketing agent is either the owner of these supermarkets or the wholesaler.

Especially following the SAP period, an increasing number of booths have appeared in front of houses. They have sometimes developed into micro-markets.

Table V.4 gives typical marketing channel by type of crop in percentage of the crop and Table V.5 indicates the typical marketing channel by type of crop in percentage of the total.

C. Marketing Agents

In the coastal area some farmers who own a pick-ups will sell their produce to the local or central market themselves. But most of the farmers do not have transportation and they will sell their products to intermediaries who make big profits by fixing their own prices. They will collect the produce at the farm gate and sell it on the central market or deliver it to supermarkets or groceries.

About five middlemen together form a monopoly, in local markets and in exports.

The majority of sellers in the central market are women, who will buy the produce for retailing. Some of these women will also collect the produce in their villages and bring it to the market themselves.

The price is fixed by the intermediary without the involvement of the farmer, who is generally informed about prices at the Central Market.

Middlemen often act as creditors and supply inputs to small- and medium-scale farmers. These intermediaries are also exporters of farm products, along with some other smaller exporters. Table V.6 gives an overview of the typical consumer by type of crop.

Table V.4. Typical marketing channel by type of crop in % of crop, Suriname, 1993.

CROPS	PLACE OF SALE IN %							OTHER
	FARMGATE	NEIGHBOURHOOD	VILLAGE MARKET	TOWN MARKET	CENTRAL MARKET	INSTITUTION		
SOYA BEAN	100							
MUNG BEAN	100							
BITTER GUARD	67	33						
RED PEA	100							
PEANUT	98					2		
CABBAGE	50		10	30		10		12
CALALOO	50	25	13					
BITTER GREENS	75			25				
STRING BEANS	20		20	60				
BORA	65	4	11	11	4			5
EGG PLANT	67	11	6	16				
OKRA	40		20	40				
TOMATO	67	8	17	8				
CUCUMBER	50		25	25				
PUMPKIN	83	17						
SHALLOT	100							
HOT PEPPER	89		11					

Table V.4. Cont.

CROPS	PLACE OF SALE IN %						
	FARMGATE	NEIGHBOURHOOD	VILLAGE MARKET	TOWN MARKET	CENTRAL MARKET	INSTITUTION	OTHER
GREEN BANANA	50		50				
PLANTAIN	69		31				
ORANGE	63			37			
PINEAPPLE	100						
GRAPEFRUIT	100						
CITRUS	80	20					
CARAMBOLA	67		33				
EAST INDIAN BEAN	50		50				
POMEGRANATE	100						
MELON	100						
PAWPAW			100				
CORN	100						
SWEET POTATO	100						
CASSAVA	82	2	4	10			2
COCONUT				100			

Source: Survey data, 1993.

Table V.5. Typical marketing channel by type of crop in % of total, Suriname, 1993.

CROPS	TOTAL NO OF COMMERCIAL ACTIVITIES	PLACE OF SALE IN % OF THE TOTAL						INSTITUTION	OTHER
		FARMGATE	NEIGHBOURHOOD	VILLAGE MARKET	TOWN MARKET	CENTRAL MARKET			
SOYA BEAN	3	1.5							
MUNG BEAN	4	2.0							
BITTER GUARD	3	0.1	10						
RED PEA	1	0.1							
PEANUT	44	21.2					66.7		
CABBAGE	11	0.03		5.9	9.7		33.3		
CALALOO	8	1.5	20	5.9				33.3	
BITTER GREENS	4	1.5			3.2				
STRING BEANS	5	0.1		5.9	9.7				
BORA	27	9.1	10	17.6	9.7	4		33.3	
EGG PLANT	18	6.1	20	5.9	9.7				
OKRA	6	1.5		5.9	6.5				
TOMATO	12	4.0	10	11.8	3.2				
CUCUMBER	4	1.0		5.9	3.2				
PUMPKIN	6	2.5	10						
SHALLOT	1	0.1							

Table V.5. Cont.

CROPS	TOTAL NO OF COMMERCIAL ACTIVITIES	PLACE OF SALE IN % OF THE TOTAL							INSTITUTION	OTHER
		FARMGATE	NEIGHBOURHOOD	VILLAGE MARKET	TOWN MARKET	CENTRAL MARKET				
HOT PEPPER	10	4.5		5.9						
GREEN BANANA	2	0.1			3.2					
PLANTAIN	17	6.0			16.1					
ORANGE	8	2.5			9.7					
PINEAPPLE	1	0.1								
GRAPEFRUIT	1	0.1								
CITRUS	5	2.0	10							
CARAMBOLA	3	0.1		5.9						
EAST INDIAN BEAN	2	0.1		5.9						
POMEGRANATE	1	0.1								
MELON	3	1.5								
PAMPAN	1			5.9						
CORN	3	1.5								
SWEET POTATO	3	1.5								
CASSAVA	45	18.7	10	11.8	12.9					33.4
COCONUT	1				3.2					
TOTAL	263	100	100	100	100	100	100	100	100	100

Source: Survey data, 1993.

Table V.6. Typical customer by type of crop, Suriname, 1993.

CROPS	TYPE OF CUSTOMER IN %				
	CONSUMER	HIGGLER/ HAWKER	AGENT/MIDDLE- MAN	PROCESSOR	OTHER
SOYA BEAN			67	33	
MUNG BEAN			100		
BITTER GUARD	67				33
RED PEA			100		
PEANUT	16		61	20	3
CABBAGE	40		60		
CALALOO	75	13	11		
BITTER GREENS	50		50		
STRING BEANS	60		40		
BORA	50	4	35		11
EGG PLANT	61	6	28		5
OKRA	20		80		
TOMATO	17		83		
CUCUMBER	25	25	50		
PUMPKIN	67	17	17		
SHALLOT			100		
HOT PEPPER	22		78		
GREEN BANANA			100		
PLANTAIN	44		57		
ORANGE	38		62		
PINEAPPLE				100	
GRAPEFRUIT	100				
CITRUS	80		20		
CARAMBOLA	67		33		
EAST INDIAN BEAN	50				50
POMEGRANATE			100		
MELON			100		
PAWPAW			100		
CORN	67		33		
SWEET POTATO	50				50
CASSAVA	50		23	20	7
COCONUT	100				

Source: Survey data, 1993.

VI. THE PROCESSING AND MARKETING OF FOODSTUFFS ON SMALL-SCALE PRODUCTION UNITS BY WOMEN

Vegetables will be sold as fresh produce at the local or central market. In the coastal area, some sweet cassava is produced. This will also be sold at the market as fresh produce. The bitter cassava produced in the interior will be processed manually by the women producers themselves to make cassava bread, pastry flour, etc., and sold on the market. Peanuts are also produced in the coastal area, mostly by Javanese farmers, and in the interior by the Amerindians and the Maroons. Part of the peanut production will be sold on the market as fresh produce. The Javanese people also process peanuts to produce a sauce or salty snack, while in the interior the Maroons will use them to prepare a kind of cake called *munga*, mixed with rice.

The processing is predominantly done manually by women, using the *mata* for grinding, the rasper, and the *matapi* for squeezing out the juice. The participation in processing activities by family member and by ethnic group is presented in Table VI.1.

A. Processing: Relationship Between Type of Product and Specialization by Gender

Small-scale processing of farm products is done by women. Vegetables are not processed in Suriname, neither on the small nor large scale, except some cabbage which is used to produce sweet-sour cabbage.

Fruits are processed on a small scale to make juices, and also conserved with sugar. Plantains are often peeled, cut, sun-dried and ground for use as porridge for children.

Harvesting, stripping and shelling of peanuts are done manually, predominantly by women. Peanuts are processed to make peanut sauce, snacks, peanut butter or *munga* using the traditional method, and manually. Peanuts will be roasted on a metal plate, using a wood fire and ground in a *mata*. The Javanese also consume unshelled peanuts boiled in brine.

Sweet cassava is processed to make a snack (chips) in the coastal plain. In the interior, bitter cassava is used to make bread, pastry and flour. Peeling, grading, squeezing out of the juice and baking are done by women. In some areas in the interior, the cassava mill is used for grinding. Baking on a wood fire creates a lot of smoke, which has a bad effect on the health of the processor.

Table VI.1. Participation by family member in processing activity by ethnic group, Suriname, 1993.

Products	Total	Javanese			East Indian Men/companion	Creole Respondent
		Respondent	Other women	Children		
Cassava bread	9				1	8
Pastries	6					6
Cassava flour	1					1
Plantain flour	2				1	1
Chips	6	5				1
Cassava flakes	1	1				
Starch	3					3
Salted/roasted nuts	5	5				
Peanut butter	6	5	1			
Peanut sauce	20	18	1	1		
Other foods	25	24				1
Other goods	1					1

Source: Survey data, 1993.

B. Marketing: Access to Different Types of Market

1. Products

Most farm products are sold as fresh produce at the central market or in the neighbourhood.

In the interior, processed cassava products are consumed by farmers and their families. Creole women from the District of Para also process cassava to make pastry (*dosie*) and bread. They or their daughters sell these products at the J.A. Pengel International Airport, or in the Republic leisure park in the same district.

2. Markets

The majority of the booths in the market places are registered in men's names, while the majority of the users are women.

3. Transportation and amount of time devoted to marketing

In general, farmers, including female farmers, are not marketing their farm products in the market place. They sell the products to an intermediary at the farm gate.

C. Factors that Influence the Participation of Women

Farmers sell most of their products at the farm gate. Most of the small-scale farmers are part-timers. They have a full-time job somewhere else and have no time to market their produce. The lack of transportation is another problem. The wife cannot go to the market either, because she has to take care of the household and also work on the farm. Most of the retailers at the market places are not farmers, but buy their products from intermediaries.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

Women play a crucial role in agricultural production and are usually in charge of agricultural activities, since most men are part-time farmers. According to recent data gathered from a random sample of farming communities in the districts surrounding Paramaribo, 26.1% of men regard themselves as part-time farmers (i.e. only part of their income comes from agricultural production) and only 16.8% said that their main income comes from farming. The remainder consider that their farm's production is an extension of their wives household tasks, generating an income for the family.

Although women play a crucial role in the agricultural sector, there is no public or private technology, marketing or processing policy focused on women.

In the interior, traditional shifting cultivation is applied. At an early stage, daughters are taught traditional farming methods, because they will be responsible for providing the food when they marry. No chemicals or fertilizers are used, only some hand tools. Post-harvesting activities, e.g. the processing of the crop, are also done manually by females, in a traditional and labor-intensive way.

The use of high-yield varieties along with increasing use of chemicals and fertilizers and good maintenance, introduced by the LVV in the 1970s in the coastal area, has replaced traditional cultivation technology. The know-how is now transferred from father to son, because the Ministry is unable to intervene due to lack of implements.

Before 1982 Suriname had enough foreign exchange to import the necessary implements for farmers. But as the country now has difficulties in this area, there is a tremendous shortage of implements on the market. This has led to a dramatic increase in the prices of inputs.

The marketing of small farmers' produce is dominated by a few intermediaries/exporters, who set the prices. Farmers are price takers and often they have to sell below cost price or leave their crops in the field.

B. Recommendations

It is recommended that national agricultural institutions be completely restructured and a national agricultural council developed. The latter would develop, among other things, a policy for integrated research and extension programs which would cater to the development needs in terms of export promotion and import substitution.

Due to the scarcity of foreign exchange, small farmers have to be motivated to use less imported agro-chemicals. Large amounts of capital are invested in importing seeds and other planting

material. In the coastal plain, private institutions and NGOs should be encouraged to produce high-quality planting material. Cattle manure could partly replace imported fertilizers.

To increase farmers' productivity and incomes, more attention should be paid to infrastructure and effective marketing systems.

In general, a complete reorientation of agricultural education and training is necessary. Such orientation should consider establishing regional primary and secondary schools, re-establishing training courses, strengthening high-school level agricultural education (Natin) and using overseas scholarships and fellowships for disciplines not being taught, or for further studies.

Appropriate tools should be introduced, especially for women farmers in the interior, e.g. shovels with longer wooden handles, to relieve the backs of the farmers.

Better processing technology and small equipment should be developed for home industries.

REFERENCES

- BISHAY, G.; BISHAY. 1987. Suriname, agricultural sector study: technical analysis. Vol. II, Main Report. IDB.
- BUVINIC, M.; MEHRA, R. 1990. Women in agriculture: what development can do. International Centre for Research on Women. Washington.
- CANADIAN COUNCIL FOR INTERNACIONAL COOPERATION. 1991. Two halves make a whole. Balancing gender relations in development. Ottawa.
- CENTRUM INDEX. 1984. Verslag over de Ontwikkeling van de Surinaamse Industrie.
- CÖRAS TRÄCHTÄLA/IRISH Export Board Technical Assistance Programme, Suriname. 1986. Action Programme for Development of Exports. Vol. II. Development of Fruit and Vegetable Exports.
- DUMAS, R. E. 1990. Informatie over Pinda van Pietrarelli. Intern Rapport no. 49. Landbouwproefstation.
- FARQUHARSON, N. 1987. Suriname, agricultural sector study: policies and potentials. Vol. I. IDB.
- IDOS. 1992. A situation analysis of Suriname. Paramaribo.
- IFAD. 1993. Republic of Suriname, Smallholder Support Project. Draft Post Appraisal Report.
- LAHMEYER INTERNATIONAL *et al.* 1993. Feasibility study for the improvement of three polders in Coronie East, Saramacca and Pad van Wanica, Reeberg, Rijdsdijk. Final Report. Draft. Vol. V, Social Aspects.
- MÖLLERING, G. 1991. Economische Situatie en Sociale Aspecten van Part-time Landbouwhuishoudens Rond Paramaribo. SWI Forum Jaargang 8, no 2.
- MOSER, C. 1989. Gender planning in the third world: meeting practical and strategic gender needs. World Development, vol. 17.
- REORGANIZATION AND UPGRADING of the agricultural extension service in Suriname. Project Profile.
- RESIDA, D. 1993. Survey on fruit production and processing in Suriname 1992. Paramaribo.
- REYNVAAN J., en Vos de L. s.f. Cassavaproducten. Landbouwproefstation.

SAR VAN DER, T. 1981. Enige Werktuigen voor de mechanisatie van de Pindacultuur op de Kleine Landbouwbedrijven in Suriname. De Surinaamse Landbouw 29.

STICHTING PLANBUREAU SURINAME. 1990. Meerjaren Ontwikkelingsprogramma 1990-1993. Sectorale en Regionale Ontwikkeling.

_____ . 1993. Meerjaren Ontwikkelingsprogramma 1994-1998. Suriname op een Keerpunt.

APPENDIX 1

AGRICULTURE IN MAROON SOCIETIES IN SURINAME

The Role of Women

by

Nadia Ravales

February 1994



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PREFACE

In the second half of 1993, I was approached by Ms. Shirley Defares to participate in the regional investigation into the position of women in agriculture within Maroon society. The survey methodology called for the filling out of standardized questionnaires. As an authority on the interior, especially women, it became apparent that another way of collecting information would be more useful. This view was shared by Ms. Donna McFairlaine, the regional consultant of IICA.

In consultation with Ms. Sheela Khoesial, the local representative of IICA, it was decided to compare two Maroon tribes in different regions. The tribes compared were the Aucans living in the Moengo area (district of Marowijne), and the Saramaccans residing along the upper reaches of the Suriname River in the Sipaliwini district. The Moengo area is easily accessible by car, while the Upper Suriname area is remote and only accessible by air or river. The difference in accessibility reflects very well the differences in attitude towards farming between the two tribes.

To survey the Saramaccan women, 14 trips were made to several villages. Part of the journey was by land, in the trunk of a pickup over a badly damaged road from Paramaribo to Atjoni. The trip was continued by boat over a wild, foaming, rocky river to the various locations. To survey the Aucan women, 10 trips were made to the Moengo area over badly damaged roads, past ruins that indicated needless destruction -destruction brought about by fighting in the interior.

My experiences and contact with the Maroons proved to be valuable for the survey. The enormous flow of information is presented in this extensive report. The situations presented are representative of all female farmers in the interior of Suriname. My hope is that this report will increase awareness and the motivation for development, and improve the lot of female farmers, especially in the interior.

1. INTRODUCTION

Maroon societies -communities created by escaped slaves- have been a widespread concomitant of plantation life in the Americas for more than four centuries. Ranging from tiny bands that survived for less than a year, to powerful states encompassing thousands of members and surviving for generations or even centuries, these communities still form semi-independent enclaves in several parts of the hemisphere. They remain fiercely proud of their Maroon origins and, in some cases at least, continue to carry forward unique cultural traditions that were forged during the earliest days of Afro-American history.

1.1 Suriname Maroons

The Suriname Maroons (also known as "Bush Negroes") have long been the hemisphere's largest Maroon population, representing one extreme in the range of cultural adaptations that Afro-Americans have made in the New World. Between the mid-17th and late 18th centuries, the ancestors of the present-day Maroons escaped from the plantations on which they were enslaved, in many cases soon after their arrival from Africa, and fled far into the forested interior of the country where they re-grouped into small bands. Their hardships in forging an existence in a new and inhospitable physical environment were compounded by the persistent and massive efforts of the colonial government to eliminate this threat to the plantation colony.

Of the various forms of resistance, that of the Maroons was the most effective. At the time of the uprisings they numbered 10% of the population. Halfway through the 18th century there were some 6000 Maroons. At the present time, Maroons still make up about 10% of the Surinamese population. Six distinct and lasting Maroon societies have developed, namely, Saramacca, Ndyuka, Matawai, Aluku, Paramakka and Kwinti. Their current territories are located along the upper reaches of the rivers. Presently there are some 24 00 Saramaccans (and a few thousand of them live and work in French Guiana). There are some 24 000 Aucans-Njukas who live on the Tapanahony, Marowijne, Cottica and Commewijne Rivers and Sara Creek (a few thousand Njukas live permanently in French Guiana).

The Matawai (2500) live on the Saramacca River, the Paramaka (2500) live in the lower Marowijne River, the Alukus or Boni (2500) live on the upper Lawa and Marowijne Rivers (\pm 90% of them live in French Guiana, while the Kwinti (500), the smallest group, live on the Coppename and the Saramacca Rivers.

1.2 The Saramaccans

The Saramaccans descended from the earliest Maroons who fled from the plantation area between 1680 and 1720. They gradually settled around the upper reaches of the Suriname River. The formation of the Saramaccan nation occurred during an almost permanent state of war. In view of the serious threat they presented to the plantation economy, and in accordance with its policy of "divide and rule," the government resorted to concluding separate peace treaties with some of the Maroon groups in the middle of the 18th century. Thus, more than

a century before the abolition of slavery, the Maroons had already gained their hard-won freedom.

The peace treaty signed with the Saramaccans on September 19, 1762 contained, among other decrees, the recognition of their freedom, a delineation of their territory, a large measure of autonomy, the reciprocal exchange of so-called hostages, the obligation to return escaped slaves coming to their area and the periodic delivery of goods by the government. Differing interpretations of the last two items were to remain a continuing source of friction between the Saramaccans and the government; the relationship of the parties was characterized by mutual distrust. With the conclusion of the peace treaty, the Saramaccans were able to further the development of their society. The abolition of slavery in 1863 changed the special position that the Maroons occupied in Surinamese society.

1.2.1 Economy

From the late 18th century onward, logging was the most important source of revenue. In the period 1880-1930 this was temporarily surpassed by river transport for the *balata* (natural rubber) and gold industries. For this purpose several thousand Saramaccans settled (permanently) in French Guiana. After the end of the Second World War, the economic situation in Suriname changed dramatically. The government initiated various development plans, which included the exploration and exploitation of natural resources in the interior. By means of roads and airstrips, the interior was opened up and various enterprises established. Many Saramaccan men found permanent or temporary employment in the coastal area and a number of them settled there permanently; others moved to French Guiana where they worked on the construction of the space center at Kourou.

1.2.2 Social structure

Socially, the most notable aspect of Saramaccan society is the system of matrilineal relationships. In this system, descent is reckoned through the female lineage. Social life is nevertheless dominated by the men. The two important social units are the matrilineage (*bëë*) and the matriclan (*lö*). The matrilineage is a group of relatives, who are descendants of an apical ancestress. A person's lineal status influences virtually all of his or her activities. In the matriclan, the family relationship is less clear. Most clans derived their names from a planter or a plantation. The Saramaccan nation consists of 14 matriclans made up of several matrilineages living in various villages.

1.3. The Aucans

The origin of the name Djuka is unknown. A legend says that at the creek where they settled the runaway slaves found a djukabird which they knew from Africa. They first named this creek after this bird, and later their tribe, their language and their territory. The peace treaty with the Djukas was signed in 1761.

The tribe left Djuka Creek and travelled up the Marowijne River to settle mainly along the Tapanahony River. At the time of the peace treaty there were about 1600 Djukas. The name "Aucan," which is also used for the Djukas, originated as follows: the first white peace delegation set out from the plantation called Auca, situated along the Suriname River just beyond Joden Savanna. They followed a forest path of the runaway slaves to Djuka Creek, where the peace terms were negotiated and where the peace was officially concluded. The confirmation of the peace and the exchange of presents and hostages took place a year later at the Auca plantation. The Djukas were then referred to as "the pacified Bush Negroes beyond Auca," later abbreviated to "Aucans." By 1700 the Djuka tribe consisted mainly of runaways from plantations on the Suriname River. Their number grew by some hundreds in 1757 as a result of a revolt around Tempati Creek.

1.3.1 Economy

Traditionally, the economy of the Aucans has primarily been based on self-sustaining activities. These include hunting, fishing, agriculture and the gathering of forest products. Products that they could not supply themselves were at first taken from plantations and military posts through raids. Later, after peace was established, they were acquired from periodic supply deliveries from the government and through trade with the coastal area. Ever since these governmental supply deliveries were stopped, and limitations on travel restrictions were lifted around the middle of the 19th century, the Aucans have acquired products that they do not make themselves with money earned through trade with the coastal area or from employment.

1.3.2 Social structure

Djuka society has the following structure: every group coming from a particular plantation became the nucleus of a clan or *lo*. These *loes*, which usually settled in separate villages, were subdivided into families (*bere*).

1.4. Government

Under the peace treaties of 1762 and 1835, the government recognized Aucan rule. The highest authority is in the hands of the paramount-chief. He is chosen from a historically designated matriclan in accordance with matrilineal succession procedures. The chief looks after the

external and internal interests of his people. He exercises worldly and religious power. At the local level, authority is exercised by a village chief, a captain, and his assistants, the *basias*. They receive a stipend from the national government.

2. FARMING CHARACTERISTICS

Agriculture has traditionally been the most important activity among Maroons. It consists of subsistence agriculture aimed at providing for their own needs. Each matrilinear clan has historical rights to specific sites. Each adult has his own plot, on which rice, tubers, corn, and peanut are grown. This practice is known as shifting cultivation. Work on the plots is linked to the seasons and there is also a division of labor according to gender.

Every *bere* is allocated a large area in the vicinity of the village. The *bere* in turn allots the place where the individual is allowed to clear. Such plots usually lie outside the village and are about 1-2.5 hectares in size. Plots should produce year-round. Since these fields are not fertilized, nearly every year new plots have to be opened up in the forest. The owner returns regularly to the old plots to harvest. Thus, each family has a number of plots that vary in age to provide a complete diet.

Because of the need to clear a new plot every year, and because of the increasing population, farming activities have moved farther away from the villages over time. Distances of 10-15 km. have been observed. It may take a day walking or paddling to reach such a plot. When plots are so far away from the villages, farmers often spend weeks on location.

Soils in the interior are mainly highly weathered, leached soils that belong to the order of oxisols and ultisols (USDA classification). These soils have a high iron content, and low fertility. Therefore, the people prefer to use creek valleys and river terraces where the soil is more fertile. The plots should also be near rivers or creeks to secure water for the household. Irrigation is not practiced.

Planting starts at the beginning of the rainy season, in November. The way crops are planted resembles the tropical ecological system, which means that a variety of crops are intercropped in close range of each other, in a seemingly uncontrolled pattern. Harvesting takes place throughout the year (Appendix III).

The following crops are planted:

1. bananas
2. okra
3. callaloo
4. plantains
5. cassava
6. yams

7. rice
8. maize
9. chinese tayer
10. cucumber
11. sweet potatoes
12. klaroen
13. alibipesi
14. yard long beans
15. gogoma wirie
16. bitter gourd
17. pomtayer
18. su tayer
19. water melon
20. peanuts
21. sugar cane.

Planting, harvesting, and processing

Plantains

Small plantain plants are transplanted and arranged approximately 50 cm apart in tussocks. Planting can take place at any time of the year. Harvesting proceeds by simply cutting the clusters manually with a machete. Plantains are consumed after being cooked when either green or ripe. Green plantains may be processed to make baby food by pounding sliced plantains that have been dried in the sun. Roots of plantain trees are susceptible to root worms (mites).

Bananas

Bananas are consumed as finger fruit. The planting procedure is similar to the one used for plantains.

Tannia leaves

Young tannia leaf plants are transplanted in rosette-like arrangements in small tussocks at planting distances of 10-15 cm. Both transplanting and harvesting can take place at any time of the year. Tannia leaves are consumed as vegetables or cooked in soups (the well known okra soup).

Sutayer - chinese tayer

Planting is similar to tannia leaves. Every three months the plant is ready to be harvested, while the total life span is nine months. The tubers are cooked in soup (*bravu*), or mashed together with tannia leaves to be consumed as baby food.

Cassava - bitter and sweet

Cuttings are placed in groups in rectangularly loosened soil. Planting can take place at any time of the year. One growing cycle may take 9-10 months.

Sweet cassava is used in soups or cooked or fried. It may also be baked as *bojo*, a well known cake.

Bitter cassava is grated and processed to make cassava bread, *kokoriko* and *kwak* (porridge). The liquid that has been squeezed out is often processed to make casripa, and the deposit is processed for starch. Bitter cassava is the most important staple crop in the interior.

Dry land paddy

The soil is prepared prior to planting. The seeds are sown spread out. The seeds are covered with soil with a hoe, even the ones that land between other crops. Early December and early April-May are the planting seasons. The first harvest is brought in in early April, while the second harvest is gathered in August and October.

Harvesting procedure

Individual rice stalks are cut with a sharp knife and collected in bundles of 1/2 kg. The bundles are placed in the sun to dry for 2-3 days, depending on the weather. The dried bundles are stored in empty barrels protected from rats and other plagues. When ready, the stalks are threshed by pounding in a *matta*. The husks are removed in the same way. To collect the rice, the mixture is repeatedly thrown in the air over short distances until all loosened husks are removed. Rice is consumed when cooked, and is also a staple food.

Peanut

Sowing proceeds in small tussocks grouped in a square on beds. Planting and harvesting takes place every three months. Peanuts are processed to make peanut butter, and used in soup or a drink (*bodibo*). They are also used in a rice dish (*alesi ku pinda*). Peanuts appear to be a potential commercial crop.

Okra - klaroen - bitter gourd - yard long beans

These vegetables are sown at any time of the year. All are consumed as vegetables.

Gogomago - (Blaka wiri)

Gogomago is a herbaceous crop that comes up together with weeds immediately after a plot has been burnt. It is consumed as a vegetable.

Napi, sweet potato

Two or three tubers are grouped in tussocks. Every nine months the crop is ready for harvest. Both crops are consumed after being cooked in soup or water. Napi is a potential commercial crop.

3. FAMILY CHARACTERISTICS

The social position of Saramaccan and Aucan women is roughly the same. The woman is the center of the household. She is responsible for all farming activities, except for clearing the plots. She has to take care of the house and children. She may be either single or married.

If the woman is married, the man is the head of the family. He is allowed to have more than one woman. He controls the legal, economic and financial aspects of the family. He therefore has to make sure that there is money on the table. Normally the man has some form of primary education. If he is well educated, he moves out of the village (permanently) for a better paid job. Men usually have to work regularly or seasonally outside the village to earn money. Nevertheless, occasionally the man may be unable to support all his wives. It was observed that women fare better financially when they are alone.

The war in the interior led many families in the Moengo area to flee to French Guiana. Afterwards, the women returned with their children, while the men remained behind or moved to Paramaribo to earn money. Due to these developments many women in the Moengo area are single mothers. Within the Saramaccan tribe this was found to be less the case.

Maroon men in general do not view shifting cultivation as real agriculture. The large palm oil or banana plantations where money can be earned are viewed as "real agriculture." In the Moengo area, the men are involved in trading or employed at the Suralco plant. Interest in commercial farming is increasing among the men in the Moengo area, because the marketing opportunities are improving. French Guiana, especially, has become a favorable market for earning foreign exchange since the ongoing inflation of the Surinamese guilder. This is less the

case in the remote area of the Saramacca. Men are usually not interested in commercial farming.

4. FAMILY PARTICIPATION IN FARMING

Women are responsible for farming activities. When a Maroon woman has a husband, he is responsible for clearing the plot. If the man is absent, other family members may help. In the Moengo area, women may hire someone to clear the forest when farming commercially, or when the man is employed outside the village. Clearing is done with a machete, axe or chain saw, in the dry season. The other farming activities are solely done by women. If there are children, the females are the first who have to participate in the activities. Boys may help but they do not have to.

The farming activities that Maroon women are responsible for are: planting, tillage, harvesting and the further processing of food. After the plot is cleared, the debris is burnt by the female and her children, shortly before the rain starts. The man may help to remove or burn large stumps. The preparation of the soil for planting is done manually. She has a full daily schedule for doing this which starts by walking or paddling to the plot at 7:30 a.m. Then she works from 7:00 until 6:00 p.m. She only pauses to eat and drink. Women do not work on the farm on Sunday, considered a day of rest, and Wednesday, when they remain in the vicinity of the village.

5. MARKETING

The products derived from farming are used for self-subsistence in both societies. Surpluses are traded by men if transportation is available to Paramaribo. Commercial activities are most highly developed among Aucan women who are members of agricultural organizations A Sa Yepi, and the women's group pet Ondro. These women are, however, in a more favorable strategic position. From their location along the East-West Connection between Paramaribo, Moengo, Albina, and French Guiana, it is easier to reach regular markets, which stimulates commercial farming.

Traders, including the FAL (Federation of Farmers and Agrarian Laborers) regularly collect the products. If the products are not picked up, however, the farmers have to transport their products to Paramaribo themselves by car, which is very expensive. Since most of the women are alone, they are free to increase their production without interference from men. However, since it is possible to trade agricultural products in French Guiana for foreign exchange, men have become increasingly involved in farming. They may hire labor or marry more women to take care of the plots.

The marketing position of Saramaccan women is weak because the man controls the money and does not allow the woman to have her own budget. He considers it to be the task of the woman

to bear his children and take care of the food. So the use and value of money is very strange to many women.

When confronted with money as a trade, most women did not know what to do with the pieces of paper and the coins that were supposed to represent the value of their products. This situation accounts for the lack of interest of Saramaccan women in growing crops commercially. It was observed that surpluses were left in the field to spoil. Attitudes vary from village to village, however. In villages with missions the value of money is well understood by women.

It is not possible to describe the production according to crop, so it is impossible to estimate the production of a specific crop per hectare. Products that are guaranteed to sell for a reasonable price in the Moengo area are ginger, watermelon, peanuts, cassava, chinese tayer, pomtayer and napi. A product that is processed by women and their daughters is bitter cassava. They produce cassava flour or cassava bread. They also prepare casripo from the squeezed liquid.

Some products are gathered in the forest. For cooking oil, a variety of palm pits are gathered and processed. Many fruits are also gathered from the forest, e.g. awarra, marmadosoe, loka, spayopo, banda, patawa, djamaika, obe, swiet boontjie, amana, koemboe, podoserie which is used to prepare a cocoa-like drink, mope, pramaka, nenge udu. The names of these fruits differ from region to region.

Goods from the Moengo area are transported to Paramaribo or French Guiana by truck or pick up. If the farmer has to pay, it costs approximately Sf.5000 to Paramaribo. Transporting goods from the plots to the East-West Connection is done by walking with the goods on the head of the women, in most cases. Depending on the location of the plot, produce may also be transported in small boats that are made locally.

In the Saramacca area women carry the produce on their heads to the river or creeks. From there it is transported by boat to Poki gron. Then the goods are transported by bus or truck to Paramaribo. The further upstream the villages, the longer the trip will take. With rising oil prices, the cost of transportation eventually exceeds the profits.

6. TOOLS

Maroon farmers only use manual tools such as machetes, small knives, hoes, rakes and shovels. On the farms, especially the ones that are remote, there are improvised cabins to store the food. Plant material is gathered from old plots. Traditional seeds are used. In the Saramaccan region the humus layer and the ashes of the burnt debris are the only form of fertilizer. The use of fertilizers is increasing in the Moengo area, however.

Farmers in both the Saramaccan and Aucan regions do not have any legal rights to the plots they are farming. It is therefore impossible to use the plot to obtain a loan. Only in the in the Aucan

region do women participate in agricultural cooperatives that both stimulate production and provide services. The cooperatives A Sa Yepi and Pet ondro are described in Appendix II.

When the farming system is shifting cultivation, not much money is spent on buying tools or other farming equipment. In the case of some commercial farming, money may be used to pay hired labor.

There is no defined farm administration since farming is mainly for self-subsistence. When some form of commercial farming takes place, the husband manages all financial matters. When the husband works, he buys the necessary equipment. Occasionally the husband may sell the agricultural products, but most women complain that they never see a penny of it. Single women who farm commercially are free to manage their own farm, and the earnings.

7. HOW MAROON WOMEN SPEND THEIR TIME

Maroon women rise early in the morning and go to sleep late at night. Besides all the farming activities, they are responsible for keeping house, including the rearing of children. Girls are supposed to participate in the activities as early as possible.

In the Moengo area women are becoming more and more interested in joining agricultural organizations, so as to support each other. Two such organizations, A sa Yepi and Masanga, which are completely organized by women, are described in Appendix II. Some women may go to church on Sundays, while others participate in the traditional rituals of the tribe. Sundays and Wednesdays are the days that they may have some free time.

There are no women's organizations in the Saramaccan region. Women may go to church or participate in traditional rituals.

When the woman is not working on the farm, she produces utensils for the kitchen and other useful items. Calabash, especially, is used to make cups, bowls and spoons. Saramaccan women know some form of needlecraft with textiles and produce beautiful geometric patterns that are used for many occasions.

8. INFORMATION ON FARMING

Both Saramaccan and Aucan women learn farming skills from their families while growing up. Aucan women organized in agricultural associations in the Moengo area are advised and guided by a division of the agricultural department. They also receive advice on the use of fertilizers. Saramaccan farmers do not have this kind of service.

9. PROBLEMS AND ASPIRATIONS

9.1. Problems

The problems experienced by Aucan and Saramaccan women are roughly identical, but for Saramaccan women the problems are compounded because they are isolated from the outside world. The three main problems women have to deal with are:

- i) primitive tools
 - ii) lack of infrastructure
 - iii) oppressing taboos.
-
- i) Most tools used by women in the field are not ergonomically adapted. The use of short hoes and machetes means that working women are forced to bend their backs for hours in the sun. Baking cassava bread is unpleasant because the smoke irritates the eyes and noses of the women. It also causes physical problems to their lungs and joints. Furthermore, this method is not energy-efficient.
 - ii) Farms are spread throughout the forest, often at such long distances that it may take a day to reach them. Most of the time farmers walk over hilly areas with heavy loads that may exceed 100 kg. Some plots can only be reached by river. Women have to row themselves with the children to remote plots. When the plots are that far, cabins have to be improvised on location in order to spend a couple of weeks there. They lack the most elementary necessities for functioning on a human level. Only staple foods of low nutritional value are eaten. Mechanized transportation over land is hardly feasible, and it would be very expensive and labor-intensive to build roads. Beasts of burden are not used at all. For more on the infrastructure, see Appendix I.
 - iii) Maroon men in general do not believe that men are capable of transmitting AIDS, and there is no specific explanation according to them. They believe that a widow who neglects the necessary rituals will transmit the disease during intercourse with another man. She is still controlled by her deceased husband who, by transmitting any venereal disease, proves that the woman has not complied with the rituals. This is a good example of how women are regarded as carriers of evil.

Menstruating women are treated with hostility and everything around them is considered contaminated. They have to seclude themselves and behave normally.

When somebody dies in the forest, all farmers have to abandon the plot promptly, even in the harvest period. The harvest is then left to spoil, with all consequences.

Some recommendations are:

- It should be possible to alleviate the pressure through simple projects such as a nursery for children in the village. Young women and mothers could work as nurses in such a nursery. It is often hard for mothers to take care of the land while watching the children at the same time.
- A simple solution to ease the baking of cassava bread is to use charcoal instead of wood. This can be easily produced on the plots where half-burnt tree stumps are left as obstacles, and limit planting space. A simple project could be to provide instructions on how to produce charcoal on location, since there is no tradition of processing charcoal.
- To ease transportation by land, beasts of burden could be carefully introduced through a project. Special attention should be paid to taboos concerning animals.

9.2. Aspirations

Both Aucan and Saramaccan women want their children to attend school. They want them to become something important, like physicians, traders or commercial farmers. In the Aucan region more and more women view their farms as a business. In the Saramaccan region this is less the case, because of the remoteness of the region.

10. CONCLUSIONS AND RECOMMENDATIONS

In spite of the matrilineal system of Maroon society, the role of women is limited. Motherhood and food production are the elements women have to comply with. The dominant role of the man in regard to finances, and the strict traditional rules, interspersed with taboos, leave women with little room for self-improvement.

The rationalization of plots under shifting cultivation, availability, and the introduction of monoculture should be given careful consideration. Many seemingly irrational farming and processing systems have proven their empirical value over time. So-called advanced farming systems are not superior under all circumstances. Shifting cultivation is not only traditionally incorporated into the daily life of the people, but is ecologically well adapted. The variety of crops, even when output is low, provides an acceptable form of food security. Some crops are more susceptible to damage by insects and other animals than others. In this way there is always something left to harvest. That would not be possible with monoculture. So this mixed culture guarantees a constant flow of food for self-subsistence. Knowing this, it is clear that women must have a great deal of intrinsic strength to survive in spite of the additional pressures from their society. This strength clearly indicates great potential for self-improvement.

APPENDIX I

ADDITIONAL RECOMMENDATIONS

Infrastructure

It is hard to develop an area without adequate infrastructure, and even if provisions are on location it would not be effective without heathery. The term "infrastructure" should be viewed as something concrete -a series of provisions, facilities and structures.

Provisions

- Extensive roads for motorized traffic
- Accessible paths - tree stumps and other obstacles should be removed
- Waterways should be cleared of obstacles such as tree stumps, while *ramparts* should be maintained and built to suit the needs of the farmers, e.g. not too steep nor too far from the lowest water level, and not too small.

Facilities

- Sheds for building boats and storing tools
- Storehouses for agricultural products
- Packing material does not have to be imported, but produced locally, e.g. wooden crates and baskets; there is enough raw material in the forest for this type of product.

Structures

- Information on marketing
- Quality requirements
- Processing methods of farm products to final consumer products
- The above aspects should influence the attitude to production.

APPENDIX II

CASE STUDIES

The case of a single woman

Rita Linga is 33 years old and has six children from two marriages. There are five girls and one boy. Their ages range from 3-16 years. Rita comes from a family of five children. She started working in the field as a young girl and was not allowed to attend school. She learnt how to clear the land, plant, gather and harvest. In this way she was playfully introduced to the traditional ways of the Saramaccan woman. At 17 she had her first baby.

Rita is now a single mother and takes care of herself. She had left her second husband because he oppressed her. He sold all her products, without ever paying her. He made his own decisions without consulting her. According to Rita, she is better off without a man, free to earn her money, and able to make her own decisions.

Rita has always worked in the field and taken care of the food for the family. In addition, she tries to earn some money. At the end of the dry season in October she asks her brothers and cousins to clear a new plot. She works every day of the week except Wednesday and Sunday. She starts at 8:00 a.m. and works through to 6.00 p.m. She plants everything -especially peanuts, because she can earn money with this crop. She would like to increase her production.

According to her culture, brothers are responsible for their sisters' children. Three of her children are at school in Paramaribo. They live with her elder brother. Rita wants her children to be educated so they do not have to suffer the same fate as her. She is aware of the fact that education guarantees better possibilities for the future.

Rita is a Christian. On Sundays she attends church in a neighboring village with her children.

The case of a woman with a husband

Bernice Nene is 43 years old and Apina Mayana's first wife. She has borne him four children. Apina has two wives. Every year he helps to clear her plot, and may also help with burning the debris. Bernice then works every day except Wednesdays and Sundays. When sick or during ritual periods, she does not work. Sometimes, the children help. Apina wants to help her during harvest, but she prefers to work alone or with the youngest son. According to Bernice, she would be better off without a man, because she cannot rely on him. He controls her money and never buys her anything nice. He never built her a house, while he did for his second wife. There appeared to be rivalry between her and the other woman. She lives according to the traditional rules of the village. When the plot is burnt, she prays to the forest god *Apyku*, to appease him. She also prays every year to *Gado Akamia*, to appease him and seek guidance. The whole village is involved in the prayers.

The Masanga Association in Petondro

There are many single women in Petondro. They are united in the Masanga association. The chairman is Rinia Koeli, while Ida Harderwijk serves as the secretary. The women are not associated with the A Sa Yepi agricultural cooperative from Moengo. The women in this association help each other in turns during planting and harvesting. Men and children may also assist during weekends. They prefer not to grow vegetables because more intensive management is required. Most of the time the plots are located along the Ricanua creek, and it takes one-and-a-half hours to reach them. At high tide it is possible to get there by boat, but in the dry season they have to walk. They practice shifting cultivation. Chemicals are not used. Prior to leaving home in the morning the woman has to cook and prepare the children for school. Most women have six children. The East-West Connection is a very important road.

The A Sa Yepi agricultural cooperative in the Moengo area

This agricultural organization has 200 members, 80% of whom are women of predominantly Aucan origin. Georgetina Mamatu is chairman, while Marlene Tima is the secretary. The organization has existed for five years and the secretary is located in Moengo. Most female members of the cooperative cannot read or write. Their husbands may be employed by Suralco or the government.

Members of this organization farm in the vicinity of Moengo. They do not have any title to their plots. They grow mainly pomtayer, chinese tayer, napi, sweet cassava and ginger. Women work every day except Sunday. They hire labor to clear their plots. If the man has spare time he may assist in farming, but this happens rarely.

The FAL and other small traders regularly travel from Paramaribo to the area to buy the produce. When that does not happen, farmers have to pay an estimated Sf.5000 to transport the goods to Paramaribo. The members are regularly advised by the regional office of the Ministry of Agriculture on the use of fertilizers. As a result, they are slowly abandoning their traditional shifting cultivation practices.

Transportation to the plots appears to be a major problem. It costs approximately Sf.400 a day per person to reach the plots. They therefore need transportation to the field as well as transportation to Paramaribo, to deliver their goods for a better price.

Most women have a family of 5-10 children. The children attend the schools in the area and may assist in farming during the holidays. Women want their daughters to be educated so they do not suffer the same fate as their mothers.

APPENDIX III

Name	Cultivation	Date of planting	Harvest	Processing and Consumption
Pineapple	Small plants placed in nurseries, approx. 30 cm apart. No beds or drainage systems	All year	All year	Cooked or raw dried and processed to make baby food
Beans	Idea. Rows are ploughed by women and manure used	Idea	Idea	Ripe fruits are consumed
Tandis leaves	Planted in small nurseries to form a routine pattern, 10-15 cm apart	Idea	All year	Vegetable
Soybean	Idea	Idea	Idea	Tuber and soup
Chinese eggplant	Idea	Idea	Idea	Soup and mashed baby food
Cassava (main crop)	Cuttings are stuck in groups in ridging nurseries	Idea	Idea	Sweet cassava is used in soups, cakes, and conboid. Bitter cassava is ground to prepare cassava bread, baked porridge, bank, curries from the extraction, and starch.
Dry Peabody	Seeds sown wide apart, land between other crops where a few plants	Early December until early April/May	March/April August, October	Peeled by pounding, consumed as cooked rice or porridge
Peanut	Sown in small nurseries, grouped in a square formation. Other beds are prepared for subsequent drainage	Every three months	Every three months	Peanut butter, processed in drinks and soup
Onion	Grown on fertile soil, immediately after burning	All year	Mainly around April/March, August and September, All year	Vegetable
Kilimanjaro	Idea	Idea	Idea	Idea
Gugum-ndi or white yam	Idea	Idea	Idea	Idea
Bitter gourd	Grown as a creeper	Idea	Idea	Idea
Yard long beans	Idea	Idea	Idea	Idea
Pumpkin	Tuber is placed in loosened soil	At the end of year	Ripe within a year, is harvested all year	Cooked in soup. Squashes are sold in Paramaribo
Sage corn	Idea	All year	Idea	Used as a sweet
Mango	First crop sown after the plot is burned	Beginning of the plant period	Every 3 months	Porridge, chicken food, cooked
Maji	Tuber is placed in nurseries in groups of 2-3 plants	Every 6 months	Idea	Soup, cooked tubers
Sweet potato	Idea	Idea	Idea	Cooked tuber
Yam	Idea. A variety of yam.	Idea	Idea	as vegetable
Cassava	Grown occasionally	All year	All year	As fruit, or occasionally as commercial crop
Water melon	On the ground	Small quantities	Dry season, August/September	

APPENDIX 2

**INTRODUCTION TO THE LIFE AND
CULTURE OF NATIVES OF SURINAME**

The Role of the Native Woman in Agriculture

by

Josephine Aluman

*Woman,
mother of the
endless cosmos
your womb
every time
gives us hope
you are
eternal energy
keeping us alive*

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Preface

This manuscript was prepared at the request of the women's division of IICA, which is investigating the relationship between women and agriculture in the Caribbean. Studies conducted by Dr. P. Kloos, Dr. Kloos-Adriaansen, A.W. Albrinck, and information from Cirino, Nardo Aluman and others, were used to compile the information presented in this manuscript.

It is good to know that both national and international organizations are interested in the cultures and opinions of the native tribes of our country, although it is extremely difficult to provide a broad description of all of them. However, the contents of this manuscript do, in a general way, represent the way of life of the diverse native tribes of Suriname.

We hope that a better knowledge of our people, in particular women in these societies, will stimulate development in the interior.

Nardo Aluman
Paramaribo, January 1994

1. INTRODUCTION

The natives of Suriname are referred to as "indians." This name was accidentally given to the people Columbus met when he first arrived in South America. An estimated 20 000 natives are spread all over the country. Two distinct groups are evident, according to the regions where they live: the upland and lowland natives. The upland natives are the Wajana (2000 in number), and the Trio and other allies (3000 in number). The lowland natives are the Carinas or Caribs (9000 in number), and the Lokonos or Arowaks (6000 in number). Every tribe speaks its own language. The Caribs and the upland natives appear to speak languages that belong to the same family. Descendants of the Carinas also live in French Guiana, Guyana and Venezuela. The traditional lifestyles and culture of the natives, however, are similar, with only slight differences.

The natives once lived as nomads. Over the years they were encouraged to permanently settle in villages, by mission workers from the Catholic Church. However, some form of semi-nomadic life is still apparent in the isolated upland villages. Approximately 40 native villages are known, and these are listed in Appendix I. It should be mentioned that ongoing fighting between the so-called "jungle commando" and the National Army has disturbed, sometimes even wrecked, the way of life in many native villages.

1.1. Government

Every village is governed by a Captain, with at least two assistant (*basjas*). Captains were installed by the colonial administration. A *basja* can be either male or female. The authority of the captains has been undermined since the fighting in the interior began. The traditional authority, however, is also under scrutiny since it appears that in the past leadership only occurred in wartime. Such leaders were not involved in governing, and were therefore not accepted in peacetime. In general, the natives do not appreciate interference in their business, and are strongly opposed to people who behave like leaders. Influential persons were the *pyjai* or medicine man, the initiator of the village, and the older women. Recently, young persons have been assuming the role of captain.

Nowadays young natives are becoming more involved with their culture, and the socio-economic situation of natives in general. For some years they have been drawing closer together through the Organization of Natives of Suriname (OIS), a member of the international organization known as COICA (Coordinadora de las Organizaciones Indigenas de la Cuenca Amazonica), located in Quito, Ecuador. At the national level, the natives work together through the Organization of Village Heads (VIDS). These organizations strive for recognition of the rights of natives, and for a return to traditional authority.

1.2. Culture

Rituals are important in the lives of natives, especially the ones in the upland regions. Some of the rituals have been lost in the coastal areas. The rituals affect farming due to the time that is devoted to such occasions, and the urgency of performing them. Appendix II gives a

description of the role of the *pyaiman*, initiation rituals for girls, the rituals surrounding death, and weddings.

1.3. Means of subsistence

The natives live in a varied environment. It may be near the sea, rivers, creeks, swamps, or in the savannas or tropical forest. The environment is used for agriculture, hunting and fishing, and gathering the means to build houses and prepare boats. All this is done according to yearly cycles, which are described below. The year (*sirito*) is divided into four seasons, according to rainfall:

- The main dry season, which starts in July/August. During this period fields are cleared and houses and boats are built. As the season proceeds, fishing activities increase. Because of lower water levels in the rivers, creeks and swamps, fish are abundant.
- The short rainy season from mid-November to January. Most of the time is spent cultivating new plots. Christmas and New Year are celebrated. The rest of the season is spent farming the plots, and putting finishing touches to the house or boat.
- In the short dry season in February, a small plot may be cleared, burnt, and cultivated. Attention is turned to the rivers and sea for fishing and catching turtles.
- The main rainy season, which starts in May. Many families spend their time at home. During the day, the men fish or weave baskets. Women manufacture ceramics and weave hammocks.

The diet of the natives is as follows. Most of their daily food comes from the plots they farm, fishing, and hunting. Natives are not used to eating leafy vegetables. Every day they eat cassava, cassava soup, tubers, fish, meat topped with fruits from the forest such as awara, maripa, kumbu, wasai (podosiri), mope and others. In addition, groceries such as sugar, salt, onions, cooking oil and bread are bought. Crabs and turtle eggs are a very important part of the protein intake.

2. FARM CHARACTERISTICS

Farm characteristics vary from area to area and are according to the level of westernization. In most of the villages, farming is for self-subsistence. Every family has 1-3 plots. The method of farming is shifting cultivation, which means that a field is cultivated over a period of 3-5 years, and then abandoned. Every year a new field is cleared, or the previous one expanded. In the isolated upland villages such as Apetina and Palumeu, a semi-nomadic lifestyle is still evident. Every 5-10 years the people relocate the villages, when the soils in the vicinity of the old location are depleted. They return after approximately 10 years to the old location.

According to the culture of the natives, nobody owns the land, and when a plot is used for farming they regard it as "borrowed." Therefore, each individual who is able to clear a plot is free to making the choice of location on a first-come first-served basis. In some areas, however, this no longer applies. In Bernharddorp in the Para district, a number of natives do have areas on government lease and with title.

The choice of location depends on soil, drainage, vegetation, and distance. The natives prefer well drained, loamy soils. The type of forest cover depends on the age and strength of the owner. Secondary forest is easier to clear than primary forest, but on the other hand pests, weeds and diseases should be less of a problem. Slow-growing hard wood trees are avoided (e.g. groenhart, letterhart).

A walking distance of 30-45 minutes to the plot is the limit with regard to location. Paddling distances of 1-2 hours are acceptable.

Even though religion is becoming less important in most villages nowadays, three trees are avoided when selecting the location. The trees are locally referred to as takini, kuasini and kankantrie. According to the natives, they harbor strong and violent spirits.

Both villages and plots are near rivers and creeks for water availability. It is common to have one or more wells for households, especially in villages in the coastal area. The villages in the interior use water from creeks and rivers.

Apura is the only village where cattle are known to have been kept. No one is certain if farmers still engage in livestock activities.

The activities on a new plot usually start in September, after the plot has been cleared, and continue throughout the year. A variety of crops are grown at once, but the main crop is bitter cassava. The first crop grown on a newly cleared plot, however, is maize.

The following is an overview of the crops grown on the plots:

Tubers

Cassava

-Bitter cassava.

Reproduction by cuttings. Harvested after six months when grown on fertile soils, but in general after 9-10 months. Harvesting takes place year round.

-Sweet cassava.

Reproduction is by cuttings. Machetes and hoes are used as tools. It is grown only rarely. Cooked with fish.

-Napi

Multiplied by cuttings, machetes and hoes are used. Grows as a climber on sticks. Deer like to eat the leaves and tops bare. It is consumed in the same way as sweet cassava.

-Sweet potato

Multiplied by cuttings. Hoes and machetes are used. Grows as a creeper. Some varieties are eaten, but the most important one is deep purple and used to color alcoholic drinks.

-Pomtayer

Hoes and machetes are used. Pomtayer is the most important commercial crop for the natives in villages in West Suriname, Donderskamp and Tapuripa. They sell large quantities to traders in Nickerie and Paramaribo.

-Yams

Hoes and machetes are the tools used. It grows as a climber and is used like napi.

Grass-like (graminea)

-Maize

A stick is used. It is the first crop sown after the plot is burned. It is cooked when half ripe, or roasted and eaten as a sweet, or consumed as maize porridge.

-Sugar cane

Multiplied by cuttings. Hoes and machetes are used as tools. It is chewed as a refreshment, or squeezed with the simple, original native squeezer. The juice may be consumed fresh or fermented to an alcoholic drink. Mixed with other alcoholic drinks it provides a delicious but strong brew.

Fruits

-Watermelon

Sown. A stick is used. It is a sensitive crop that often dies.

-Pumpkin

Sown. A stick is used. It grows easily around the camps.

-Pineapple

Multiplied by cuttings. Several types of pineapples are planted. The fruits are consumed or sold.

-Pepper

Pepper is transplanted.

A native meal without pepper is unthinkable.

-Peanut

Sown with a stick. Peanut cultivation is increasing among villagers. The crop is sold in an unprocessed state.

-Plantains and bananas

Young plants are transplanted. Hoes, shovels and machetes are used during cultivation.

Plantains are often sold, while bananas are consumed when ripe. Surpluses are sold.

-Cotton

Sown. Sticks and knives are used as tools. It is not used for consumption but is the most important raw material used to produce strong, handmade, natural hammocks of an original design.

-Kusuwe

The red fruits are used as body paint during rituals. It is also used as medicine, and as a mosquito repellent.

Fruits are an important part of the diet of natives.

Like cotton, kusuwe and calabash, a tree in a village is the private possession of the person who planted it. The owner of the tree does not have to live near the tree, or may even move to another village. As long as someone takes care of it on the owner's behalf. An abandoned tree becomes community property. The following is a list of trees:

Trees growing around villages

-Mango

Young trees are transplanted. Sticks and knives are used. In the villages of Christiaankondre and Langamankondre, several hundred mango trees are growing. Mango trees are typical of old abandoned villages.

-Coconut

Transplanted. The hoe is the tool used. Besides the tall Surinamese coconut, the imported dwarf coconut is popular. Hybrids are also doing well, and produce better.

-Guava

The stick and knife are used. The yellow fruits are eaten by children.

-Bread fruit

The young trees are transplanted. Sticks and knives are used as tools. The large fruits are not always eaten.

-Sterappel

The young plants are transplanted. Sticks and knives are used. It is a favorite fruit tree.

-Oranges, grapefruit and pompelmoes

The plants are bought in Paramaribo. Young trees are susceptible to ants.

-Lime

Widely used in many ways.

Trees growing wild

-Cashew

Grows in the savanna areas.

-Maripa

A palm growing around villages. Fruits are eaten, while oil may be extracted from the center.

-Awara

The fruit is eaten by hand or processed. The center has oil that can be used just like maripa.

-Mope

Children eat the fruits

3. FAMILY CHARACTERISTICS

Accessible villages are influenced by the values and standards of western society. Less accessible villages live according to the old traditions. These villages are only reached by airplane, e.g. *tepu*. The Catholic Albrinck Foundation (PAS), MEDICEPS, and The Medical Mission Work Foundation (SZM) are the only link with the outside world. Sometimes there is radio contact.

Most of the native families are nuclear (father, mother and children), while extended families also exist with grandmother, grandchildren, etc. In extended families, the married woman usually resides among her maternal allies. This position is beneficial because she can rely on her kin, and may increase her influence during her life. Mothers and daughters work closely together. The more married daughters live in, the easier the tasks for each woman, and the greater the influence of the mother, compared to the father.

In the westernized villages, some responsibilities are shared equally. Married women have their own independent activities, such as keeping the house and rearing the children, while others are shared with the husband. She is allowed to have her own income when she sells her agricultural produce or ceramics. She has a voice in decision making, e.g. the location of the plots, and the right to speak on her own behalf at village meetings.

In the upland and isolated villages, the man is the head of the household. Women are more submissive with regard to decision making and voicing their opinions. Men are in charge of dealing with money. Since the people in these villages are solely depended on their own, farming is only for self-subsistence. The daily task of producing food is more intensive.

The husband is often absent. Besides clearing plots, his activities include:

- clearing paths leading to the plot
- hollowing out tree stumps to make boats, and transportation to the riverside
- building cabins by chopping the wood and weaving roofs with palm leaves
- splitting straw to weave baskets, preparing bows and arrows
- fishing and processing fish (drying)
- hunting.

All this is done together with other male members of the village. Women's activities are inside the house and on the farm (more in "How Women Spend Their Time").

Before the fighting began in the interior, there were some commercial activities such as timber in the vicinity of the villages. Many native men were employed by these. Because of the closing of these plants due to the fighting, the natives lost their income and moved away from the villages, e.g. the villages Asepende and Copie were abandoned.

4. FAMILY PARTICIPATION ON FARM

Clearing the field is the task of the husband, sometimes assisted by a group of men (*mohsiro*¹). This is done at the end of the main dry season in August. First the small trees are cleared with machetes, and then tall trees are cut down with an axe or chain saw. The debris is burnt at the end of September, when the moon is full, by the husband assisted by his sons and wife. If the rains begin prior to burning, the field is abandoned until the next year. In the short dry season small plots may be cleared.

Trees are not removed from the plots. The lighter stumps are carried home by the women for use as firewood. In some villages the man may take care of that. The stumps on the outside

¹ The *mohsiro* is a system whereby natives help each other. The husband invites a group of men to participate in clearing. Prior to clearing, he provides food and cassiri. After clearing the land the participants eat again, and may end up celebrating with family members.

of the plot are arranged as a fence. If the plots are not far from the premises, the softer wood of tall trees is chopped gradually to be used as firewood.

Women are responsible for cultivating, maintaining and harvesting the plots, assisted by the older sons and daughters. Planting takes place when the moon is full. According to the natives, crops will not grow when the moon wanes. The period of planting may last for months. Planting may be done in the morning or afternoon. The only day when no planting is done is Sunday. Tillage does not take place. Planting holes are dug for tubers and crops. Ash concentrations left behind by burning are sometimes gathered and used on the sensitive plants as fertilizer.

At first glance, the arrangement of plants on the plot appears chaotic, but it is done according to experience, accumulated over the years. For example, sugar cane is planted on the low side of the plots, because it needs moisture, and at the border of the plot since it grows profusely. The plants are maintained by weeding.

Harvesting takes place year-round. Women are supposed to know exactly when a crop is ready to harvest. Whenever she needs a supply, she gets it from the plot. This may happen once a week, assisted by family members. She carries a special basket (*kuru kuru*) on her back, attached to her forehead. Weights of 30-40 kg are carried in this way. The first harvest of bitter cassava is followed by a ritual. A basket with the first harvested bitter cassava is put aside to prepare *cassiri*. The *cassiri* is drunk by family members. Visitors may join. The place where the cassava is dug out is replanted immediately.

5. MARKETING AND PROCESSING

Commercial farming takes place in a number of coastal villages, especially the ones near the eastern and western borders of Surinam. These are Apura, Christiaan kondre and Langaman kondre. The villages accessible by road also engage in commercial activities, e.g. Cabenda village. Donderskamp is also one of the villages with some commercial farming activities. The isolated upland villages farm for self-subsistence.

Ceramics and woven articles are regularly sold in Paramaribo, mainly by women. Woven hammocks are manufactured from cotton. The fact that native women play such an important role should be taken into account when designing plans for the future. The Catholic Albrinck Foundation (PAS) occasionally transports crafts from the isolated upland villages for sale in Paramaribo. The Foundation Medical Mission Work (SMZ) also has a specialty shop for selling native crafts in Paramaribo. Typical craft items are hammocks, baskets, beading, dresses and pottery. In Paramaribo there is an organization called Worokarijo that also tries to export manufactured and agricultural products.

In the accessible villages, the individual villagers may take care of their own commercial activities. In Bernharddorp, for example, commercial agriculture activities are facilitated by the PAS.

Pomtayer is the most important commercial crop for Apura, a village in West Suriname. Large quantities are sold to traders in Nickerie and Paramaribo. The village of Donderskamp also produces large quantities of pomtayer. In addition, they grow water melon and pumpkin. However, they do not have markets for selling these products.

A number of villages daily deliver fish, meat and agricultural products to the local markets. These villages are Galibi, Matta, Powakka, Bigipoika, Washabo, and Apura.

The most important processed agricultural products are cassava bread, the main staple food, *casripo*, a taste maker for food, and *cassiri*, an alcoholic drink that is also used in many rituals.

6. TOOLS

The tools used to farm are the hoe, sticks, knives and the machete. Certain plants are bought in Paramaribo, e.g. oranges, grapefruit, lime, and pompelmoes. In the villages where the activities are commercial, such as Apura, organic fertilizers are prepared. The only way of storing meat, fish, plantains and bananas is to tie it up in the air in a cabin, with a fire underneath, against flies and other insects.

The only agricultural cooperative that appears to be active in a native village is the Warishi agricultural cooperative in Apura (West Suriname). Attempts to set up cooperatives in other villages have so far been unsuccessful, because of leadership problems.

7. GOVERNMENT INFORMATION

The role of the government is occasionally evident in the village of Apura. It mainly distributes inputs such as fertilizers and chemicals through the local cooperative.

It should be mentioned that the PAS (The Albrinck Foundation) is an important mediator in development plans regarding the areas of the natives. The activities in Bernhard dorp have been already mentioned. With the help of international organizations, efforts are being made to rehabilitate the villages that have been abandoned or even destroyed because of the fighting in the interior. Small-scale agricultural projects are encouraged, and through this organization the resources are supplied occasionally. In 1986 an extensive agricultural development plan for all villages was drawn up through this organization. The fighting in the interior jeopardized the implementation of those plans. Although as a rule the natives do not easily accept leadership, they appear to trust this organization.

8. HOW WOMEN SPEND THEIR TIME

Native women spend time farming at the plot daily, except Sundays. They also prepare the daily meals. The traditional staple food is cassava bread prepared from bitter cassava. It takes time to prepare cassava bread. The bitter cassava is first carried from the field, then washed and peeled. Older children assist in this operation. The cassava is squeezed in the matapi. All this work takes one full day. After two days, the squeezed cassava is pounded to flour in an *ako* (*vijzel*) and sieved through the *manari* (sieve). The collected flour is then baked to large round cassava cakes without adding anything. Alcoholic drinks and juices are also prepared by the woman, such as *cassiri* from bitter cassava and wines from pineapple, maize, bread and rice.

The tasks of women are as follows:

- rearing and nurturing of children
- cooking of daily meals
- gathering of wood
- work on the farm
- preparation of alcoholic drinks such as *cassiri*
- sewing, including traditional dresses, for both men and women
- weaving of hammocks
- keeping house
- preparation and implementation of initiation rites for girls
- painting of ceramics and body parts
- composing and singing of mourning songs at burials
- manufacturing of gems for men and women
- sale of agricultural products and crafts on local markets
- assisting husband.

The number and ages of the children make a difference to the women's workload. Older children, especially females, assist in most of these tasks.

There are a number of women's cultural organizations that should be mentioned:

1. Sano maro esa (Paramaribo)
2. Worijan Waponaka women's organization (Galibi)
3. Organisation of Natives in Suriname (women's section)

These organizations are involved in cultural and theatrical activities.

9. PROBLEMS AND ASPIRATIONS

Problems encountered while farming are:

- **Pests such as fungi, grasshoppers, ants, and caterpillars. Wild swains and deer also cause damage to plants. Inputs are very expensive and not worth the effort since the cost is greater than the profits that can be obtained.**
- **Long walking distances to the plots and the lack of transportation are common complaints. Due to the inflation of the Surinamese guilder, fuel has become expensive. Transportation by vehicle is therefore not a solution.**
- **In addition, there are hardly markets where they can sell their products. If these problems were solved, farming would have reasonable prospects.**

The future of the females lies in their own villages. Most girls return to the village after finishing school, to live according to the traditional rules. In recent years, more and more woman have chosen to be educated, especially in the villages that are easily accessible in the coastal areas.

It is common knowledge that since the fighting native men have lost their jobs and become more and more dependent on their wives, who have continued farming. In the coastal areas especially, it appears that women are aware of their contribution in the household, and consider themselves emancipated enough to engage in independent activities.

LITERATURE CITED

- ALBRINCK, W. G. 1931. Encyclopedie de Kariëben. Amsterdam, Verhandelingen der Koninklijke Academie van Wetenschappen.**
- ALUMAN, NARDO; CIRINO, C. 1975. Indianen in Suriname. Paramaribo.**
- _____. s.f. Literatuurstudie tussen 1970-1992. In 1992. Woorden die diep wortelen (ed. VanKempen. M. and M. Srule-Krzyanowski); 1987. Deus ex Machina; 1990. De Gids; 1989. Verhalen van Surinaamse schrijvers. De Arbeiderspers, Amsterdam.
- KIBAN, R. J. 1966. Muziek zang en dans van de Kariëben in Suriname, Paramaribo. Stichting Etnologische Kring Suriname.**
- KLOOS, P. 1971. The Maroni river Caribs of Suriname. Assen, van Corcum.**
- KLOOS-ADRIAANSEN, A. G. 1974. De kinderen van Galibi. Universiteit van Amsterdam, Afd. Culturele Antropologie.**
- MALMBERG-GUCHERIT, H. 1994. Geschiedenis en cultuur van de indianen/inheemsen.**

APPENDIX I

LIST OF VILLAGES ACCORDING TO TRIBE

District	Village	Tribe
Marowijae	1. Christiaankondre (Galibi)	Caribs
	2. Langamankondre (Galibi)	Caribs
	3. Erowarte	Caribs
	4. Tapuku (Apotyry)	Caribs
	5. Pierrekondre	Caribs
	6. Marijkedorp (Anjoemarakondre)	Arowak
	7. Bigiston (Tymarea)	Caribs
	8. Alfonsoedorp	Arowak
	9. Calbo	Caribs
Commewijne	10. Saponda	Arowak
	11. Copie	Arowak
Para	12. Cassippora	Arowak
	13. Redi Doti	Caribs
	14. Pierrekondre (Suriname river)	Caribs
	15. Powakka	Arowak
	16. Pikin Powakka	Arowak
	17. Cabendadorp	Caribs
	18. Wit'santi	Caribs
	19. Matta	Arowak
	20. Pikin Saron	Caribs
	21. Bigi Poika	Caribs
	22. Bernhardtorp	Car/Arow
Wanica	23. Pikin Poika	Caribs
Saramacca	24. Mahokreek	Car/Arow
	25. Columbia	Caribs
	26. Grankreek	Car/Arow
	27. Kalebaskreek	Caribs
Sipaliwini	28. Corneluskondre	Caribs
	29. Konomeumy (Donderkamp)	Caribs
	30. Tapuripa	Arowak
	31. Apura/Washabo	Arowak
	32. Kawemahkan	Wayana
	33. Palumeu	Wayana
	34. Apetina	Wayana
	35. Pleiekondre	Way/Trio
	36. Kwamalasemutu	Trio
	37. Tepu	Trio
38. Tibiti Sabana	Caribs	
Nickerie	39. Post Utrecht	Arowak
	40. Cupido	Arowak

APPENDIX II

CULTURE AND RITUALS

The *pyai*

The *pyai* is the medicine man of the village. He is capable of freeing his patients from all the spirits that are the cause of their problems.

Spirits are thought of in different ways. *Aka* is the human soul that goes to heaven after death and does not have contact with humans. The *Ekatonymbo* spirit arises after death, and may disturb the living if the deceased was a bad person. Another spirit is the *Aky* that is attached to something, e.g. a tree, water or stones. Then there are the *Jumy*, the fathers and grandfathers of the animals and trees, e.g. the *Kaikusie Jumi* (Tiger-Jumy). The *Jumi* is an abstraction. When there is going to be a natural phenomenon, the *jumy* appears in the form of an animal.

Another category are the independent spirits that are attached to humans. The *jukuwa* is the spirit that assists the *pyai*, while *ekosano* is the protective spirit the *pyai* can give to the patient. If the *pyai* ignores a taboo he is killed by the assisting spirits.

The water spirit *Okojumu* cannot stand the smell of menstruating women, so a number of restrictions are imposed:

- Menstruating women avoid water. After their period, the hands are washed with cassava before going to the river.
- A man does not have intercourse with a menstruating woman, and she is not allowed to prepare his food. Otherwise he may risk being attacked by *okoyumu*, because he or his tools are contaminated.
- The *pyai* avoids menstruating women, and brings his own bank to a celebration to reduce the chance of contamination. Because of this he cannot assist his wife during labor.
- The father of a newborn baby has to stay home because he is contaminated, and in danger.

Pregnancy and birth

During pregnancy a woman continues to do her daily tasks. For heavier tasks, the mother may lend a hand. When she goes into labor, she stays in a compartment in the house that is isolated for the occasion. An older woman, or the husband, may assist her when she is in labor. The woman, however, does most of it by herself. The newborn baby is washed with warm water

and wrapped in clothes. During the first week she and her husband are not allowed to work. A family member takes care of the house.

Initiation

Carib girls undergo an initiation ritual when they menstruate for the first time. They are isolated and have to start weaving a hammock. They live soberly and eat little and only simple food (no sugar, milk products or beef). They have to wear old clothes and should talk as little as possible. When menstruation ends, they have to wash themselves early in the morning in preparation for the cotton or ant trial.

The cotton trial is as follows: pieces of burning cotton are placed in her hands and she has to toss them from one hand to the other until they burn out.

The ant trial proceeds as follows: the hammock of the girl is filled with large forest ants or *juku*. She has to sit in the hammock and stick her hands in a bowl filled with ants.

Both rituals may be used for one initiation. The trials are led by an elderly diligent woman. She symbolizes the responsibilities of a grown woman who does not have time to lie in the hammock, and always has her hands busy. After the initiation, the girl is dressed properly and painted. A *cassiri* celebration is given, but the girl has to lie in the hammock and does not participate. From now on she is marriageable and officially allowed to participate in celebrations and parties.

In the Wajana villages, boys also undergo initiation. Wasps and ants are used for the rituals. The rituals are almost in the coastal villages.

Weddings

Natives mainly marry among themselves. Sometimes there are weddings with other races. Native marriages are monogamous and very stable. The first year of marriage is regarded as the trial period, and partners sometimes separate. There are hardly any divorces after the first year. If one partner dies, the other is allowed to remarry. Nowadays weddings are arranged by the couple themselves, instead of the parents.

Wedding ceremonies are very simple. The couple may wed at the registry office, or in church. In Galibi, mass weddings of 30-40 couples are commonplace.

Rituals surrounding the death of a member of the community

Suppressed, touching, mournful cries spread rapidly through the village to announce the death of a native of the village. At this signal, the villagers gather as soon as they can in the house of the deceased. The message is sent to the head of the village and his assistants. They spread the news further.

The corpse of the deceased is laid out immediately, bathed with herbal water and dressed in new clothes while certain body parts are colored with *kusuwe*. The corpse is then placed in a hammock in his/her own house with the legs showing and pointing eastward, the direction in which the soul is supposed to travel. Guided by the female precentor, the women perform *karwasi* songs and dances around the corpse all night long. The *karwasi* is a rattle with *karwasi* seeds that makes a clear noise. The corpse is buried by some families and friends the next day. They may sing some religious hymn and say prayers, or if a priest is present he may perform a burial service.

After six weeks family members may officially invite the rest of the village to participate in *epekodono*, in a celebration called *omagano*. *Epekodono* takes place roughly one year after the burial. Until then they are not allowed to cut their hair or join in celebrations, and they have to live as simply as possible. During *epekodono* the hair of the females is cut to a pony tail while the men cut their hair according to their wishes. Haircutting is done on a special "alligator bank." *Epekodono* is the largest village celebration of the natives in Suriname, even though not all tribes celebrate this tradition.

APPENDIX III

CASE STUDIES

Woman in Christiaankondre

Name: Marlies Pané-Janki
Home: Christiaankondre (Galibi, district of Marowijne)
Age: 29
Legal status: married
Name of husband: Evert Pané (53 years-old)
Education: primary school at Galibi
No. of children: 7 (aged 8 months-13 years)
Head of household: husband

Marlies regards herself as a full-time farmer. She has been farming intensively for two years. She works on two plots; one close to her home, and another 5 km away. The areas of the two plots vary between 0.5 ha and 1 ha.

The following crops are grown on both plots: bitter cassava, sweet cassava, okra, bananas, plantains, pineapple, sugarcane, maize, jams, callaloo and sweet potato. Her husband and children participate in the activities on the plots. These activities are planting, weeding, harvesting, and transportation of produce. She cultivates primarily for self-subsistence. Surpluses are sold at the surpluses market or St. Laurent in French Guiana. She is allowed to use her earnings as she wishes.

Every year her husband leaves for a time to work at other jobs, and then she has to rely on herself. He is not jealous, and is happy to do household chores. The children are raised freely according to the Carina tradition. Her house needs to be expanded.

This is an overview of a normal day:

5:30 a.m.	Gets up, fetches water (approx. 50 m from house) prepare breakfast Does dishes Cleans garden Children assist before leaving for school
8:30 a.m.	Bathes, has breakfast and visits family living nearby
11:30 a.m.	Prepares lunch
1:30 p.m.	Lunch
2:30 p.m.	Siesta
4:00 p.m.	Activities on closest plot

7:00 p.m. Dinner, dishes, etc.
9:00 p.m. Bedtime

The schedule varies according to the season and farming activities.

Woman in Donderskamp

Name: Norma Alkantara-API
Home: Konemerumy (Donderskamp) - District of Sipaliwini
Age: 37
Name of husband: Frans Alkantara (44 years-old)
Education: primary school
Number of children: 4 (three girls and one boy, aged 3-21)
Head of household: Norma Alkantara

Mrs. Norma Alkantara-API, a Carina woman, has been married for many years to a Lokono/Carina man. For 20 years her husband has worked as a security guard at the floodgates, at the junction of the Arawara, Wajambo and Nickerie rivers. He is a government employee and earns very little. He leaves at 7:00 a.m. and paddles for two hours before reaching the floodgates. So Norma is the head of the household for most of the day. The 21-year-old daughter is already married but still lives with her parents. Norma's son-in-law was recently appointed as assistant head of the village.

Norma maintains two 0.5 ha plots located approximately 2.5 km from her home. On the plots she cultivates the following crops: bitter cassava, sweet cassava, pomtayer, pineapple, pumpkin, plantains, bananas, pepper, yard long beans, sweet potato, napi, yams, sugar cane, maize. Her husband assists as much as he can during his spare time. The older children are also of great help.

Norma has farmed for 22 years and is aware of all the benefits of farming. She plants primarily for self-subsistence, and surpluses are sold at the market in Paramaribo. Last year's harvest was small, and according to her it is because of the following problems:

- ants and caterpillar plagues
- flooding
- lack of transportation
- the fighting in the interior
- lack of government support.

Insecticides are too expensive. To minimize the damage caused by ants, Norma daily places a number of leaves on the nests as food for the ants. In this way the ants do not need to go to the plot.

She says that the transportation of agricultural products from the field to the village is very strenuous. She does it by pushing a wheelbarrow a distance of over 2.5 km. The wheelbarrow is rented from someone in the village for Sf.5. The same holds for transporting goods over 2.5 km from her home to the boats to sell in Paramaribo. Her earnings, supplemented by her husband's, are spent on raising her children. She also weaves cotton hammocks.

Norma has a busy schedule. Apart from being a farmer and businesswoman, she has been the chairman of a local women's organization. Nowadays she is an ordinary member but still very active. The family lives in a house, and in addition have a cabin to work in. The roof, made of *tassi*, was bought from another man in the village. The family's house is fairly new, so they can use it for a while. Finally, Norma complains that if the problems she mentioned are not solved, the commercial activities in Donderskamp will stop.

Daily schedule:

5 a.m.	Gets up, cooks for the family
7 a.m.	Works on the plot with the eldest daughter
11 a.m. - 2 p.m.	Lunch, siesta
4 p.m - 6 p.m.	Farming activities with children and husband

Woman in Galibi

Name: Benedicta Tokoe-Pane
House: Christiaankondre (Galibi) District of Marowijne
Age: 47
Name of husband: Stephanus Tokoe (48 years-old)
Number of children: 4 girls and 3 boys
Head of household: husband

Mrs. Tokoe comes from a farming/fishing family. Her parents produced many agricultural products. Water melon and pumpkin in particular were sold in large quantities in St. Laurent (French Guiana). Her children are already grown up and have left home. Her husband sometimes assists her in farming. Running a grocery store takes up all his time.

She farms mainly for self-subsistence. Surpluses are sold in Surpluses or St. Laurent. She also sells handicraft goods such as hammocks, dresses, beading, etc. Now she keeps chickens and ducks. Most of her goods are sold in French Guiana, and she admits to profiting from differences in the currency. In addition, she receives money from her husband. She manages her own budget. Part of the money is spent on her self and household products. Another part is saved in a savings and credit cooperative called Pasuwa. She thinks she is well off.

Even though there are no small children in the house, she is always busy feeding her grandchildren. Her daily tasks do not differ that much from other women in Galibi. She wakes up at five and fixes breakfast. If she is not on her plot, she cleans in and around the house. The family has a big garden to take care of. In the afternoon she prepares lunch and rests for an hour. Because of the grocery store, there are always people walking in and out, which is tiresome according to her. Her bedtime depends on her daily schedule.



APPENDIX 3

BACKGROUND INFORMATION ON THE REGIONS

THE COMMEWIJNE REGION

The Commewijne region consists of the area on the east side of the Suriname river, on the south and north side of the Commewijne river. The area is divided into six zones, and subdivided into 60 localities. Many of the localities are named after the former plantations with the infrastructure still intact, and after rural parishes founded by former Javanese contract laborers. To reach the area from Paramaribo, the river has to be crossed by ferry or small boat.

There are two offices of the LVV (Ministry of Agriculture, Livestock and Fisheries). The main office is located in Tamanredjo, the center of the southern part of the region, while the sub-office is located at Nieuw Amsterdam, the capital of Commewijne. The principal purpose of the LVV regional office is to facilitate the development of agriculture. Its local Information Service provides information and advises farmers on the process of producing and marketing agricultural products. Counseling is offered to potential farmers on the planning and setting up of agricultural businesses. The office also advises the government on issuing land to potential farmers.

The regional office is also involved in the physical planning of intentions within the region. The office has a statistical division to keep track of area records, such as production, inputs, marketing and cultivated areas. The data is processed in the main office in Paramaribo and published in annual reports. Another division of the regional office is the housecraft or domestic agriculture division, which teaches women farmers domestic skills and crafts such as knitting, sewing and the processing and preservation of fruits and vegetables.

Unfortunately there are no resources to fund these activities, and since most households cannot afford to pay for them they are limited to a small number of women. At one time this division also taught gardening to school children, but these activities have been discontinued due to lack of resources. The regional office is also responsible for the canals and dams in rural areas. Lack of implements restricts adequate execution of this responsibility, however. The regional office is temporarily involved in the distribution of inputs to farmers.

The main road in the Commewijne region is the East-West Connection, passing through Tamanredjo. This road is built along a ridge. Another paved road winds in a north-easterly to easterly direction along the Suriname river towards New Amsterdam, and then to Marienburg. Marienburg is an old sugarcane plantation where the crop is grown and processed. Rural parishes and settlements are connected by unpaved roads running north-south. Farms are situated along the roads and dams.

To reach the settlements on the north side of the Commewijne river, the government offers daily transportation by boat from Bakki to Alliance. A road once connected the settlements on the north side of the river but the road is now completely overgrown by vegetation and only used by bikers. Alliance is a center on the north side of the Commewijne river. This orange plantation is controlled by the government. The local people of the Alliance community grow vegetables.

Most people have left the formerly prosperous settlements such as Bakki, and only the ruins remain. The problem was that young people had to move to Paramaribo to attend school or work. That was especially the case for small farmers, who also relied on outside jobs to make ends meet. Therefore, small-farming activities have declined or disappeared over the years. The government recently installed electricity to encourage farming.

The SLOC (Foundation for the Regional Development of Commewijne) stimulates agricultural development in the region by training local farmers and setting up experimental farms in husbandry and orchards.

Vegetables such as cassava, beans, peanuts, cabbage, cucumbers, tomatoes, aubergines, peppers, pumpkins and plantains are grown everywhere in this region. Approximately 1200 vegetable farmers are active over an area of 273 ha. Table 1 gives an overview of the area and the total production of these vegetables, for 1992. Figure 1 shows that the area in production in the Commewijne region has not changed significantly within the last ten years. The reason for this development is urbanization of rural areas, while new land is brought into production at the same rate. Meerzorg, for example, is one of the places where urbanization is rapidly taking place.

The multiple cropping system is used. Some parishes specialize in growing a certain crop. In the parish of Alkmaar, for example, cabbage is grown by farmers of East Indian descent, while farmers along the East-West connection specialize in growing long yard beans. Peanuts are grown at the Tapoeripa parish, while Kronenburg is known for its plantains.

Vegetables are primarily grown on family farms. Tools such as hoes and forks are used by family members to cultivate the land manually. Occasionally it is possible to rent *cubotas* at the LVV. There are approximately 14 large farms of around 6 ha. Most of these large farms are located on the right side of the Commewijne river at Motkreek. The farms are large to be compatible, because of the restricted accessibility of the area. The level of management is also higher since tractors, *cubotas*, water pumps, and spraying equipment are used, while workers are hired. The owners do not always live on the property.

Women participate in farming through the family structures. Weeding, tying of tendrils, sorting, marketing, etc., are all done by women. There is a trend for an increasing number of women who once worked outdoors in Paramaribo to participate actively in growing vegetables. This is due to the poor connection with Paramaribo, and the increasing cost of transportation.

There is no local market in the Commewijne region. Inhabitants may even go to Paramaribo to purchase vegetables. Some farmers peddle their vegetables or operate booths in front of their houses, or sell surpluses of their products to neighbours. Farmers from the Alliance use the daily transportation by boat provided by the government to take their products to the south side of the Commewijne river, and eventually to Paramaribo. Traders from Paramaribo are not active in the Commewijne region -probably because the river has to be crossed by ferry to reach the area.

However, an unspecified number of farmers do sell their vegetables to Maroons (people of African descent living in tribal communities), mainly women, who export the vegetables to French Guiana. Representatives of the LVV accept that they are not able to facilitate or control the export of vegetables in this way. Farmers may personally transport their vegetables for marketing at the Central Market or supermarkets in Paramaribo. Some farmers have to rent a car to be able to do so. Other farmers deliver their vegetables to the FAL (Federation of Agrarians and Labors) for export, processing or local distribution. Another problem is that the statistical information on vegetable production is based on estimates, because farmers withhold the real figures so as to avoid government interference.

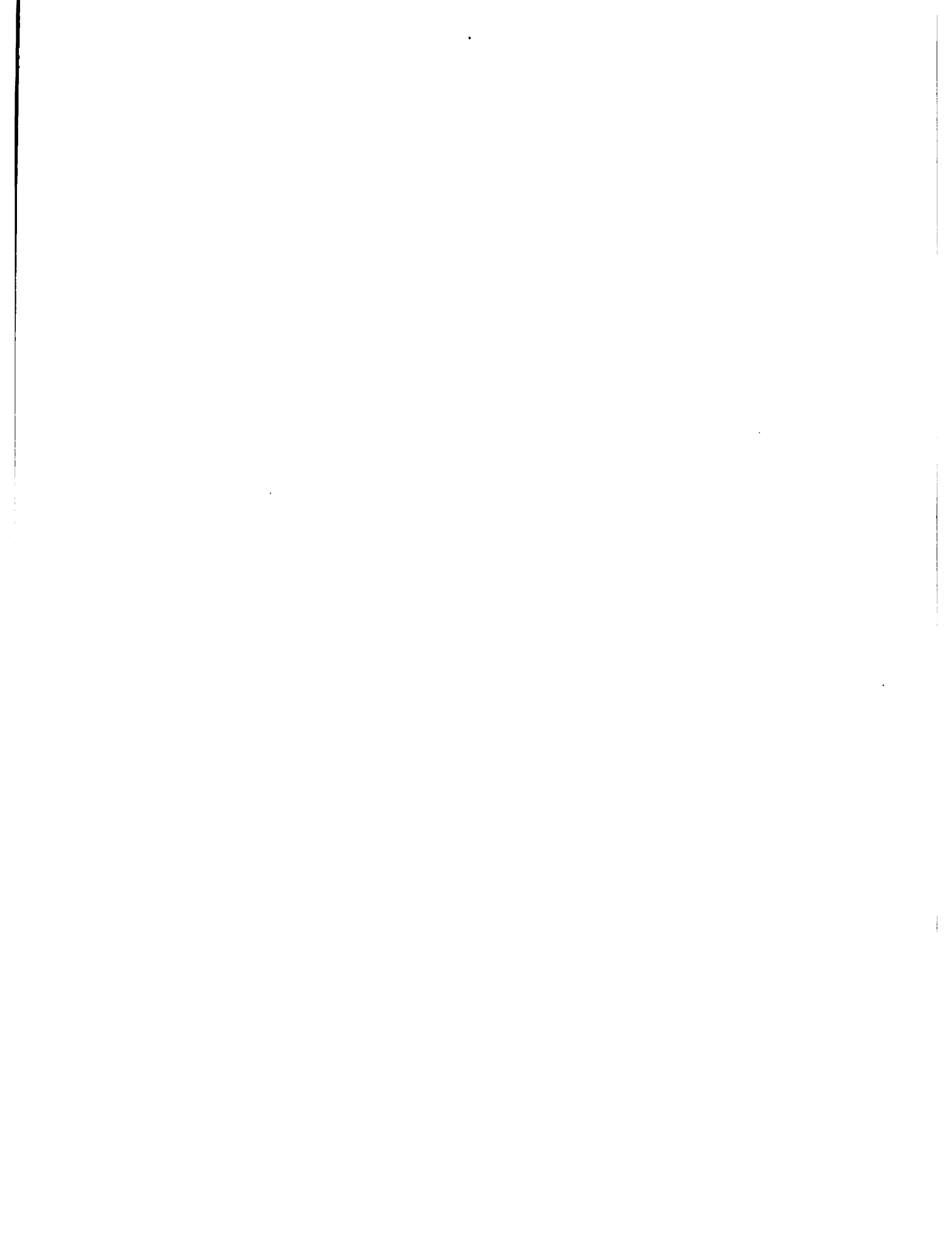
The only cooperative in the Commewijne region is the Agro, but it functions mainly as a distribution cooperative. Farmers in the Commewijne region rely heavily on imported inputs. Due to inflation, the flow of inputs is restricted. The inputs include not only chemicals such as fertilizers, insecticides and seeds, but also spades, hoes and forks. Supply is not sufficient to meet demand completely, however. The level of management has been dropping as a result. Meanwhile, larger farmers in particular tend to hoard the already limited inputs. Besides the problem of inputs, fuel and transportation, temporary flooding in the rainy season and water shortages in the dry season, are common.

Table 1. Overview of vegetables, area and production in the Commewijne region in 1992.

Vegetable	Total Area	Total Production
Cabbage	14 ha	142 tons
Common Beans	2 ha	5 tons
Yard Long Beans	25 ha	117 tons
Chinese Cabbage	1 ha	5 tons
Cucumbers	4 ha	40 tons
Tomatoes	8 ha	50 tons
Aubergines	5 ha	57 tons
Pepper	12 ha	104 tons
Pumpkin	12 ha	82 tons
Callaloo	1 ha	5 tons
Peanuts	105 ha	78 tons
Plantains	59 ha	533 tons
Cassava	24 ha	192 tons
Other	1 ha	6 tons

Source: Statistics Department.

Ministry of Agriculture, Livestock and Fisheries.



Approximately 1440 farmers are active in this region, while an estimated 10% have an area of more than one hectare in production. These so-called large-scale farmers hire workers. A significant number of small-scale farmers farm on a part-time basis. One of the reasons is that vegetables are not grown year round but according to the season. Another reason is that most of the farmers in these region are of Indian descent. The extended family structure still holds for a large number of them. This means that family members take care of the farming while some or all of them also hold down a job elsewhere.

Farming of vegetables is primarily managed by men, who take care of the organization, seed bed preparation, sowing, and nursing of the crops. The women assist the men with less intensive physical tasks such as weeding, tying of tendrils and harvesting, and are involved in post-harvest activities such as the sorting and preparation of vegetables for marketing. A few women completely control vegetable production and marketing.

The distribution of vegetables in the Kwatta region is in the hands of roughly eight traders who buy the vegetables from farmers for distribution at the local market in Paramaribo. Other distribution centers in several quarters in Paramaribo are the Ons Belang or vegetable distribution centers, e.g. the Combe market, Dassasing, De Grote Boom. There is no complete overview of the quantity of vegetables handled. Part of the vegetables are exported to the Netherlands and French Guiana. There is no complete overview of the quantity of vegetables exported from this region, since traders operate in other regions as well.

A few farmers personally take their products to the local market. To avoid dependency on traders, a local market operates twice a week in the Kwatta region to enable farmers to sell their products directly to costumers, while farmers situated along main roads operate booths in front of their homes. Processing of vegetables hardly occurs. Sauerkraut from cabbage, and salty chinese cabbage, are prepared for local distribution. Surpluses of vegetables are dumped in the river or used as fodder. One specialist organization is the FAL (Federation of Farmers and Agricultural Laborers), which manages a VAPRO division for marketing vegetable products and an another division to supply farmers with inputs. This organization processes cassava for export. The organization also supplies farmers with inputs.

Farmers in the Kwatta region rely heavily on inputs to maintain their production. According to the LVV, a significant number of farms in the Kwatta region own mechanical equipment such as tractors and *cubotas* to prepare the land, and water pumps and sprayers. Farmers may also rent equipment of this kind. Certain vegetable seeds are imported from abroad, such as tomatoes and cabbage. These vegetables are sensitive to the growing conditions in Suriname. Therefore, farmers rely heavily on chemical fertilizers, herbicides and insecticides to ensure quality. Most of the farmers also have chickens and/or cows. The manure of these animals is used to enrich the soil. Small farming proceeds manually, with simple tools such as spades hoes and forks.

The Kwatta region has eight agricultural cooperatives. These are LAVECOL (Agricultural Organization of Leidingen and the Surrounding Area), the SMALIK Agricultural Union

(Sophia's Lust, Mattonshoop, Leidingen, and Kwatta), the Charlesburg Cooperative, the Cooperative of Kwatta and the Surrounding Area, the Uitkijk Polder Cooperative, and the Union of Leidingen and the Surrounding Area. The main objective of these cooperatives is to resolve the problems farmers encounter. The principal problem facing farmers is the effect of ongoing inflation. Because farmers rely heavily on imported inputs such as fuel, fertilizers, seeds, herbicides, pesticides and agricultural equipment, inflation means that farmers cannot afford to purchase these expensive inputs without increasing the prices of their products. If prices are increased, the local population cannot afford to buy the vegetables.

Farmers are also confronted with problems such as accessibility to their farms, temporary flooding in certain areas, and drought in the dry season, since drainage and irrigation are not properly controlled. The use of water pumps is not controlled either, so water pumped out of one farmer's area accumulates in another.

BACKGROUND INFORMATION ON PARA

LOCATION

Para is bordered in the east and in the north by the district of Wanica, in the south by the district of Brokopondo, and in the west by the districts of Saramacca and Wanica. The Para region is situated in the Old Coastal Plain. The soils are predominantly ripened clays. To the south there are widespread savannas with locally heavy loamy soils.

The physical properties of the Para soils are characterized as poor. Natural fertility is moderate to poor. The potential for agriculture is limited. However, with proper soil management and fertilization, it should be possible to grow certain crops in the well drained areas.

BACKGROUND INFORMATION ON THE VIERKINDEREN AND BERSEBA PLANTATIONS

The Vierkinderen and Berceba plantations are located at a distance of approximately 35 km from Paramaribo, the capital of Suriname, and form part of the district of Para. Both plantations were established in the 17th century. These plantations were part of the 175 plantations that once flourished in the Para district during the 17th and 18th centuries. Initially, crops such as sugar cane, coffee, cocoa and indigo were cultivated. After the disappearance of agriculture, the plantations were used to harvest timber.

Following the abolition of slavery in 1863, the plantations were offered to the local former slave families. Widespread plots were allocated to groups of families to cultivate. An important result of these actions, which still obtains, is the recent land problem (the allocation of plots among more family members. The partitioning of plots is unclear with regard to location and size). A satisfactory solution to this phenomenon has yet to be found. Farming is in decline on the plantations because of the poor quality of the soils, poor infrastructure, lack of transportation, and limited sales potential.

Demographic and socio-economic data for the area

According to CBB figures for May 1993, Para had 7799 inhabitants aged 18-65 years old, of which 4126 were men and 3673 women. Some 2200 people live in the communities of Onverwacht, Osembo and the surrounding area, as far as the Coropina creek. A further 400 people live south of Vierkinderen, Republiek and Berceba (Planatlas 1988).

The most important economic activities are timber harvesting, hunting, fishing and shifting cultivation. There is no form of permanent agriculture. The plantations are shared properties, barely opened up, while only certain parts are used to harvest timber and for hunting and semi-shifting cultivation.

Fishing has been diminishing in recent years, because the inhabitants do not possess proper boats. In addition, the Tawayakoera creek near Vierkinderen and Berseba is overgrown by vegetation. Hunting now provides hardly any income. It is done to protect plots under cultivation from rabbits and other animals that eat the cassava tubers. There is hardly any animal husbandry. Some households own chickens and ducks for their own consumption.

Means of subsistence

After mining, agriculture is the most important economic activity in Para. A number of people are employed by the government (at the Johan Pengel International Airport, and at Cola creek, a leisure area), and by the industrial sector (bauxite and Para Industry). Some inhabitants of Republic, Vierkinderen and Berseba are employed by the Water Company.

The most important economic activity in the above mentioned plantations are the production and vending of baked cassava or *para korantie*. This activity is mainly carried out by women. Approximately 50 households produce *para korantie* and *dosie* (cakes made from cassava flour, stuffed with stewed coconut). These delicacies are mainly sold at the Johan Pengel International Airport of Suriname. Other points of sale are the plantations, in the home, and some places in Paramaribo.

AGRICULTURE

In the past the plantations were used to harvest timber, since the soils were not suitable for large scale agriculture. But products such as sugar cane, coffee, cocoa and indigo were once grown. Shifting cultivation or self-subsistence farming which took place during the period of slavery is still practiced. However, because of shifting cultivation practices, the plots have been relocated further away from the communities. The (predominantly annual) crops cultivated in the past, such as sugar cane, rice, pineapple and tobacco, are no longer grown. Nowadays, there are a few plots under cultivation, mainly with tuber crops and vegetables. Farming has become too strenuous for the older generation. The younger generation shows little interest in farming and prefers to move to Paramaribo.

Women and agriculture

As already mentioned, farming is conducted on a very small scale on the plantations, contrary to the situation in the past when every woman cultivated and managed her own plot. A variety of factors account for the decline in farming. The most important bottlenecks are: i) soil depletion, ii) poor infrastructure (inaccessible roads, poor water management-irrigation problems), iii) limited access to inputs, iv) no adequate transportation and sales potential, and v) pests and diseases. Because of the ongoing problems, cultivation and management of the plots is an exhausting activity for many women. In addition, due to the increasing distances to

the plots caused by soil depletion in the vicinity, women have plenty of reasons for turning their backs on farming.

Furthermore, developments after the Second World War caused an exodus of people (both men and women) from the districts to Paramaribo. The prospect of obtaining an education for their children in the capital made a number of creole women decide to move to Paramaribo.

Method of cultivation

In general, annual crops are grown on the higher ground. The crops grown are bitter cassava, napi, tanner leaves, bananas, plantains, pineapple and vegetables. The most important crop cultivated, however, is bitter cassava. This is because bitter cassava is the most important ingredient of the basic diet, and is processed to make *dosie* and *para korantie*. The method of cultivation is similar to the methods of the Maroon women, i.e. shifting cultivation or self-subsistence farming characterized by:

- i) clearing and burning of the forest some kilometres away from the community. This activity is mainly carried out by men, as in Maroon society. A similar problem is evident -the shortage of manpower (because men are leaving)- so women are unable to cultivate the plots;
- ii) A variety of crops are inter-planted, e.g. mainly vegetables (tanner leaves and okra) are planted between cassava, napi, and sweet potatoes;
- iii) the use of simple manual agricultural tools such as hoes, spades and shovels;
- iv) little or no use of inputs such as fertilizers and other protective chemicals;
- v) farming for self-subsistence and for processing. Surpluses are sold, when there is a demand;
- vi) a number of activities are generally done at the same time e.g. cleaning, weeding, planting, harvesting, trimming. The women do not follow a schedule or specific plan.

Planting is carried on year-round and the number of working days is not controlled, nor are activities by the hour. It should be mentioned, however, that they do know when certain crops (cassava, napi, sweet potato) should be planted and harvested.

The fact that the women interviewed were not able to provide exact information about economic and technical aspects of the farms is explained by their non-commercial approach to farming, and the problems encountered (poor soils and pests) during the various activities. From the cultural perspective, farming is carried out primarily to produce food, and agriculture is the most important way of achieving this objective.

Due to the above mentioned problems, women limit themselves to the processing of cassava. Cassava is bought from Maroon and Indian women in the vicinity. The Maroon women fled from the interior during the fighting that occurred in recent years. They occupy land in Para and are trying to provide for themselves by agricultural activities. Sometimes the cassava is

part-processed and sold in the *matapi*. A *matapi* costs Sf.10, while a bag of cassava tubers costs Sf.250 (one full bag is equivalent to four *matapis*).

Processing of cassava

Most creole women in Para, mainly on the three plantations (Republiek, Vierkinderen and Berseba), nowadays spend most of their time processing cassava. The reason has been mentioned above. Another important reason is the commercial aspect of processing cassava. It provides a means of subsistence and has in most cases become the most important source of income.

Processing of cassava takes place in a little lean-to (a wooden shed covered with roofing sheets). After rasping, the cassava is placed in the *matapi*, a cylindrical basket made of straw, and squeezed to remove the poison. The leaking moisture is collected and used to prepare a kind of cooking oil or *casripa*, a brownish sauce used as a taste maker in food. The squeezed cassava is left to dry in the sun. After drying, the cassava is pounded and sieved prior to baking the *dosie* and cassava bread. Because of the pounding of the cassava, it becomes more crisp and not so tacky as the kind prepared by Maroon women.

Other tools used besides the *matapi* are a sieve, a *matta* for pounding, and an iron hoop for forming the *dosie*. Additional raw materials used are: sugar, coconut, several essences, pineapple, and little plastic bags to seal the products.

Cassava bread and *dosie* is baked on a large circular iron plate 50-100 cm in diameter. The iron plate is heated by wooden blocks. This method of baking is ancient and bad for the women's health. Besides the smoke that fills the room and causes sore eyes and other eye problems, the heat developed in the room causes bronchitis and other lung diseases. Many women suffer from headaches and rheumatic problems caused by differences in temperature (hot in the room, cold outside). Therefore, another system or technology of baking should be developed in the short term to protect these women against the above mentioned problems.

The income obtained from processing cassava varies, because potential sales are uncertain, which is an enormous problem for those women. According to the interviewees, average income is Sf.300-500 a week. The economic recession has caused a decline in income. In addition, the lack of raw material and higher prices have reduced sales.

The producers are losing hope. Since there are no alternatives and this is their only source of income, processing cassava is still the most important means of subsistence for the women on the plantations. Cultural attachment to this activity also gives them little reason to explore other sources of income. According to the women, in general the area has enough potential for cassava production to be optimized. However, certain conditions should be met to maintain steady growth and development in this sector.

For the lasting development of this sector, the following are necessary within a short time:

- i) the introduction of simple and efficient technology for processing and baking;
- ii) the introduction of permanent and responsible systems of small-scale farming in the immediate vicinity;
- iii) increased accessibility to allow motorized transportation and potentially higher sales;
- iv) the promotion of cassava products as a substitute for expensive rice and other staple foods;
- v) the training of women, teaching them alternative cultivation methods and how to use time efficiently, as well as other scarce natural resources, and raw materials;
- vi) the solution of land problems.

The regional office of the Ministry of Agriculture at Lelydorp

The regional office is responsible for providing services to farmers. In general, this means providing agricultural information. However, since the early Eighties the service has declined in quality. The reasons for this are: i) the economic recession and the problem with foreign exchange, ii) the government policy of stimulating export production (focused on mechanized farming, advanced technology and large-scale agriculture), iii) little attention to the policy of developing small-scale farming, iv) the production of food and subsistence farming, v) little attention to farmers when designing development programs, vi) lack of qualified experts and officers to provide services, vii) lack of equipment, materials and resources for an efficient and well organized information service, viii) lack of transportation, ix) lack of motivation on the part of extension officers and field workers.

Agricultural information has lost its meaning due to the problems in the agricultural sector. "There is hardly any contact with the field." In general, small-scale farmers or female food producers hardly have any contact with the extension workers of the Ministry of Agriculture. The few people to have contact with the regional office are the ones registered for inputs. So it is clear that farmers are not aware of the responsibilities of the regional office.

The cooperatives

Nine cooperatives operate in the Wanica and Para region, six of which are active. These are de CAWO, the Sunday Market Cooperative, the Lelydorp Road Cooperative, the Schotel Road Cooperative, the Reeberg Cooperative, the Java Road Cooperative, the Rijdsdijk Cooperative, and the Meurs Road Cooperative. Farmers are not happy with the procedures of the cooperatives. One reason for this is the fact that cooperatives are viewed as an institution to supply inputs to the members. The members are not aware of the main task of the cooperatives, such as providing information and technical assistance.

Cooperatives are viewed with distrust because it seems as if only the interests of some influential members are looked after. These are mostly large-scale farmers. So it should be clear why few women are members of the cooperatives, even if they are aware of the importance for their farms. Most of the cooperatives, however, do not accept new members because they are oversubscribed.

Woman in the Para region are not really active in associations. A women's organization/cooperative is active in Para I. Women tend to participate in religious activities. Creole women in Para, in particular, often join layer-out associations.

CONCLUSION

The need to promote outdoor activities for the women, such as courses and training in agriculture (occulating, preparation of planting material, advanced methods of cultivation, and processing and conserving farm products) is apparent. The needs should be surveyed in the near future, so as to design programs and projects. This should be done in dialogue with the local women.

Because of the complexity of shifting cultivation, it was decided not to use the questionnaires as such in the interior, since the contents were not always applicable. This was also the case for the creole women in the Para region. The interviewers, however, have tried to gather as much information as possible.

Paramaribo, January 24, 1994

Shirley Defares

Translated by S.T. Carilho, Msc.



THE SARAMACCA REGION

The Saramacca region takes in the area along the coast between the Saramacca and the Coppename rivers, and the area along the right bank of the Saramacca river. The regional office of the LVV is located in Groningen, the capital of this rural area. The region is divided into four zones: the Groningen (the area in the immediate vicinity of Groningen), Eastern (east of Groningen), Western (west of Groningen) zones, and the R.O.S. (the zone along the right bank of the Saramacca river).

The principal purpose of the regional LVV office is to facilitate the development of agriculture. Its local Information Service provides information and advises farmers on the process of producing and marketing agricultural products. Counseling is offered to potential farmers on the planning and setting up of agricultural businesses. The office also advises the government on issuing land to potential farmers. The regional office is also involved in the physical planning of intentions within the region. The office has a statistical division to keep track of area records, such as production, inputs, marketing, and cultivated areas. The data is processed in the main office in Paramaribo and published in annual reports.

Another division of the regional office is the housecraft or domestic agriculture division that teaches women farmers domestic skills and crafts such as knitting, sewing, and the processing and preservation of fruits and vegetables. Unfortunately, there are no implements to continue these activities, and since most households cannot afford to buy them the activities are limited to a small number of women. The program to teach school children the art of gardening is still in operation. The regional office is also responsible for the canals and dams in rural areas. Lack of implements, however, restricts the adequate execution of this responsibility. The regional office is temporarily involved in the distribution of inputs to farmers.

The main road leading to the Saramacca region is the East-West Connection. Another access road to the southern part of the region is the Paloeloe road. The Paloeloe road leads to the rural settlement of Hamburg, along the Saramacca river. From there the Saramacca river can be crossed by ferry to reach the rural settlement Uitkijk, that belongs to the Kwatta resort. The East-West Connection and the road leading to Groningen are paved. Other important roads running in an east-west direction are the Doerga road, the Sumatra road, Damboentong roads 1 and 2, and the Sidodadie road. Roads running north-south connect these roads with the East-West connection. The majority of farmers are settled along roads and dams. Most of the time the unpaved roads are in poor condition, especially during the rainy season.

In general, vegetables are grown everywhere, except for West Zone and the R.O.S. Table 1 gives an overview of the vegetables, the area and production in 1992. Localities where vegetables are specifically grown on a commercial basis are Damboentong, Tambahredjo, Josiekreek, and Peperhol. Approximately 1900 farmers are growing vegetables commercially. According to statistical information, an area of 1146 ha was in production in 1992, with a total production of 17 341 tonnes. Figure 1 shows that production has increased over the last ten years in this district.

A significant number of farmers are of Indonesian descent (the so-called Javanese). They live concentrated in localities that were formerly known as rural parishes, such as Sidoredjo and Sidodadie. These farmers have been planting peanut, soybeans and cassava for generations. Peanuts, in particular, are grown commercially, while vegetables are more for private use. Commercial farming of vegetables is mainly done by people of East Indian descent. The type of crop grown in a particular year depends on the market. Haitians who came as workers are also starting their own businesses.

The majority of farming is small-scale and part-time. A small number of vegetable growers operate on more than one hectare of land. The use of tractors, *cubotas*, water pumps and sprayers is common, while workers are hired seasonally, and sometimes permanently. In general, the multiple cropping system is practiced. Vegetables are grown seasonally. Small-scale farmers usually work with family members. A typical problem is that as soon as the children have to go to secondary school or finish junior secondary school, they move to Paramaribo to continue school or to work. In this way the business loses labor.

Women mainly assist their husband or sons with the less physical tasks, such as fertilizing, weeding and post-harvest activities. An unspecified but small number of women manage the farm on their own.

Approximately four traders, who are also active in the Kwatta region, regularly buy vegetables from farmers either for distribution in the market in Paramaribo or for export. The Federation of Farmers and Agricultural Labourers (FAL) is also one of the traders. Peddling of vegetable surpluses door-to-door is also common, as is street-corner vending, or selling to neighbors. Some farmers operate booths along the road in front of their home. A local market operates on Sundays. The only vegetables processed are soybeans and peanuts, by the Javanese.

One of the main cooperatives in Saramacca is the ALOS (Association of Farmers' Organizations of Saramacca). The LACOSA agricultural cooperative is a member of this organization. The FAL also has other member associations. These are LAVELPO (Agricultural Association La Poule), Gotong Royong, a peanut and vegetable association, the interest association from Calcutta and the surrounding area, and the Catharina Sophia organization. The De pindaboeren organisatie (peanut farmers' organization) is neutral. The purpose of cooperatives is to take care of farmers' interests and to promote production by supplying information. Nowadays the main purpose is to distribute the inputs supplied by the government through the regional offices of the LVV. Since the cooperatives have become involved in the distribution of inputs, the number of members has increased dramatically. The increase is such that the cooperatives do not accept new members, because they cannot guarantee inputs to all members.

In the Saramacca region, demand for inputs outstrips supply. Farmers rely on imported seed for crops such as cabbage, fertilizers, herbicides and insecticides. Because the input of these materials is declining, the level of management has been dropping.

Flooding is a common problem in many areas. One of the main reasons is the uncontrolled reclamation that has become restrictive for the construction of proper infrastructure. Drainage and irrigation are therefore not adequately controlled. Uncontrolled use of water pumps adds to the problem. In contrast, shortage of water is common in the dry season. The unpaved roads become inaccessible in the rainy season, and also cause damage to vehicles.

Table 1. Overview of vegetables, area and production in the Saramacca region in 1992.

Vegetable	Total Area	Total Production
Cabbage	20 ha	360 tons
Common Beans	49 ha	300 tons
Yard Long Beans	30 ha	416 tons
Chinese Cabbage	25 ha	250 tons
Cucumbers	90 ha	3380 tons
Tomatoes	71 ha	1775 tons
Aubergines	28 ha	840 tons
Pepper	23 ha	230 tons
Pumpkin	105 ha	1050 tons
Bitter Gourd	2 ha	10 tons
Peanuts	254 ha	262 tons
Plantain	294 ha	7350 tons
Okra	95 ha	428 tons
Cassava	42 ha	420 tons
Other annuals	18 ha	270 tons

Source: Statistics Department.

Ministry of Agriculture, Livestock and Fisheries.

APPENDIX 4
DESCRIPTION OF SELECTED CROPS

Data obtained from the LVV for 1992 and part of 1993

Peanut (*Arachis hypogaea*)

Area planted in ha: 446
Annual production in tonnes: 414
Production per ha:

Areas of concentration:

Saramacca, Commewijne and a small amount of production in Marowijne, Wanica, Coronie and Nickerie.

Market:

The local market only, mainly processed as a dainty.

Growing cycle: 3-4 months

Inputs:

Mainly fertilizer (lime and NPK) and fungicide against leafspot disease.

As a result of the increase in the prices of inputs, peanut cultivation has dropped. It has been proven that imports of peanut-based products are much cheaper than cultivation under Surinamese conditions.

Scale:

Peanut is cultivated on a very small scale of about 1-5 ha. This is probably so because peanut cultivation is regarded as an activity for one household.

Characteristics:

Peanuts are characterized by their richness in protein and fat, the high tenability when still in the husk and the high price per kilogram on the local market.

Cultivation practices:

Peanuts are cultivated on ridges on light, well drained sandy or loamy soils. Seeds are sown at a distance of 30 x 20 cm. Weeding is done after two weeks. As the plant begins flowering, after 5-6 weeks, there must be some earthing up and fertilizing (NPK). At the time of harvest, peanuts are sprayed against leafspot disease with a fungicide. They are harvested by pulling the husks out of the ground. The most important form of processing is the making of peanut butter and several dainties.

Role of women:

Women are mainly concerned with the selection, preparation and processing of the peanuts by removing the husk, selecting the full seeds and preparing peanut butter and dainties.

Cassava (*Manihot esculenta*)

Area planted in ha:	220		
Annual production in tonnes:	2860	Exported:	300
Production per ha:	13.0		

Areas of concentration:

Wanica (Kwatta region), Para, Marowijne and some activity in Saramacca.

Market:

Cassava is marketed locally as a substitute for rice, which is more expensive. Part of the annual production is exported to Europe, especially the Netherlands.

Growing cycle:

There are varieties with a growing cycle of eight, six and three months.

Inputs:

Cassava is a crop that calls for little in the way of inputs. Some control of ants by chemicals is necessary. Cassava can also be fertilized with organic material.

Scale:

Cassava is mainly cultivated as a backyard crop for household use. There are some big farmers with areas of 5-10 ha who produce mainly for export. There are many small farmers with 0.1-1 ha who produce for the local market.

Characteristics:

Cassava is very easy cultivated and the planting material is easy to obtain. The crop demands few inputs, and with its high starch content is used as a substitute for rice.

Cultivation practices:

Cuttings of about 15-20 cm are placed in any well drained soil at a planting distance of 100 x 75 cm. During the growth and development of the plant, weeding is done whenever there is a surplus of weeds and, if necessary, some fertilizer with lime is applied frequently. At harvest, the whole plant is pulled out of the ground and the tubers are removed.

Role of women:

In the interior, despite tillage and harvesting, cultivation is carried out by women. The women process the cassava for their own use and for the local market in the city. In rural areas, women are involved in the planting and selection of cassava.

Tomato (*Lycopersicon esculentum*)

Area planted in ha:	194		
Annual production in tonnes:	3466	Exported:	5
Production per ha:	17.9		

Areas of concentration:

Especially Wanica (Kwatta, Mattonshoop, Wayambo area) and production on a smaller scale in Saramacca.

Market:

Tomato is cultivated for the local fresh fruit market. A small quantity of the annual production is exported to French Guiana.

Growing cycle: 3 months

Inputs:

As a crop, tomatoes require a lot of inputs: the use of imported seed, insecticides against mites, caterpillars and bugs, fungicides to combat rot, fertilizer (NPK) and sticks to hold the plants upright.

Scale:

The high productivity per unit area results in a large number of small farmers (1-2 ha). In the Kwatta area there are some big farmers with plots of 4-7 ha.

Characteristics:

Tomato is very sensitive to a great number of diseases. There is always a demand for tomato because of its use as a decoration and taste maker in many recipes.

Cultivation practices:

Germination usually takes place in a seedbed made of organic material. When the plantlets are 15 cm in height, they are transplanted to light, limy soils with beds of 2-6 metres. The planting distance is 70 x 70 cm and the plant spaces are fertilized with chicken or cow manure. Some 3-4 weeks after transplanting, weeding is done, whereafter the plants are earthed up and fertilized (NPK). On reaching a height of 30-40 cm. the plants are supported by sticks. During growth, unproductive shoots are pruned. Just before ripening the fertilizer application is repeated. The tomatoes are pulled off by hand when fully ripe.

Role of women:

The women working for small farmers are concerned with sowing, pruning, fertilizing, harvesting and selection. Large farmers usually hire male workers.

Pepper (*Capsicum annuum*)

Area planted in ha:	137		
Annual production in tonnes:	3409	Exported:	190
Production per ha:	24.9		

Areas of concentration:

Pepper cultivation is concentrated in Wanica (Kwatta area) and to a lesser extent in Saramacca.

Market:

Pepper is cultivated for the local market, either as fresh fruit or for processing in chilies. One sixteenth of the annual production is exported to Europe and French Guiana.

Growing cycle: 24 months

Inputs:

Pepper is highly susceptible to mites and the use of acaricides is indispensable. Other inputs are: insecticides against flies and scales, fertilizer (NPK) and, on acid clayey soils, fungicide against rot.

Scale:

Pepper is mainly cultivated on a moderate scale of 2-6 ha.

Characteristics:

Pepper is very popular in Suriname for the typical taste and flavour and used with almost every meal. The output of the effort done with pepper cultivation is relatively high.

Cultivation practices:

Pepper seeds are sown in a seedbed. After the plants are 15 cm in height they are transplanted to very fertile soils with good drainage. The plants are planted in holes, filled with organic material, on beds of 2-6 metres, at a distance of 60 x 40 cm. After three weeks, weeding begins. Every 2-3 months fertilizing is done with NPK. When the fruits are full grown and firm they are harvested with scissors.

Role of women:

Women are involved in all aspects of the cultivation process except spraying and weeding.

Sweet pepper (*Capsicum frutescens*)

Area planted in ha:	12		
Annual production in tonnes:	145		
Production per ha:			

Areas of concentration:

Cultivation of sweet pepper is concentrated in the Wanica area (Kwatta and Wayambo region).

Market:

Sweet pepper is grown for the local fresh fruit market.

Growing cycle: 24 months

Inputs:

The inputs required for sweet pepper cultivation are the same as those for pepper, except for the fact that sweet pepper seed has to be imported.

Scale:

Sweet pepper is cultivated on a very small scale in plots smaller than 1 ha.

Characteristics:

The fruit is mainly consumed by amateurs and is relatively very expensive. It has a distinctive flavour and is used in a large amount of meals. The plant is very sensitive to waterlogging. Cultivation practices are very intensive.

Cultivation practices:

Cultivation practices for sweet pepper are the same as for pepper, except for the planting distance. The planting distance for sweet pepper is 45 x 45 cm.

Role of women:

Women are involved in all cultivation practices except spraying with pesticides.

Chinese cabbage (*Brassica chinensis*)

Area planted in ha:	132		
Annual production in tonnes:	1511	Exported:	80
Production per ha:	11.5		

Areas of concentration:

Cultivation of chinese cabbage is concentrated in Wanica (Kwatta and Wayambo area).

Market:

Chinese cabbage is a very popular vegetable because of its neutral flavour. It is cultivated for the local market and a small part for export to the Netherlands.

Growing cycle: 3 months

Inputs:

The inputs required for the cultivation of chinese cabbage on a commercial scale are: imported seed, insecticide, fungicide and fertilizer (NPK).

Scale:

Chinese cabbage is cultivated on a moderate scale of 1-5 ha.

Characteristics:

Its fast growth, neutral flavour and resistance to a number of diseases and pests, makes chinese cabbage a very popular vegetable in Suriname.

Cultivation practices:

Plants are grown in a seedbed until they are 7-10 cm in height. Thereafter they are transplanted into furrows, which are enriched with organic material (cow or chicken manure). The planting distance is 30 x 15 cm. Three weeks after planting weeding is done and the plants are fertilized with urea. The plant is harvested by pulling it out completely.

Role of women:

In commercial cultivation, the women are involved in harvesting, packaging and processing. Processing is mainly done by salting the produce.

Cabbage (*Brassica oleracea var. capitata*)

Area planted in ha:	86		
Annual production in tonnes:	1940	Exported:	26
Production per ha:	22.6		

Areas of concentration:

Cabbage is mostly cultivated in the Wanica (Kwatta and Boma area) and Saramacca regions, on sandy ridges.

Market:

Fresh cabbage is marketed and processed (sauerkraut) locally. Some of the fresh vegetables are frequently exported to French Guiana.

Growing cycle: 3 months

Inputs:

Cabbage is very susceptible to insect damage, especially the diamond-back moth. The inputs required are imported seed, insecticide and fungicide against leafspot disease.

Scale:

Cabbage is cultivated on a moderate scale of 1-3 ha. There are some big farmers with plots of 5 ha and more.

Characteristics:

Cabbage cultivation is very intensive and demands a lot of inputs. The input requirement results in a relatively high price through the year. Cabbage is a very popular vegetable in Suriname.

Cultivation practices:

Young plants are produced in seedbeds made of organic material. After 3-4 weeks the plants are transplanted to light, limy fertile soils. The plants are placed on fertilized (organic material) 2-6-metres beds in a 70 x 25 cm pattern. After 2-3 weeks, the plants are fertilized with NPK. Weeding is also done. After the plants are full grown and closed they are cut off just above the ground.

Role of women:

In the cultivation of cabbage women are only involved in the harvesting and selection of the produce for market.

Cauliflower (*Brassica oleracea var. botrytis*)

Area planted in ha:	about 5
Annual production in tonnes:	about 100
Production per ha:	20.0

Areas of concentration:

Cauliflower is cultivated in Wanica (Kwatta and Lelydorp area) and as a backyard crop in several places in Suriname.

Market:

Cauliflower is only cultivated for the local market.

Growing cycle: 3 months

Inputs:

The required inputs are the same as those for cabbage.

Scale:

Cauliflower is cultivated on a very small scale, mostly not on a regular basis. The plots are about 0.1-0.5 ha in size.

Characteristics:

The characteristics of cauliflower are the consistently high prices the vegetable commands on the market. It is consumed by the elite in Suriname.

Cultivation practices:

The same as cabbage, except that the cauliflower is harvested just before the flower opens.

Role of women:

Women are normally not involved in the cultivation of cauliflower.

Pumpkin (*Cucurbita pepo*)

Area planted in ha:	312	
Annual production in tonnes:	4223	Exported: 495
Production per ha:	13.5	

Areas of concentration:

Pumpkin cultivation is concentrated in Wanica and Saramacca.

Market:

Pumpkin is supplied as a fresh fruit for the local market and a large amount for consumption in Europe, the Netherlands.

Growing cycle: intensive - 3-4 months, non-intensive - 1 year

Inputs:

As a crop demanding few inputs, pumpkin requires highly fertile soils which are frequently fertilized with NPK. In the case of clayey soils, a fungicide is useful.

Scale:

The land required for a fair output is about 5-10 ha. Pumpkins are produced on a large scale because of the low price per kg.

Characteristics:

The fruit has a high vitamin C content and is one of the crops that grow most easily in Suriname. It even grows in the wild, which results in a low price per kilogram.

Cultivation practices:

Pumpkin is cultivated in tussocks on distances of 500 x 500 cm. On a fertile soil, planting holes are made and fertilized with organic manure. Five seeds are planted in one tussock. Weeding is done after three weeks. The fruits are harvested after three months when they are firm and light coloured.

Role of women:

Women participate in the sowing, selection and marketing of the produce.

Okra (*Hibiscus esculentus*)

Area planted in ha:	122	
Annual production in tonnes:	550	Exported: 173
Production per ha:	4.5	

Areas of concentration:

Okra cultivation is concentrated in Wanica (Santo and Boma area).

Market:

Okra is exported to the Netherlands and French Guiana, but mainly produced as a fresh vegetable for the local market.

Growing cycle: 12 months

Inputs:

Okra is damaged by bugs, mites and beetles, so an acaricide and insecticide are required. Furthermore, okra uses a large amount of NPK during the growing cycle.

Scale:

Okra is cultivated on a moderate scale of 1-5 ha.

Characteristics:

Okra is grown very widely in Suriname, even in the interior, as it is suited to wet acid soils.

Cultivation practices:

Okra is usually sown directly into the soils, with a planting distance of 100 x 100 cm. Two weeks after sowing the plantlets are fertilized with NPK or chicken manure. Weeding is done at this time. Weeding is performed several times during the growth of the crop. The young fruits are harvested when the tip of the fruit can be pulled off.

Role of women:

In the interior and other rural areas women are responsible for the complete cultivation of okra.

Tannia leaves (*Xanthosoma sagittifolium*)

Area planted in ha:	53	
Annual production in tonnes:	808	Exported: 93

Production per ha: 15.25

Areas of concentration:

Tannia leaves are mainly grown commercially in Wanica (Kwatta and Wayambo area).

Market:

Tannia leaves are grown for the local fresh vegetables market and part of the crop is exported to the Netherlands.

Growing cycle: 24 months

Inputs:

Tannia leaves are known for the fact that they are a low input crop, only requiring organic matter at several points in the growing cycle.

Scale:

Tannia leaves are cultivated on a moderate scale of 1-5 ha.

Characteristics:

Tannia leaves have a high iron content and are very famous among Surinamese people. The plant needs to be grown in areas with a high moisture content.

Cultivation practices:

After the bulb is planted, the plants are fertilized every three weeks with organic manure. Full grown leaves can be harvested at any time, leaving three leaves on the plant permanently.

Role of women:

The cultivation of tannia leaves in Suriname is entirely the responsibility of women.

Lettuce (*Lactusa sativa*)

Area planted in ha: about 7-10 ha

Annual production in tonnes: 128

Production per ha:

Areas of concentration:

Lettuce is mainly cultivated on the sandy soils of Wanica.

Market:

Lettuce is only cultivated for the local vegetable market.

Growing cycle: 3 months

Inputs:

Growing lettuce requires the import of seeds, fertilizing with NPK and spraying with a fungicide.

Scale:

Lettuce is frequent cultivated on a small scale of 0.1-0.5 ha.

Characteristics:

Lettuce is a crop that needs to be moist constantly. It needs to grow on fertile organic soils to gain a good flavour. The cultivation of lettuce is highly labour-intensive.

Cultivation practices:

Lettuce needs to be cultivated on very rich soils. Beds are from 2-6 metres and fertilized with organic manure. Seeds are sown in a seedbed or directly sown in furrows. The plants are transplanted when they are 5-7 cm in height. The planting distance is 30 x 20 cm. It is very important to wet the plant daily. Lettuce is harvested when full grown.

Role of women:

Women are involved in the complete process from sowing to harvest.

Bitter gourd (*Momordica charantia*)

Area planted in ha:	93	
Annual production in tonnes:	1618	Exported: 303
Production per ha:	13.5	

Areas of concentration:

Bitter gourd is mainly cultivated in Wanica (Mattonshoop, the Lelydorp and Santo Boma area).

Market:

There is a huge market in the Netherlands and the crop is exported on a regular basis. Bitter gourd is also exported to French Guiana. The main market is still the local fresh vegetable market.

Growing cycle: 3-4 months

Inputs: Bitter gourd is grown on a scaffold. For most farmers this is a big investment. Other inputs are: NPK and insecticide against bugs.

Scale:

Because of the high investment required for the scaffold, plots of 1-5 ha are used.

Characteristics:

Bitter gourd needs a fertile soil. It has a very characteristic bitter flavour which the fruit is wanted for.

Cultivation practices:

Tussocks are made with a distance of 3 x 3 metres. The tussocks are fertilized with organic manure. Three seeds are sown at one tussock. Two weeks after these are sown some tillage is done around the tussock. At this time fertilizing is done with NPK. The fruits are harvested when they are almost full grown.

Role of women:

At the household level women are involved in the planting of bitter gourd.

Eggplant (*Solanum melongena*)

Area planted in ha:	140	
Annual production in tonnes:	4491	Exported: 362
Production per ha:	32.8	

Areas of concentration:

Eggplant is cultivated in Wanica, especially the Kwatta area.

Market:

Eggplant is cultivated for the local market. A part of the production is exported to Europe, the Netherlands.

Growing cycle: 6 months

Inputs:

On clay soils eggplant is susceptible to a very disastrous fungi. Inputs required: fungicide, insecticide against lice.

Scale: Moderate. Plots of 1-5 ha.

Characteristics:

In Suriname eggplant is known as a very good source of several nutrients. It is very famous, especially for the different meals it is used for.

Cultivation practices:

Eggplant seeds are sown on a seedbed, whereafter the plants are transplanted when four weeks old. The plants are planted in beds of 2-6 metres on different soils. Planting distance: 90 x 60 cm. Weeding and fertilizing (NPK) is done after two weeks. The fruits are harvested when firm and soft.

Yard long beans (*Vigna sinensis*)

Area planted in ha:	295	
Annual production in tonnes:	3898	Exported: 367
Production per ha:	13.2	

Areas of concentration:

The cultivation of yard long beans is concentrated in Wanica (Kwatta area) and Saramacca.

Market:

Local fresh vegetable market.

Growing cycle: 3 months

Inputs: The inputs required for the cultivation of yard long beans are: fertilizer (NPK), fungicide and acaricide.

Scale: Yard long beans are cultivated on plots of 1-4 ha (moderate).

Characteristics:

It is a relatively cheap vegetable on the market, which makes it very popular.

Cultivation practices:

The seeds are sown on a fertile, well drained soil with a planting distance of 75 x 15 cm. Two weeks after sowing the plants are fertilized with NPK, whereafter sticks are inserted. Weeding is carried out after three weeks. The pulse is harvested when full grown and still firm.

Role of women:

Women are involved in harvesting, selection and marketing.

Common beans (*Phaseolus vulgaris*)

Area planted in ha:	134	
Annual production in tonnes:	1486	Exported: 16
Production per ha:	11.1	

Areas of concentration:

Same as yard long beans.

Market:

Same as yard long beans.

Growing cycle: 3 months

Inputs:

Same as yard long beans.

Scale:

Common beans are cultivated on a smaller scale than yard long beans. Cultivation is usually small-scale, on plots of 1-2 ha.

Characteristics:

Common beans are a relatively high-priced vegetable because they are sensitive to waterlogging, diseases and pest.

Cultivation practices:

The same as yard long beans, except for the harvesting procedure. Common beans are harvested when the skin becomes rough.

Shallot (*Allium cepa* var. *aggregatum*)

Area planted in ha: about 5

Annual production in tonnes: 110

Production per ha:

Areas of concentration:

Shallot is cultivated in the kwatta area, Wanica.

Market:

Shallot is cultivated as a substitute for onions or for amateurs on the local market.

Growing cycle: 6 months

Inputs:

Commercial cultivation of shallot requires insecticides, fungicides and fertilizer (NPK).

Scale:

Shallot is cultivated on a very small scale (plots 0.1-0.5 ha).

Characteristics:

Shallot is very sensitive to waterlogging. It requires highly fertile soils because of the low-depth rooting system.

Cultivation practices:

One or two days before planting, the top of the six-month-old bulb is cut off. On narrow

beds of 1-2 metres, the bulbs are planted at a distance of 15 x 15 cm. Four weeks after planting the plant is fertilized with limestone. Some weeding is also done. When the leaves are still green and the bulb is full grown the plants are harvested.

Role of women:

Women are involved in the planting and selection of shallots.

APPENDIX 5
PROJECT PROPOSALS

PROJECT PROPOSAL I

1. TITLE

Census on women's organizations, projects and programs.

2. DEFINITION OF THE PROBLEM

Several women's organizations are active in Suriname, gathering useful data and developing knowledge and experience on a range of subjects. In general, women's organizations are not informed about each other's activities or the available data, which means that there is an inefficient use of know-how and data.

3. GOAL

Identify all women's groups and their activities, independent of the sector.

4. SPECIFIC OBJECTIVE

Establish a communications network.

5. EXPECTED OUTPUT

Efficient use of human and financial resources for the organized development of women and women's issues.

6. ACTIVITIES TO BE EXECUTED

A census has to be prepared and carried out, resulting in a data base. Create structures to keep this database up to date.

7. IMPLEMENTING AGENCY

The NGO Forum.

PROJECT PROPOSAL II

1. TITLE

An agricultural board and marketing boards.

2. DEFINITION OF THE PROBLEM

Marketing of small farmers' produce is chaotic. Small farmers, especially women farmers, are not able to sell their products directly to consumers or to export their products, because of lack of know-how and the financial wherewithal. They are forced to sell their products to middlemen, who enjoy a nearly monopolistic position. These buyers act as price setters and the farmers are price takers. Farmers are not able to buy farm implements, because farm income is not sufficient.

3. GOAL

Increase farm incomes, through the development of a structure leading to more realistic profits from farm products for farmers.

4. SPECIFIC OBJECTIVE

Establishment of a marketing and export board.

5. EXPECTED OUTPUT

Higher production and lower consumer prices.

6. ACTIVITIES TO BE EXECUTED

Set up a commission with representatives of farmers, traders and government officials to do the preparatory work.

7. IMPLEMENTING AGENCY

The government, namely the Ministry of Agriculture and the Ministry of Trade.

PROJECT PROPOSAL III

1. TITLE

Cleaning of the paths leading to plots in the interior.

2. DEFINITION OF THE PROBLEM

The method of farming in the interior is shifting cultivation. The distance between the village and new plots is increasing. The farmers, the majority of whom are women, have to walk over bad paths for hours with the harvest on their heads and sometimes with babies on their backs. They have to climb over trunks and cross creeks.

3. GOAL

The purpose of this project is to improve the state of the paths to lighten the burden of the interior women.

4. SPECIFIC OBJECTIVE

To provide saws to communities, to clear trunks from paths and to cut trunks and use them as a bridge for creeks.

5. EXPECTED OUTPUT

Better and easier life for women farmers.

6. ACTIVITIES TO BE EXECUTED

Collect more data and, together with the people in the interior, look for the best solutions.

7. IMPLEMENTING AGENCY

Non-governmental organisations active in the interior.

PROJECT PROPOSAL IV

1. TITLE

Pokigron as a market place for the interior.

2. DEFINITION OF THE PROBLEM

The interior people along the Suriname river have a surplus of farm products, which they cannot sell because of inadequate modes of transportation to more populated areas. Establishing a market in Pokigron would mean that farmers could transport their farm products by boat to this village, where traders from the capital could also buy the products.

3. GOAL

To create a market for surplus farm products from the interior.

4. SPECIFIC OBJECTIVE

To increase farm incomes of women in the interior and stimulate farming.

5. EXPECTED OUTPUT

Increased farm production and a better life for interior people.

6. ACTIVITIES TO BE EXECUTED

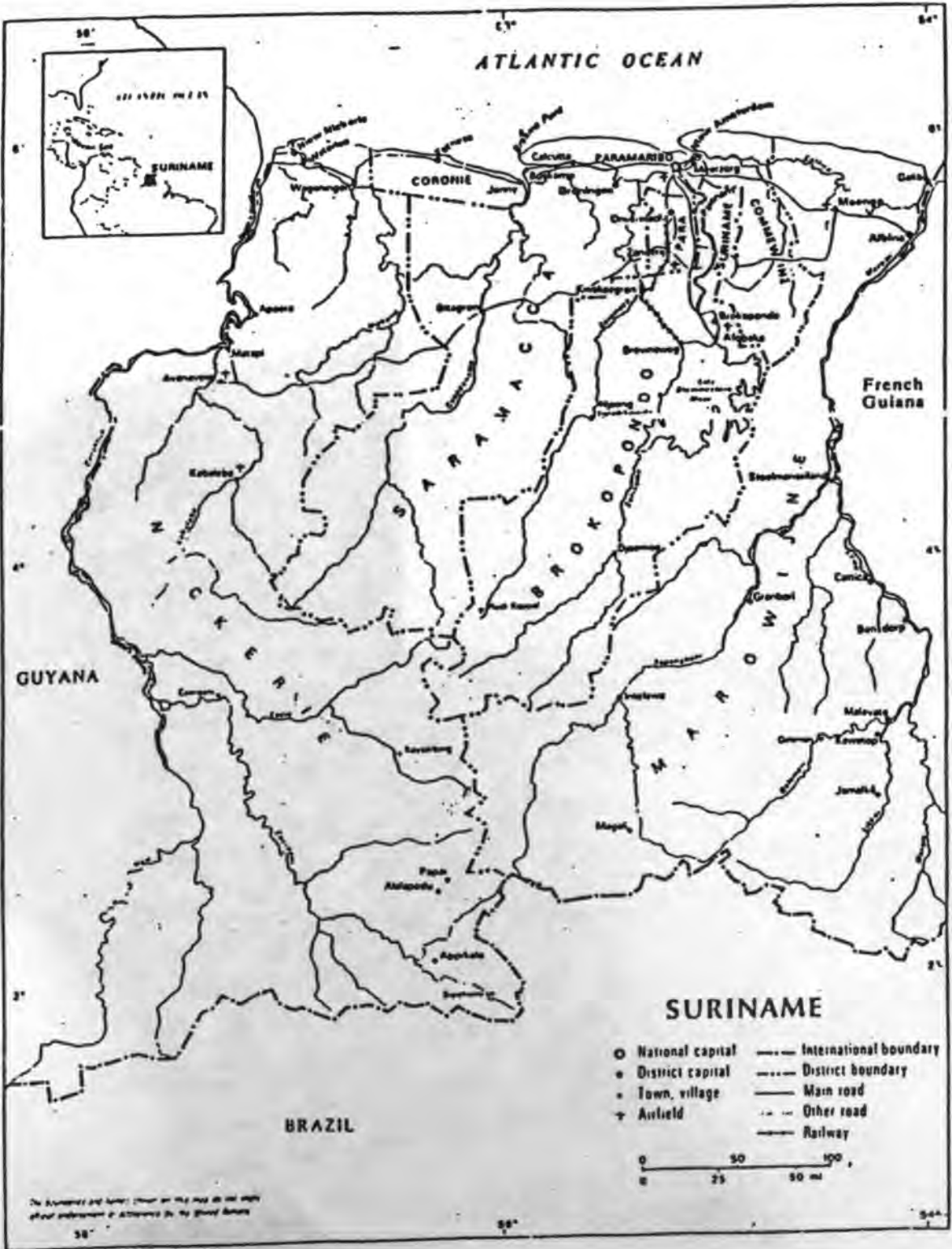
First the road from Pokigron to Paramaribo has to be repaired.

7. IMPLEMENTING AGENCY

Government of Suriname.

APPENDIX 6

MAP OF SURINAME





PROGRAM FOR THE ANALYSIS OF AGRICULTURAL
POLICIES VIS-A-VIS WOMEN FOOD PRODUCERS
IN THE ANDEAN REGION, THE SOUTHERN CONE
AND THE CARIBBEAN

This Program, executed by the Inter-American Institute for Cooperation on Agriculture (IICA) and financed by the Inter-American Development Bank (IDB) under Technical Cooperation Agreement ATN/SF-4064-RE, covered 18 countries in Latin America and the Caribbean. The first phase was implemented in 1992-1993 in six countries in Central America, under the auspices of the Council of Central American Agricultural Ministers in its XII Ordinary Meeting in March 1992. Results were published in the book *Mujeres de Maíz* (IICA/IDB 1995).

The second phase was carried out in the Andean Region (Bolivia, Colombia, Ecuador, Peru and Venezuela), the Southern Cone (Brazil, Paraguay and Uruguay) and the Caribbean (Barbados, Guyana, Jamaica and Suriname), by request of the First Ladies during their Summit Meeting on the Economic Advancement of Rural Women held in Geneva, Switzerland in February 1992.

Three documents were prepared for each country presenting the technical results from the four areas of research of the Program: a) assessment of the participation of women in the agricultural sector and their contribution as food producers on small-scale farms; b) analysis of agricultural policies and programs and their effects on rural women as food producers; c) evaluation of the technology used on small farms by women in food production processes; and d) analysis of the role of women in processing and marketing farm food products.

Other Program activities included the elaboration of regional comparative documents, the formulation of policy proposals and related actions, national and regional seminars for discussion of Program recommendations, and the publishing and distribution of the final results.