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DEFINITION AND PROMOTION OF
METHODOLOGIES
FOR LEGUME AND CASSAVA PRODUCTION
IN GUYANA

(Fondo Simon Bolivar)
1977/78

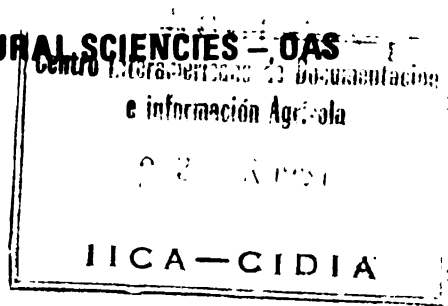
Georgetown

Guyana





INTER - AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES - OAS



DEFINITION AND PROMOTION OF
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IN GUYANA

(Fondo Simon Bolivar)

1977/78

Georgetown

Guyana

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C O N T E N T

- I. Summarized Description of Project
- II. Operative Programme 1977/78
 - A - General Description
 - B - Budget 1977/78
 - C - Sub-Projects
- III. Chronogramme

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PROGRAMME IV.I : FOSTERING PRODUCTION AND PRODUCTIVITY

FISCAL YEAR - 1977/78

(SIMON BOLIVAR PROJECT)

I. SUMMARIZED DESCRIPTION OF PROJECT

1. TITLE OF THE PROJECT

DEFINITION AND PROMOTION OF METHODOLOGIES FOR
LEGUMES AND CASSAVA PRODUCTION IN GUYANA.

2. BACKGROUND AND DEFINITION OF THE PROBLEM

The Government of the Co-operative Republic of Guyana has embarked on a national food crop production programme to ensure self sufficiency in certain food products - legumes, flour, fat and milk products for which the country relies heavily on massive importation - and to decrease the amount of foreign exchange devoted annually to the importation of food stuffs.

In recent years, the consumption of dry beans and peas was approximately 11.5 lbs. per capita per year, or a total of 8.8 million lbs. of which 6.6 million were imported annually at a cost of G\$ 3.90 million. To achieve a level of production compatible with the goal of self-sufficiency, the Government of Guyana signed an agreement with IICA in 1976 for the promotion of Legume production. In 1977 the promotion of Cassava production was added to the programme in order to use Cassava flour to reduce at least by 10% the importation of wheat flour, and three mills are already installed for that purpose - at Kaituma, Charity and Look-out.

The problems affecting production of Legumes and Cassava in Guyana, in spite of vast areas of land readily available, are related to insufficient acreage of these commodities, low productivity, limited availability of high yielding local varieties, inefficient marketing system, high post harvest losses and limited management capability.

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3. GENERAL OBJECTIVES

Co-operate with the Ministry of Agriculture and other organizations of the sector to develop the Institutional capability to manage the National Legume and Cassava Project in order to achieve the following goals set in the Medium Term National Plan:

- Achieve the necessary production level of Cassava to supply three (3) existing mills at Kaituma, Charity and Look-out by 1980/81.
- Achieve self-sufficiency in local demand for legumes by 1980/81.
- Increase the income of small and medium size farmers participating in the Legume and Cassava Programme.

4. SPECIFIC OBJECTIVE

- To co-operate with the relevant organizations of the agricultural sector in the development and application of appropriate technology for legume and cassava production. This is to be done under various conditions of climate, soils and social organization.
- To assist the Ministry of Agriculture and other organizations of the sector in identifying training needs and implementing training programmes covering different aspects of cassava and legume production.
- To co-operate with the Ministry of Agriculture to develop management capabilities within the agencies involved in the legumes and cassava programme.

The first part of the report deals with the general situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results obtained. The report concludes with a summary of the work done and the prospects for the future.

The work has been carried out in accordance with the programme of work approved by the Council of the Institute. It has been a year of active and fruitful work, and the results obtained are of great interest and importance.

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5. LOCATION AND DURATION OF THE PROJECT

Legume production will be concentrated in the Matthew's Ridge-Kaituma area, West Demerara, East Berbice and in the intermediate Savannahs. Cassava production will be localized in the vicinity of the mills installed at Kaituma, Charity and Look-out. The marketing and promotion of production of both commodities will be country wide. The duration of the project is three (3) years.

6. INCEPTION DATE

The first agreement between IICA and the Ministry of Agriculture was signed on the 14th of July 1976 and the activities were initiated July 1976.

7. BENEFICIARIES

The local technical staff assigned to the project and the farmers participating in the programme will all receive intensive training in various aspects of Cassava and Legume production.

8. COSTS

The costs for the fiscal year 1977/78 have been estimated at US\$ 451,770.00 of which IICA will provide through the Simon Bolivar Fund US\$ 131,140.00 and the Ministry of Agriculture of Guyana US\$ 320,630.00.

9. PARTICIPATING AGENCIES

The co-ordination of the project will be the joint responsibility of the Ministry of Agriculture and IICA. The production drive, under the direction of the Ministry of Agriculture, will be carried out by the Guyana Agricultural Products Corporation, Guyana National Service, Guyana Sugar Corporation, Guyana Rice Board and Guyana Marketing Corporation in addition to the small farmers.

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10. FINAL PRODUCTS.

At the end of the project, it is expected that:

- Appropriate technology will be developed and applied in the production of legumes and cassava.
- An effective Institutional infrastructure, capable of managing the National legume and cassava programmes will be implemented.
- The technical and medium level staff involved in the programme will receive training in various aspects of legume and cassava production.
- Functional models which could be put into practice by the Institutional system to ensure self-sufficiency of other food crops will be developed.

11. PROGRESS.

For the first half of 1977, seven training courses organized for the benefit of 220 Extension agents, and ten field days were held for 538 legume producers. These training sessions covered use of climatic data for planning purposes, drainage, soil preparation and agronomic aspects of legume production. In addition, experimental stations are in the process of being established at Enmore (cassava), Black Bush Polder and Ebini for Black Eye Peas.

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11. OPERATIVE PROGRAMME 1977/78 - GUYANA OFFICE (FSB)A. GENERAL DESCRIPTION:1. BACKGROUND

The Government of the Co-operative Republic of Guyana is preparing a five year National Development Plan. Among the objectives set out in this Plan for the agricultural sector, the IICA Office in Guyana considers of special importance:

- (a) The achievement of self-sufficiency in food-crop production.
- (b) The improvement of the level of living of individual producers, particularly small and medium sized farmers.

The first objective mentioned above has a double dimension: on the one hand it hopes to insure in a sustained manner the self-sufficiency of certain food products - legumes, flour, fats and milk products for which the country relies heavily on massive importation. On the other hand it hopes also to decrease the amount of foreign exchange devoted annually to the importation of foodstuffs.

To achieve partially the first objective the Government of Guyana decided to implement two important programmes, one for each, aimed at increasing the production of legumes (Blackeye peas, Kidney Beans, Mung) and cassava. The physical production goal to satisfy the internal consumption of legumes is set at 11.3 million pounds for 1981. In the case of cassava, the use of cassava flour is being considered to reduce by 10% the importation of wheat-flour. To that effect, the Government has purchased four plants with a total capacity of 110 tons of raw material per day, the sub-product of the milling operations will be used as animal feeds.

Besides the achievement of the physical production goals, the two programmes are expected to allow the development of functional models which could be put into practice by the institutional system to ensure self-sufficiency of other products to be identified.

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BY

JOHN B. HENNING

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To achieve the second objective, the government of Guyana proposed the application of a group of concurring actions.

- To develop for small and medium farmers production systems that maximize farm income.
- To establish a service infrastructure to give to the rural population access to a level of well being comparable to that of the urban population.

In various joint working sessions involving the staff of the Resource Development and Planning Division of the Ministry of Agriculture and IICA personnel, the current and potential performance of the food sector has been assessed in the context of national objectives expressed for legumes and cassava (1977/78 plan).

Accordingly the following were identified as problem areas that should be dealt with in the National Grain Legume and Cassava Programme.

1.1 LEGUMES

For Legumes the identified problems were the following:

- (i) The acreage presently under cultivation is insufficient in relation to the goals set by the Government;
- (ii) Productivity and average yield are significantly lower than that obtained by some local producers using improved technology;
- (iii) The availability of quality seeds is limited and the distribution system requires improvement.
- (iv) The marketing system needs improvement for the efficient flow of produce.
- (v) Post-harvest losses are very high;
- (vi) There is insufficient management capability for the development of the programme at the level of the Ministry of Agriculture and other relevant organizations of the public sector, as well as at the level of private farmers.

The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for ensuring transparency and accountability in financial operations.

The second part of the document outlines the various methods and techniques used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to ensure the validity of the results.

The third part of the document provides a detailed analysis of the data collected, including a breakdown of the findings and their implications. It discusses the trends and patterns observed in the data and offers insights into the underlying causes and effects.

The fourth part of the document presents the conclusions drawn from the analysis and offers recommendations for future research and action. It emphasizes the need for continued monitoring and evaluation to ensure the effectiveness of the implemented measures.

The fifth part of the document provides a summary of the key findings and conclusions, along with a list of references and a glossary of terms. It also includes a list of appendices and a list of figures and tables.

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1.2 CASSAVA

In the case of cassava the identified problems were as follows:

- (1) The acreage under cultivation in close proximity to the mills is not sufficient to provide enough raw material for processing needs.
- (ii) Yields of cassava are low relative to farmers in other parts of the world and high quality planting materials adapted to local conditions are lacking.
- (iii) The availability of specialized personnel for the operations of the mills is limited.
- (iv) For the entire programme management capability is insufficient at the level of G.A.P.C., the Ministry of Agriculture and other organizations of the public sector, as well as at the level of producer's associations and groups which integrate the programme.

In relation to these problems, the Government of Guyana has set forth a series of goals that will guide the development of the programme. These goals are as follows:

LEGUMES -

- PRODUCT 1. Increase in total acreage of Legumes planted.
- PRODUCT 2. Increase in productivity of the crop acreage.
- PRODUCT 3. Efficient production and Distributions of seeds to the production units participating in the project.
- PRODUCT 4. Improvement in the Marketing system.
- PRODUCT 5. Reduction of post-harvest losses.
- PRODUCT 6. Development of adequate management capability.

CASSAVA -

- PRODUCT 1. Increase in total acreage planted under the direct administration of the project.
- PRODUCT 2. Tested and adapted cassava production technology extended to industrial cultivation.
- PRODUCT 3. Efficient delivery system and processing of tubers at the mills.
- PRODUCT 4. Development of adequate management capability.

This set of goals and the activities necessary to achieve them constitute the base for the Government's NATIONAL GRAIN LEGUME AND CASSAVA PROGRAMME, that is to say a rational approximation to reach the sectoral objectives listed at the beginning of this introduction, through the removal of the identified constraints. Accordingly, the various activities to be undertaken by IICA, as a support to the NATIONAL PROGRAMME, constitute the SIMON BOLIVAR PROJECT, which is a continuation of the project entitled "Definition and Promotion of Methodologies for Legume Production in Guyana".

2. GENERAL OBJECTIVE

The main objective of the Simon Bolivar project is to develop, within the Ministry of Agriculture and other organisms of the Sector, the institutional capability to manage the NATIONAL PROGRAMME and assist the Government of Guyana to achieve the following goals set in the Medium-Term National Plan:

- Achieve self-sufficiency in local demand for Legumes by 1980/81
- Achieve the production of cassava to supply the 3 mills at Kaituma, Charity, and Look-out by 1980/81.
- Increase the income of small and medium size farmers which participate in the Legume and cassava programme.

3. SPECIFIC OBJECTIVES

1. Develop appropriate technology for the cultivation of legumes and cassava under different conditions of climate, soils and social organization in Guyana.
2. Assist in the efforts to increase acreage devoted to legume and cassava production.
3. Assist in the application of proven technology to increase productivity and production of legumes and cassava.
4. Assist in the development of an efficient system of seed production and distribution.
5. Develop the management capabilities of the institutions involved in the legumes and cassava programme.
6. Participate jointly with Guyana Agricultural Marketing Corporation in the realization of a diagnostic study of the internal marketing system (mainly of legumes and cassava), as it relates to:
 - post-harvest losses
 - storage facilities
 - transportation and handling
 - pricing policy
7. Promote and assist in setting guidelines for pricing policy of inputs and outputs.
8. Assist the Ministry of Agriculture and other organisms of the public sector in identifying training needs and implementing training programmes.

4. SUB-PROJECTS

To achieve the objectives set above the following sub-projects have been budgeted for the fiscal year July 1977/June 1978

SUB-PROJECT A - Assist the Ministry of Agriculture to develop appropriate technology for the production of legumes and cassava.

SUB-PROJECT B - Co-operate with the Ministry of Agriculture in the promotion of legumes and cassava production.

SUB-PROJECT C - Assist the Ministry of Agriculture and the Guyana Marketing Corporation in the strengthening of the internal marketing system.

5. ADDITIONAL OBSERVATION

This project, is in its second year of operation. However, it contains a new element which is the production of cassava, introduced at the request of the Ministry of Agriculture of Guyana to supply raw materials to three mills already installed at Kaituma, Charity and Look-out.

6. RESPONSIBLE FOR THE PROJECT.

Nicot Julien.

B - B U D G E T - 1977/78

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES - O.A.S.

SIMON BOLIVAR FUND

DETAILS OF COSTS FOR PROJECT

GUYANA.

CODE: IV.XLG.11

TITLE: DEFINITION AND PROMOTION OF METHODOLOGIES FOR LEGUMES AND
CASSAVA PRODUCTION.

FISCAL YEAR: 1977-78

A/C. No.	ITEMS OF EXPENSES	TOTAL US\$	F.S.B.	COUNTRY
A	<u>COSTS OF PERSONNEL</u>	145,171	74,817	70,354
11	Professional International	70,691	70,691	-
12a	Professional National	48,700		48,700
b	General Services	25,780	4,126	21,654
c	Other Costs			
	<u>OPERATIONAL COSTS.</u>	109,043	36,720	72,323
B				
20	Official Trips		15,230	
21	Technical Literature		1,000	
22	Printing of Publications		2,250	
23	Scholarships		9,270	
24	Consultants and Speakers		2,800	
25	Materials and Useful Articles		2,850	
26	Other Services		3,320	
27	Electronic Data Processing			
28	Field Personnel			
a	Honorariums			
b	Travel Expenses			
C	<u>EQUIPMENT</u>	169,768	11,500	158,268
40a	Vehicles			
40b	Others			
D	<u>GENERAL SERVICES</u>	27,788	8,103	19,685
50	Supplies		1,508	
52	Communications		1,500	
53	Maintenance		900	
55	Rent		3,394	
56	Insurance		286	
51	Printing of Reports		515	
	GENERAL TOTAL	451,770	131,140	320,630

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

B.2 DETAILED EXPENSE BY PROJECT

Code: IV.(X) LG 11

Title: Definition and Promotion of methodologies for Legumes and
Cassava Production.

Fiscal Year: 1977/78

Code	TYPE OF EXPENSE	TOTAL US\$	FUNDING		
			SBF	Quotes	
	<u>OPERATIONAL EXPENSES</u>				
20	Official Trips		15,230		
21	Technical Literature		1,000		
22	Production of Publications		2,250		
23	Scholarships		9,270		
24	Consultants and Speakers		2,800		
25	Office Supplies and Materials		2,850		
26	Miscellaneous Expenses		3,320		
	TOTAL		36,720		

PROGRAMA OPERATIVO 1977/78 - GUYANA OFFICE

(SIMON BOLIVAR PROJECT)

TABLE B.3 Distribution of operating costs by Sub-Projects and Activities (in U.S. Dollars)

Subjects & Activities / Code	20	21	22	23	24	25	26	TOTAL
IV.XLG.11.11	500	-	50	350	-	100	100	1,100
IG 11.12	1,150	100	-	-	-	50	140	1,440
IG 11.13	500	-	150	-	-	100	100	850
IG 11.14	700	-	50	350	-	50	80	1,230
IG 11.15	300	-	100	-	-	500	100	1,000
TOTAL SUB-PROJECT IV.IG.11.1	3,150	100	350	700	-	800	520	5,620
IG 11.21	2,480	300	1,000	570	1,000	200	550	6,100
IG 11.22	3,000	-	-	-	-	300	300	3,600
IG 11.23	1,000	-	100	500	-	500	200	2,300
IG 11.24	1,800	200	500	3,000	1,000	500	700	7,700
TOTAL SUB-PROJECT IV.IG.11.2	8,280	500	1,600	4,070	2,000	1,500	1,750	19,700
IG 11.31	2,000	200	100	500	300	200	330	3,630
IG 11.32	300	-	-	-	-	50	50	400
IG 11.33	1,500	200	200	4,000	500	300	670	7,370
TOTAL SUB-PROJECT IV.IG.11.3	3,800	400	300	4,500	800	550	1,050	11,400
GRAND TOTAL PROJECT	15,230	1,000	2,250	9,270	2,800	2,850	3,320	36,720

G. SUB-PROJECTS

C. 1 SUB-PROJECT A:

IV.XLG.11,1

ASSIST THE MINISTRY OF AGRICULTURE TO DEVELOP APPROPRIATE TECHNOLOGY FOR LEGUMES AND CASSAVA PRODUCTION

OBJECTIVES

1. Develop jointly with the Ministry of Agriculture and other relevant agencies of the Agricultural Sector, appropriate technology for Grain Legumes and Cassava production under various conditions of climate, soils and social organizations.

2. Cooperate with the Ministry of Agriculture in the improvement of the capability of the Agricultural research sub-system to generate technology relevant to further development of the Legume and Cassava programme.

GOALS

- Assess the current level of technology in Legume and Cassava production.
- Provide support for the Commercial demonstration and experimental plots for Legumes and Cassava.
- Maintain the Cassava experiment Station at Enmore and establish supporting unit at Charity, Lookout, Kaituma for field propagation of high yielding variety of Cassava.
- Organize formal and in-service training for National staff involved in investigation on Legumes and Cassava.
- Evaluate results of experiments and make recommendations on appropriate systems of production.

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ACTIVITIES

IV.XLG.11.1.1

Carry out a situation study on existing technology for Legume production and assess the progress achieved in the on-going National Legume Project.

PLACE OF REALIZATION

Georgetown, Hubabu, Black-Bush Polder, Mon Repos, Sugar Estate farms, Pomeroun, Parika, Intermediate Savannahs.

DURATION

12 weeks

DATE OF START

July 1977

DATE OF END

October 1977

NATURE AND RELATION WITH ESTABLISHED GOALS

For the purpose of production and diffusion of appropriate technology and achieve objective No. 1, it is necessary to gather data on resources for the different regions of production and assess the level of technology currently applies.

To that effect, this activity will be carried out through review of existing data, field trips and interviews in major Grain Legume producing areas in order to identify and assign priorities to different possible areas of research, indicating their order of priority for the short, medium and long term.

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PARTICIPATING TECHNICIANS

Responsible for the activity: Reginald Pierre

Others: Nicot Julien
Philip Robinson

BENEFITTING ORGANIZATIONS

- Ministry of Agriculture and other agencies of the Sector participating in the Project

COLLABORATING ENTITIES

- Ministry of Agriculture
- Guyana Agricultural Product Corporation (GAPC)
- Guyana Sugar Corporation (Guysuco)
- Guyana Rice Board (GRB)

ACTIVITY IV.LG.11.12

Establishment of legume experiments at representative locations.

PLACE OF REALIZATION

Hubabu Cooperative, Guysuco Estates, Black Bush Polder, Mon Repos, Ebini

DURATION

9 months

DATE OF START

October 1977

DATE OF END

June 1978

NATURE AND RFLATION WITH ESTABLISHED GOALS

This activity will be carried out to generate and transfer appropriate technology relevant to Legume production. It will consist of:

- Varieties performance, Soil fertility, Optimum plant population, control of and resistance to pests and diseases for Black-eye and Red Kidney beans.
- Surface drainage and levelling trial at Hubabu.
- Moisture retention trials on Sandy soils at Ebini.
- Economic evaluation of the results of the experiments.
- Field days and demonstration for extension staff and farmers.

PARTICIPATING TECHNICIANS

Responsible for the activity: Reginald Pierre

Others: Philip Robinson

Warren Forsyhhe, IICA Specialist in soils will be required for a period of 10 days.

BENEFITTING ORGANIZATIONS

- Ministry of Agriculture
- Guyana Agricultural Products Corporation (GAPC)
- Farmers Cooperatives
- Guyana Rice Board (GRB)

COLLABORATING ENTITIES

- Ministry of Agriculture
- Guyana Rice Board
- Guyana Sugar Corporation

ACTIVITY IV.LG.11.13

Carry out a situation study on existing technology for Cassava

PLACE OF REALIZATION

Kaituma, Charity, Look-out, Emmore

DATE OF START:

July 1977

DATE OF END

October 1977

NATURE AND RELATION WITH ESTABLISHED GOALS

To adapt and create technological innovations compatible with the prevailing and foreseeable physical, biological and socio-economic conditions of production, it is necessary to collect and systematize data on resources for the various regions of production, and assess the results of the on-going Guyana Cassava Programme. This activity will be done through review of existing data, field trips and interviews at Kaituma, Charity, Look-out and Emmore.

PARTICIPATING TECHNICIANS

Responsible for the activity: Philip Robinson

Others: Reginald Pierre

Abdul Wahab, IICA Specialist will be required for a period of 14 days in September/October 1977.

BENEFITTING ORGANIZATIONS

- Ministry of Agriculture
- Guyana Agricultural Products Corporation (GAPC)
- Guyana Rice Board (GRB)
- Guyana National Service

COLLABORATING ENTITIES

- Ministry of Agriculture
- Centro International de Agricultural Tropical (CIAT)

ACTIVITY IV.LG.11.14

Designing and implementing variety trials and multiplication of plant material for Cassava.

PLACE OF REALIZATION

Enmore, Kaituma, Charity

DURATION

12 months

DATE OF START

July 1977

DATE OF END

June 1978

NATURE AND RELATION WITH ESTABLISHED GOALS

This activity will be carried out to generate and transfer appropriate technology relevant to Cassava production, with special emphasis on Rapid field propagation of high yielding varieties, mechanized planting and harvesting techniques. It will consist of:-

- Designing and setting up trials on optimum plant population, optimum crop cover for weed control, high root yield, resistance to pests and diseases

- Analysis of the data and economic interpretation of the results of the trials
- The plots will be used also for in-service training of the project staff, served as demonstration sites for farmers.

PARTICIPATING TECHNICIANS

Responsible for the activity: Reginald Pierre

Others: Philip Robinson

Abdul Wahab, IICA Specialist will be required for a period of 15 days around April 1978 (Training course and evaluation of first planting)

BENEFITTING ORGANIZATIONS

- Ministry of Agriculture
- Guyana Agricultural Corporation
- Guyana Agricultural Products Corporation

COLLABORATING ENTITIES

- Ministry of Agriculture
- Guyana Agricultural Products Corporation

ACTIVITY IV.IG.11.15

Evaluation of performance of existing equipment.

PLACE OF REALIZATION

Kaituma, Charity, Look-out and other coastal regions of Guyana.

DURATION

12 months

DATE OF START

July 1977

DATE OF END

June 1978

NATURE AND RELATION WITH ESTABLISHED GOALS

One of the constraint to expansion of acreage is the non-availability of equipment for planting and harvesting suitable to conditions of small farmers. To achieve objective No. 1 and generate a complete technological package, research has to be carried out in that area with special emphasis on mechanized planting and harvesting of cassava.

This activity will consist of the evaluation of performance of existing equipment, the selection, modification and testing of farm equipment under various conditions.

PARTICIPATING TECHNICIANS

Responsible for the activity:	Philip Robinson
Others:	Reginald Pierre Héctor Barreyro

BENEFITTING ORGANIZATIONS

- Ministry of Agriculture
- Small farmers participating in the Project and Farmers Cooperatives

COLLABORATING ENTITIES

- Ministry of Agriculture
- Guyana Sugar Corporation

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY SUB-PROJECT

Code: Sub-Project - A: IV.XLG.11.1

Title: Develop appropriate technology for Legumes and
Cassava Production

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
	<u>OPERATIONAL EXPENSES</u>			
20	Official Trips		3,150	
21	Technical Literature		100	
22	Production of Publications		350	
23	Scholarships		700	
24	Consultants and Speakers			
25	Office Supplies and Materials		800	
26	Miscellaneous Expenses		520	
	TOTAL		5,620	

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INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY ACTIVITY

Code: (A) IV.XLG.11.11

Title: Situation Study on existing technology for Legumes

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
	<u>OPERATIONAL EXPENSES</u>			
20	Official Trips		500	
21	Technical Literature			
22	Production of Publications		50	
23	Scholarships		350	
24	Consultants and Speakers			
25	Office Supplies and Materials		100	
26	Miscellaneous Expenses		100	
	TOTAL		1,100	

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INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY ACTIVITY

Code: (A) IV.XLG.11.12

Title: Establishment of Legume Experiments at four different sites

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
	<u>OPERATIONAL EXPENSES</u>			
20	Official Trips		1,150	
21	Technical Literature		100	
22	Production of Publications			
23	Scholarships			
24	Consultants and Speakers			
25	Office Supplies and Materials		50	
26	Miscellaneous Expenses		140	
	TOTAL		1,440	

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES
DETAILED EXPENSE BY ACTIVITY

Code: (A) IV.XLG.11.13

Title: Situation Study on Existing Technology for Cassava

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
20	<u>OPERATIONAL EXPENSES</u> Official Trip		500	
21	Technical Literature			
22	Production of Publications		150	
23	Scholarships			
24	Consultants and Speakers			
25	Office Supplies and Materials		100	
26	Miscellaneous Expenses		100	
	TOTAL		850	

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES
DETAILED EXPENSE BY ACTIVITY

Code: (A) IV.LG.11.14

Title: Establishment of variety trials and multiplication
of Plant Material for Cassava

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
	<u>OPERATIONAL EXPENSES</u>			
20	Official Trips		700	
21	Technical Literature			
22	Production of Publications		50	
23	Scholarships		350	
24	Consultants and Speakers			
25	Office Supplies and Materials		50	
26	Miscellaneous Expenses		80	
	TOTAL		1,230	

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY ACTIVITY

Code: (A) IV.XLG.11.15

Title: Selection, modification and testing of Farm Equipment
for Legumes and Cassava

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SDF	Quotas
	<u>OPERATIONAL EXPENSES</u>			
20	Official Trips		300	
21	Technical Literature			
22	Production of Publications		100	
23	Scholarships			
24	Consultants and Speakers			
25	Office Supplies and Materials		500	
26	Miscellaneous Expenses		100	
	TOTAL		1,000	

1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

2. It also emphasizes the need for regular audits to ensure the integrity of the data.

3. The second section details the various methods used to collect and analyze the data.

4. This includes both qualitative and quantitative approaches to data analysis.

5. The third part of the document describes the challenges faced during the data collection process.

6. These challenges include issues related to data quality and consistency.

7. The fourth section discusses the results of the data analysis and the insights gained.

8. The findings indicate a significant correlation between the variables studied.

9. The fifth part of the document provides a detailed analysis of the data trends over time.

10. This analysis shows a clear upward trend in the data over the period.

11. The sixth section discusses the implications of the findings for future research.

12. It suggests that further studies should focus on the underlying causes of the observed trends.

13. The final part of the document concludes with a summary of the key findings and recommendations.

14. The authors recommend that the findings be used to inform policy decisions.

C. 2 SUB-PROJECT B:

IV.LG.11.2

COOPERATE WITH THE MINISTRY OF AGRICULTURE IN THE
PROMOTION OF LEGUME AND CASSAVA PRODUCTION

OBJECTIVES

Cooperate with the Ministry of Agriculture to attain the production targets set in the National programme for legume and cassava, through increased acreage under cultivation, adoption of proven technology, use of efficient administrative organization and management systems, better seed production and distribution.

GOALS

- Development of management systems for state farms, cooperatives and individual producers participating in the programme.
- Adoption of appropriate technology to bring more acreage under cultivation.
- Increasing productivity through the intensive use of proven technology at the level of state and private farms.
- Reinforcement of the seed production and distribution systems.

ACTIVITIES

ACTIVITY IV.LG.11.21

Assist the Ministry of Agriculture in developing management capability within the agencies involved in the programme.

PLACE OF REALIZATION

Georgetown and regions of production

Faint, illegible text, possibly bleed-through from the reverse side of the page.

DURATION

12 months

DATE OF START

July 1977

DATE OF END

June 1978

NATURE AND RELATION WITH ESTABLISHED GOALS

Goal N°1 is related to the evaluation of the service provided by the various agencies involved in the programme, the identification of ways and means to increase their efficiency and the design and implementation of efficient administrative organisation and management systems.

This activity will be carried out through training in management system and project design at the level of state farms and Cooperatives. Individual farmers will be trained in basic farm management technique.

PARTICIPATING TECHNICIANS

Responsible for the activity: Farm Manager (to be recruited)

Others: H. Barreyro
R. Pierre
N. Julien

BENEFITTING ORGANIZATIONS

- Guyana Agricultural Products Corporation
- Guyana National Service
- Guyana Rice Board
- Cooperatives
- Individual farmers

COLLABORATING ENTITIES

- Ministry of Agriculture
- Centro Internacional de Agricultural Tropical (CIAT)

ACTIVITY IV.LG.11.22

Assist the Ministry of Agriculture and other Institutions in introducing appropriate technology to increase acreage devoted to Legumes and Cassava production.

PLACE OF REALIZATION

Kaituma, Charity, Look-out, and the major legume producing areas

DURATION

12 months

DATE OF START

July 1977

DATE OF END

June 1978

NATURE AND RELATION WITH ESTABLISHED GOALS

Total acreage presently under cultivation, both for grain Legumes and Cassava, is short of what is required to meet the objective of self-sufficiency in production of these crops. Therefore this activity will consist of direct technical assistance to extension staff, farmers cooperatives and individual producers on proper methods of site selection, land clearing, erosion control, drainage and substitution of crop so as to increase acreage under Legumes and Cassava. Training courses, field days will be held in the main regions of production.

PARTICIPATING IICA TECHNICIANS

Responsible for the activity: Philip Robinson

Others:

Reginald Pierre
Farm Management Specialist
(to be recruited)

BENEFITTING ORGANIZATIONS

- Guyana Agricultural Products Corporation
- Guyana National Service
- Ministry of Agriculture
- Cooperatives
- Individual farmers

COLLABORATING ENTITIES

- Ministry of Agriculture
- Guyana Agricultural Products Corporation

ACTIVITY IV.LG.11.23

Assist the Technical and Extension staff of the Project in applying proven technology to increase productivity of Legumes and Cassava.

PLACE OF REALIZATION

Kaituma, Charity, Look-out and the major legume producing areas

DURATION

12 months

DATE OF START

July 1977

DATE OF END

June 1978

NATURE AND RELATION WITH ESTABLISHED GOALS

According to recent production statistics, the average yield for the country has been estimated at 600 pounds for black-eye peas and 3 tons/acre for cassava. To attain goal N9:

- (a) Advisory services will be provided to technical and extension staff of the programme on the proper technology needed to increase productivity.
- (b) Short courses for about 50 extension staff will be organized, dealing with data collection and analysis (resources, climate, soils and cropping history), coordination of inputs supplied, development of production plans and improved crop management.
- (c) Reciprocal technical assistance will be arranged (at CIAT and other location) for 4 Nationals.

PARTICIPATING IICA TECHNICIANS

Responsible for the activity: Farm manager (to be recruited)

Other: Reginald Pierre
Philip Robinson

BENEFITTING ORGANIZATIONS

- State agencies, cooperatives and farmers participating in the programme.

COLLABORATING ENTITIES

- The Ministry of Agriculture
- Guyana Sugar Corporation
- Centro Internacional de Agricultural Tropical (CIAT)
- Guyana Rice Board (GRB)

ACTIVITY IV.LG.11.24

Assist the Ministry of Agriculture in the development of Seed Production and Distribution System for Legumes and Cassava.

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PLACE OF REALIZATION

Georgetown, Mon Repos

DURATION

12 months

DATE OF START

July 1977

DATE OF END

June 1978

NATURE AND RELATION WITH ESTABLISHED GOALS

One problem area identified to be a major constraint in the achievement of the objectives of the grain Legume and Cassava programme, is related to the production and distribution of high quality seed material. As a partial solution, an assessment of the existing seed production system (Legumes and Cassava) will be carried out in order to define and propose improved methods for the production and distribution of seeds. This activity will be undertaken jointly with the seed technology unit of the Central Agricultural Station through direct advisory services for the design of an improved system, overseas training for 2 seed technologists, seminars and short courses for approximately 30 extension staff.

PARTICIPATING IICA TECHNICIANS

Responsible for the activity: Reginald Pierre

Others: Farm Management Specialist

The advisory services of Dr. Antonio Pinchinat, IICA Regional Coordinator will be required for a period of 5 days.

BENEFITTING ORGANIZATIONS

- Ministry of Agriculture
- Guyana Agricultural Products Corporation

COLLABORATING ENTITIES

- The Ministry of Agriculture
- Centro Internacional de Agricultura Tropical (CIAT)

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES
DETAILED EXPENSE BY SUB-PROJECT

Code: Sub-Project B: IV.XLG.11.2
 Title: Promotion of Legumes and Cassava Production
 Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
	<u>OPERATIONAL EXPENSE</u>			
20	Official Trips		8,280	
21	Technical Literature		500	
22	Production of Publications		1,600	
23	Scholarships		4,070	
24	Consultants and Speakers		2,000	
25	Office Supplies and Materials		1,500	
26	Miscellaneous Expenses		1,750	
	TOTAL		19,700	

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY ACTIVITY

Code: (B) XLG.11.21

Title: Development of Management Capabilities within the Agencies

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
	<u>OPERATIONAL EXPENSES</u>			
20	Official Trips		2,480	
21	Technical Literature		300	
22	Production of Publications		1,000	
23	Scholarships		570	
24	Consultants and Speakers		1,000	
25	Office Supplies and Materials		200	
26	Miscellaneous Expenses		550	
	TOTAL		6,100	

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY ACTIVITY

Code: (B) XLG.11.22

Title: Introduction of appropriate Technology to increase acreage devoted to Legumes and Cassava Production

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
20	<u>OPERATIONAL EXPENSES</u> Official Trips		3,000	
21	Technical Literature			
22	Production of Publications			
23	Scholarships			
24	Consultants and Speakers			
25	Office Supplies and Materials		300	
26	Miscellaneous Expenses		300	
	TOTAL		3,600	

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY ACTIVITY

Code: (B) XLG.11.23

Title: Applying proven Technology to Increase Productivity in Legumes and Cassava Production

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
	<u>OPERATIONAL EXPENSES</u>			
20	Official Trips		1,000	
21	Technical Literature			
22	Production of Publications		100	
23	Scholarships		500	
24	Consultants and Speakers			
25	Office Supplies and Materials		500	
26	Miscellaneous Expenses		200	
	TOTAL		2,300	

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INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY ACTIVITY

Code: (B) XLG.11.24

Title: Rationalization of Seed Production and
Distribution System

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
20	<u>OPERATIONAL EXPENSES</u> Official Trips		1,800	
21	Technical Literature		200	
22	Production of Publications		500	
23	Scholarships		3,000	
24	Consultants and Speakers		1,000	
25	Office Supplies and Materials		500	
26	Miscellaneous Expenses		700	
	TOTAL		7,700	

C. 3 SUB-PROJECT C

IV.LG.11.3

ASSIST THE MINISTRY OF AGRICULTURE AND THE GUYANA
MARKETING CORPORATION IN THE STRENGTHENING OF THE
INTERNAL MARKETING SYSTEM FOR LEGUMES AND CASSAVA

OBJECTIVES

Complete a diagnostic study of the internal
marketing system of Legumes and Cassava, as it relates to:

- Post Harvest Losses
- Storage Facilities
- Transportation and Handling
- Grading and Quality Control

Improve the capability of the sub-system to carry
out efficiently the distribution of input and agricultural
products, to reduce post harvest crop losses and participate
in processes oriented towards attaining specific development
goals.

GOALS

- Identify and quantify post harvest losses for
Legumes and Cassava.
- Define major marketing problems of Legumes and
Cassava as related to storage facilities,
transportation and handling.
- Identify training needs in the field of marketing
and implementing programmes.

ACTIVITIES

ACTIVITY IV.LG.11.31

Carry out a diagnostic study of the internal marketing system of Legumes and Cassava.

PLACE OF REALIZATION

Georgetown and other selected sites

DURATION

12 months

DATE OF START

July 1977

DATE OF END

June 1978

NATURE AND RELATION WITH ESTABLISHED GOALS

It is felt that for both Legumes and Cassava, sizeable losses occur at different stages of the process due to poor handling, transportation and storage. In addition, improvement in the efficiency of the institutional system is considered to be an area of priority over the short and long run if the objectives of the Legumes and Cassava Programme are to be reached. For these reasons an inventory of Agricultural Organizations involved in Marketing of Legumes and Cassava will be carried out; the problems related to storage, transport and delivery will be identified in order to provide an information base for decisions related to the improvement of the sub-system.

PARTICIPATING IICA TECHNICIANS

Responsible for the activity: Héctor Barreyro

Others: Philip Robinson

Nicot Julien

Jerry LaGra, Marketing Specialist will be required for a period of 10 days.

The consulting services of George Mansfield, Food Technology Specialist, will be necessary for a period of 15 days.

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BENEFITTING ORGANIZATIONS

- Ministry of Agriculture
- Guyana Marketing Corporation

COLLABORATING ENTITIES

- Ministry of Agriculture
- Guyana Marketing Corporation

ACTIVITY IV.LG.11.32

Assist the Ministry of Agriculture and the Guyana Marketing Corporation in improving the marketing system for Legumes and Cassava.

PLACE OF REALIZATION

Georgetown

DURATION

6 months

DATE OF START

January 1978

DATE OF END

June 1978

NATURE AND RELATION WITH ESTABLISHED GOALS

Producers' response to Government's call for increase in production, sufficient to guarantee self-sufficiency in Legumes and Cassava is closely related to the revenue they derived from the sales of these commodities. Through surveys, direct advisory services to the Guyana Marketing Corporation and the Resource Development and Planning of the Ministry of Agriculture, this activity aims at identifying:

- Costs of Production for Legumes and Cassava
- Marketing margins at different levels
- Types of incentives (subsidies, guranteed prices)

in order to define and propose, both for input and agricultural products, guidelines oriented towards attaining specific development goals.

PARTICIPATING IICA TECHNICIANS

Responsible for the activity: Héctor Barreyro

Others: Nicot Julien

BENEFITTING ORGANIZATIONS

- Ministry of Agriculture
- Guyana Marketing Corporation
- Individual Farmers
- Farmers Cooperatives
- Other Production Agencies

COLLABORATING ENTITIES

- Ministry of Agriculture
- Guyana Marketing Corporation
- Guyana National Service
- Guyana Agricultural Products Corporation
- Guyana Rice Board

ACTIVITY IV.LG.11.33

Jointly with the Ministry of Agriculture, identify training needs in Marketing of Legumes and Cassava, and implement training programmes.

DATE OF REALIZATION

Georgetown and other selected sites

DURATION

12 months

DATE OF START

July 1977

DATE OF END

June 1978

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NATURE AND RELATION WITH ESTABLISHED GOALS

Improvement of the technical and professional capabilities of human resources within agencies involved in marketing is an important element in achieving the objectives considered for the sub-project.

It is proposed to study with staff of Guyana Marketing Corporation and of the Resource Development and Planning Division the needs for training at various levels, and tailor jointly with these agencies a training programme to encompass:

- Pre- and post- harvest handling of Legumes and Cassava
- Drying and storage
- Management techniques

The implementation will consist of direct advisory services, short courses and in-service training for technical personnel and production of audio-visual material for farmers.

PARTICIPATING IICA TECHNICIANS

Responsible for this activity: Héctor Barreyo

Others: Nicot Julien
 Philip Robinson

A Marketing Specialist (to be identified according to training needs) will be required for a period of 10 days.

BENEFITTING ORGANIZATIONS

- Ministry of Agriculture
- Guyana Marketing Corporation
- Other relevant production agencies
- Individual Farmers

by: *[faint signature]*

COLLABORATING ENTITIES

- Ministry of Agriculture
- Guyana Marketing Corporation
- Guyana Agricultural Products Corporation
- Guyana Rice Board

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY SUB-PROJECT

Code: Sub-Project C: IV.XLG.11.3

Title: Strengthening Internal Marketing System for
Legumes and Cassava

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
	<u>OPERATIONAL EXPENSES</u>			
20	Official Trips		3,800	
21	Technical Literature		400	
22	Production of Publications		300	
23	Scholarships		4,500	
24	Consultants and Speakers		800	
25	Office Supplies and Materials		550	
26	Miscellaneous Expenses		1,050	
	TOTAL		11,400	

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY ACTIVITY

Code: (C) IV.XLG.11.31

Title: Diagnosis Study of the Internal Marketing System of Legumes and Cassava

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
	<u>OPERATIONAL EXPENSES</u>			
20	Official Trips		2,000	
21	Technical Literature		200	
22	Production of Publications		100	
23	Scholarships		500	
24	Consultants and Speakers		300	
25	Office Supplies and Materials		200	
26	Miscellaneous Expenses		330	
	TOTAL		3,630	

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY ACTIVITY

Code: (C) XLG.11.32

Title: Assist the Ministry of Agriculture in improving the Marketing System for Legumes and Cassava

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
	<u>OPERATIONAL EXPENSES</u>			
20	Official Trips		300	
21	Technical Literature			
22	Production of Publications			
23	Scholarships			
24	Consultants and Speakers			
25	Office Supplies and Materials		50	
26	Miscellaneous Expenses		50	
	TOTAL		400	

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

DETAILED EXPENSE BY ACTIVITY

Code: (C) XLG.11.33

Title: Identifying Training Needs and Emplementing
Training Programmes

Fiscal Year: 1977/78

Code	Type of Expense	Total US\$	Funding	
			SBF	Quotas
	<u>OPERATIONAL EXPENSES</u>			
20	Official Trips		1,500	
21	Technical Literature		200	
22	Production of Publications		200	
23	Scholarships		4,000	
24	Consultants and Speakers		500	
25	Office Supplies and Materials		300	
26	Miscellaneous Expenses		670	
	TOTAL		7,370	

III CHRONOGRAMS OF ACTIVITIES

Sub-Project	Code	Activity	CHRONOGRAMME				DURATION Date Months	Cost of Operation US\$	Responsible	Collaborators
			Jul-Sept.	Oct-Dec.	Jan-Mar.	Apr-Jun.				
A	IV.LG.11.1	Situation study on existing technology for legumes Implementing research programmes for legumes					Jul-Oct 4	1,100	R. Pierre	A. Finchinat G. Pez J. Hamerton
							Oct-Jun 8	1,440	R. Pierre	
							Jul-Oct 4	850	P. Robinson	A. Wahab
							Jul-Jun 12	1,230	P. Robinson R. Pierre	A. Wahab
							Jul-Jun 12	1,000	P. Robinson	TICA Staff
							Jul-Jun 12	6,100	R. Pierre & Farm manager	P. Robinson H. Julien
							Jul-Jun 12	3,600	P. Robinson	A. Wahab
							Jul-Jun 12	2,300	Farm manager R. Pierre & P. Robinson	A. Wahab
							Jul-Jun 12	7,700	R. Pierre	A. Plachinat G. Pez
							Jul-Jun 12	3,630	H. Barreyro	H. Julien J. Lagra
B	IV.LG.11.2	Improving management culpability Introductions appropriate technology to increase acreage planted Introduction proven technology to increase productivity Improvement Seed Production and Distribution System					Jan-Jun 6	400	H. Barreyro	G. Mansfield H. Julien
							Jul-Jun 12	7,370	H. Barreyro	H. Julien P. Robinson
C	IV.LG.11.3	Diagnostic study internal marketing system legumes and cassava Improvement internal marketing system Identifying training needs and implementing training programmes								

