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SMALL FARMER DEVELOPMENT
IN
GUYANA

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IICA

Inter-American Institute for Cooperation on Agriculture

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FOREWORD

It was gratifying to hear from the Chief Technical Officers of the Ministry of Agriculture that the Government of Guyana/IICA Project "Small Farmer Production and Productivity" executed in the Crabwood Creek and Whim areas of Region 6 between 1982 to 1985 "shone like a beacon in the area of agricultural extension in Guyana".

After three years, it was time to move on as the model developed would be applied to activities to be concentrated in other areas of Guyana.

But in Crabwood there was not abandonment as demonstration and research plantain trials continue, a working committee is established and continues to function and a project proposal is before the committee to obtain funds for a marketing and processing outlet, for further agricultural inputs, training and plans for cattle development in an identified land area.

The project was developed and established under the Simon Bolivar Fund with support continuing under IICA quota funds. It was originally intended for the Pomeroun area in the Northwest Coast of Region 2 but logistics, the familiarity of IICA's previous activities in the neighbouring Black Bush Polder for the development of the Minica Peas and the high concentration of farmers in Crabwood Creek led to the final selection of the project area.

The successes achieved must be attributed to the farmers,

(ii)

but these would not have been gained without the initiative, energy and expertise of the chief architect and author Dr. J.R. Deep Ford, IICA's Farm Management Specialist and National Professional who led and inspired Ramnarine - Senior Agricultural Officer, Ministry of Regional Development, V. Lallbachan - Agricultural Technical Assistant, Ministry of Agriculture and P. Ramsammy - Agronomist, Farmer and IICA Consultant. These, with M. Rashid and IICA's other supportive staff, contributed to the Project's success.

They are challenged now to see that such efforts at such minimal cost not only continue in Crabwood Creek but are taken to other areas of Guyana where there is such considerable need.

Franz C. Alexander
Director, IICA Office in Guyana
August, 1985

PREFACE

This document reports the particular experience derived from a project entitled "Increasing Small Farmer Production and Productivity" which is being implemented in Guyana as a collaboration primarily between the Ministry of Agriculture, Ministry of Regional Development and the Interamerican Institute for Cooperation on Agriculture (IICA). It is an output of the project based on the experience during the period 1982-1985 and involved small farmers throughout Guyana, from Crabwood Creek (CWC) in the East to Pomeroun in the West. This document is entitled "Small Farmer Development in Guyana" primarily because the implementation of the project and the preparation of this document intimately involved persons who have worked for numerous years in almost every area of small farmer development and most importantly in almost every geographical area of Guyana. As a result, although the events reported reflect activities during the past four years the report is based on much longer and broader experience and is indicative of and applicable to small farmer development throughout Guyana. The report is divided into three parts as follows:

Part 1: Summary and Achievements of IICA/Government of Guyana (GOG) Small Farmer Production and Productivity Project.

Part 2: Small Farmer Development in Guyana - A Derived Model.

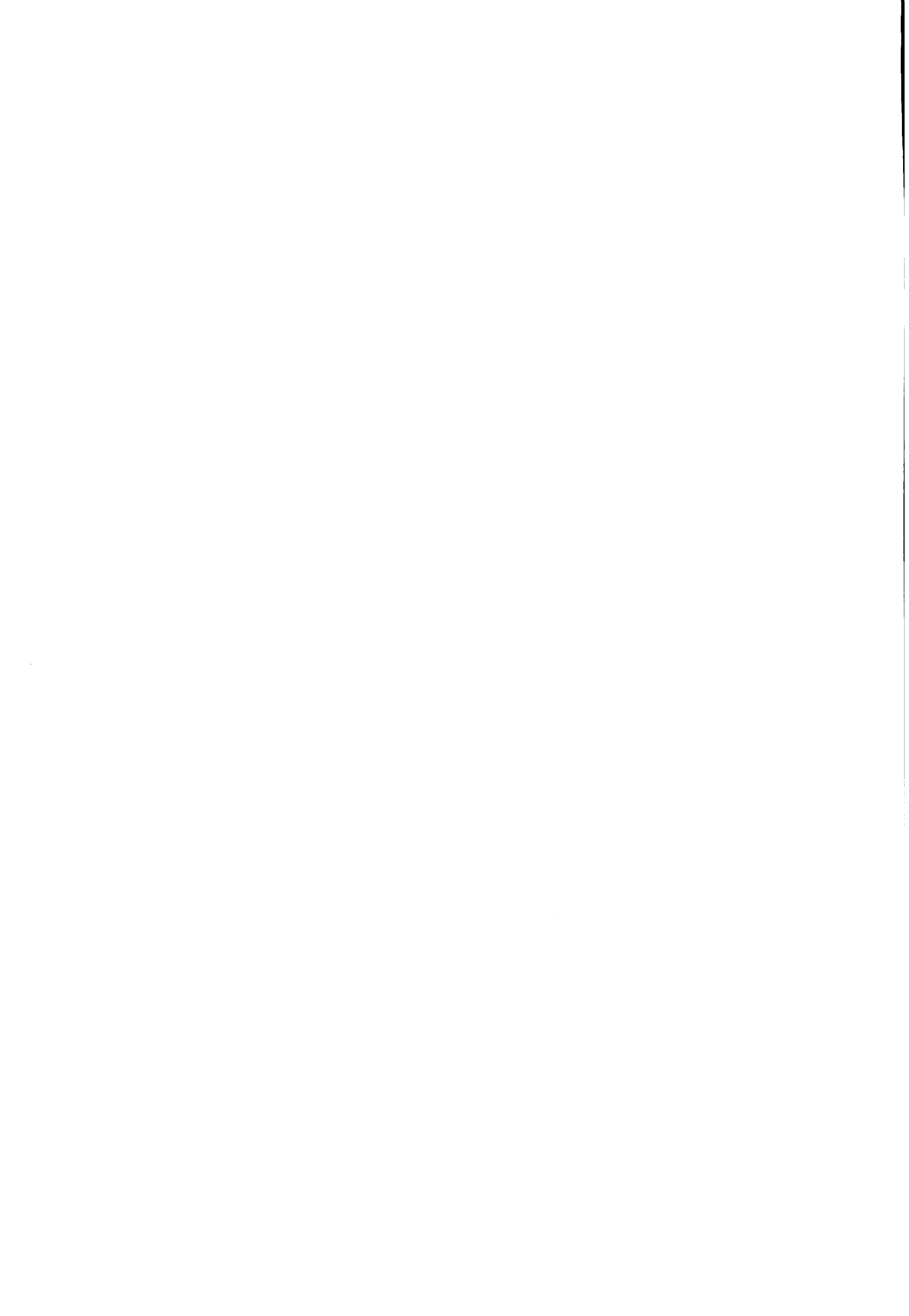


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Part 3: Selected Materials reflecting the work of
the IICA/GOG Project.

The rewards of this exercise were enjoyed by all those who contributed to it. This includes the farmers and their households in the project areas; officers of the Ministry of Agriculture and the Ministry of Regional Development (Region 6); technicians and support staff of the Interamerican Institute for Cooperation on Agriculture.

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PART 1: Summary and Achievements of the IICA/Government of Guyana Small Farmer Production and Productivity Project

1.1 Objectives of the Project:

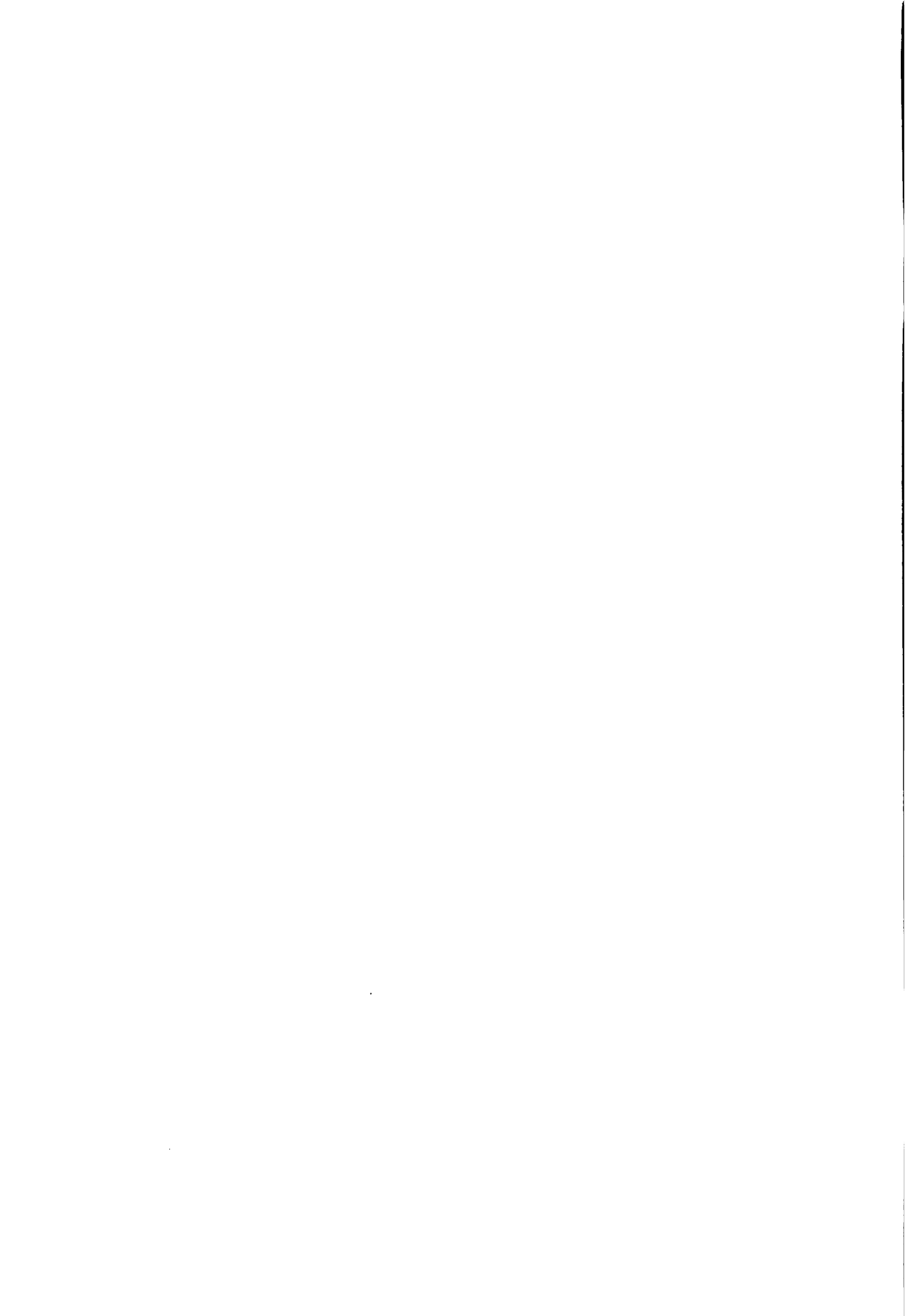
The general and specific objectives as detailed in the project document (IICA, Operative Programme 1982) is as follows:

"The general objective of the IICA project is in cooperation with the Ministry of Agriculture, to raise the income level of small farmers through increasing their production and productivity".

The specific objectives of the project are to cooperate with and support the Ministry of Agriculture in the following areas:

- Generation and Transfer of appropriate technology for improving small farm production and productivity.
- Organisation of systems to increase the availability of farm inputs, credit and effective marketing services.
- Increasing the management capability of small farmers.
- Implementing actions aimed at integrating rural activities and increasing the involvement of rural people.
- Developing a model for small farmer development.

This latter objective was perhaps the most important because it suggested responsibility for small farmer development in Guyana beyond the confines and time period of the present



project. Part 2 of this report addresses this objective.

1.2 Implementation of the Project:

The project started in the Essequibo region (Pomeroon and Red Lock) but was implemented almost wholly in the Region 6 areas of Whim and Crabwood Creek over the period 1982 - 1985.

The project involved farmers in the project areas and four institutions - the Ministry of Agriculture (Mon Repos), the Regional Administration (Region 6), the Crabwood Creek - Moleson Local Authority, and the Interamerican Institute for Cooperation on Agriculture (IICA). IICA played the leading role in the coordination of the project. Throughout the process of implementation one representative from the Ministry of Agriculture and one Regional agricultural officer were integrally involved in the coordination mechanisms. In the project area a team from all the institutions mentioned above worked with farmers to implement the project. Farmers played the leading role in the implementation of the project.

1.3 Achievements of the Project

The achievements of the project are summarised under the four headings of Technology transfer, Training, Infrastructural development and input supplies, organisational development, Increases in production and productivity.

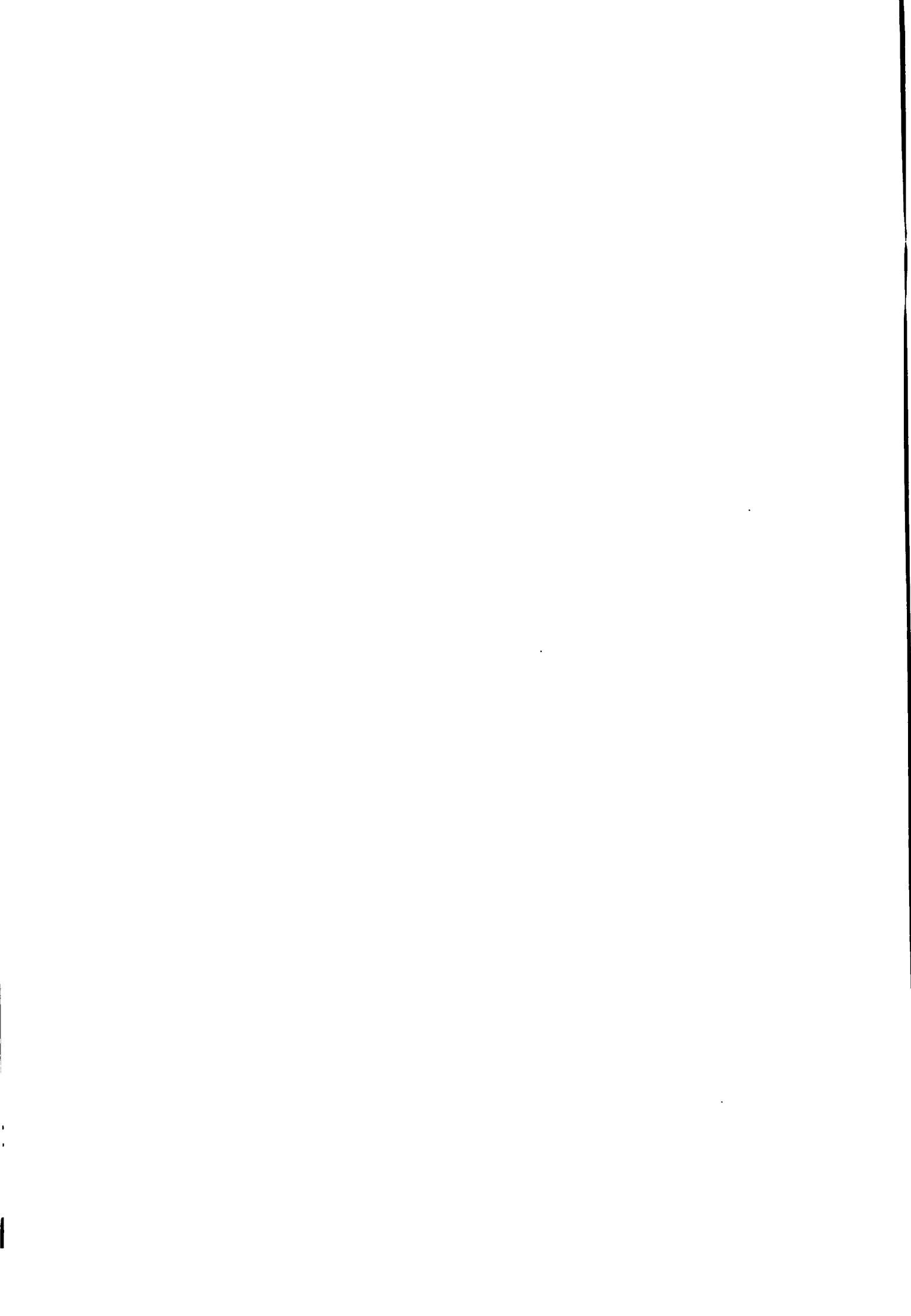
1.3.1 Technology Transfer

- (i) The use of the following pieces of equipment were demonstrated and made available to farmers:



- (a) Push pull seeder (cowpea)
 - (b) Hand thresher (cowpea)
 - (c) Hand driven rotivator
 - (d) Knapsack spray cans
 - (e) 3" water pumps
 - (f) Jab planter
- (ii) The following improved cultivation practices were carried out on farmers plots and benefits demonstrated to groups of farmers:
- (a) Use of fertilizers and limestone to improve soil conditions in order to increase sweet potato yields.
 - (b) Use of insecticide to control the sweet potato weevil and reduce crop damage.
 - (c) Approaches to working with high salt content soils (land preparation, crop variety, chemical use alternatives).
 - (d) Use of fertilizers to increase plantain yields.
 - (e) Use of improved planting materials to increase plantain yields.
 - (f) Use of land preparation and spacing regimes to increase plantain yields.
 - (g) Introduction of yams as a new crop into the farming system.

Materials indicating aspects of the on farm trials established are shown in part 3.1.

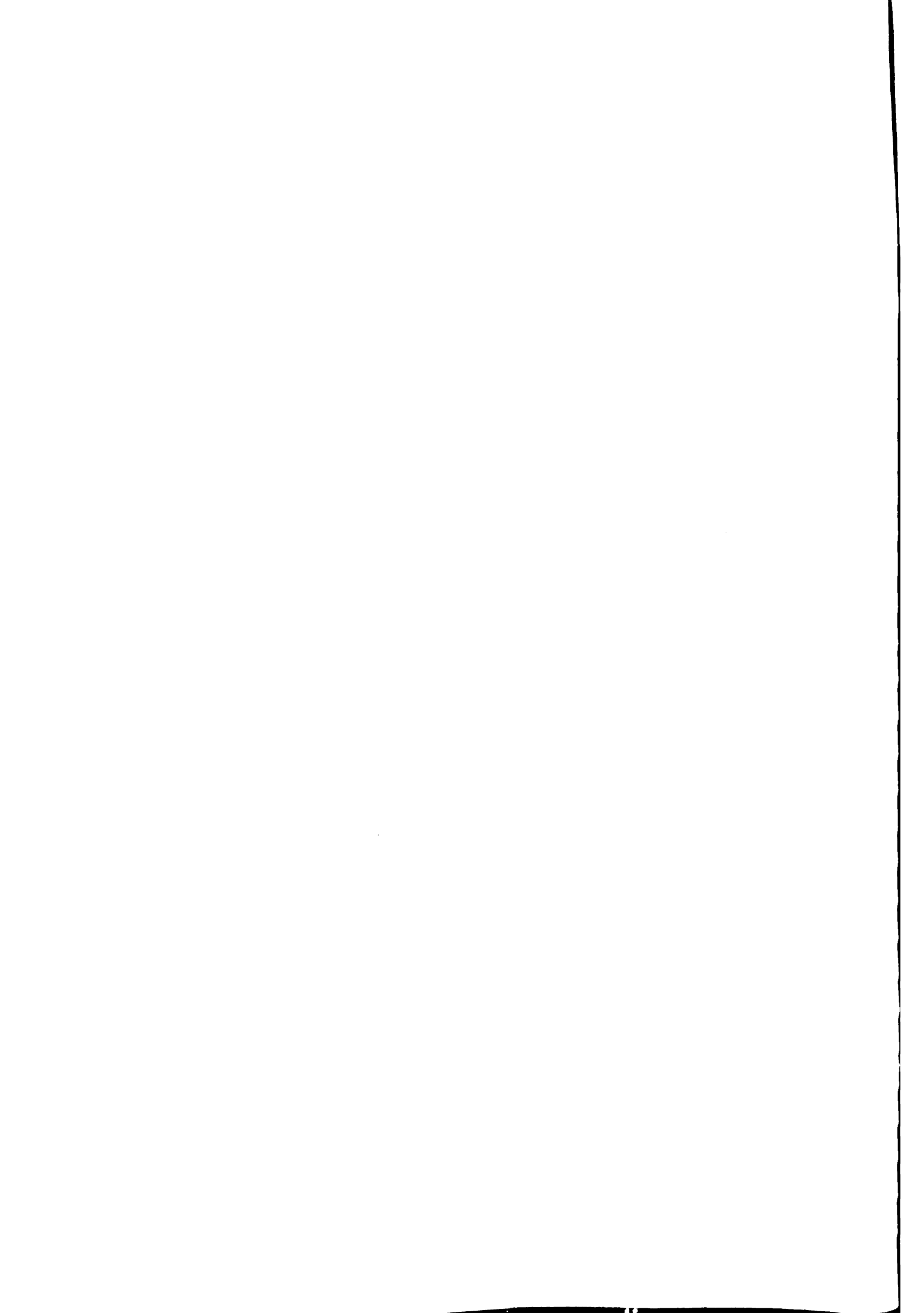


1.3.2 Training

Meetings were held with farmers and the following presentations were made by technicians competent in the area. Ministry of Agriculture and Interamerican Institute for Cooperation on Agriculture personnel were the main resource persons utilized. Notes on the presentations were later delivered to the farmers and displayed on the notice boards erected in the farming area for this purpose. Areas covered were:

- (a) Seedling Production - Vegetables
- (b) Vegetable Production - Controlling Insects
- (c) Vegetable Production - Controlling Diseases
- (d) Vegetable Production - Controlling Weeds
- (e) Pesticide Safety for Small farmers
- (f) Sweet Potato Cultivation practices
- (g) Blackeye Cultivation practices
- (h) Essentials of Farm Management
- (i) Farm Management Records
- (j) Preventing Post Harvest Losses in Vegetable (Perishable) Crops
- (k) Minimum Tillage Systems for Small Farmers
- (l) Land Preparation and Planting of Vegetable Crops
- (m) Dairy Production Methods and Animal Health
- (n) Plantain cultivation practices
- (o) Yam cultivation practices
- (p) Small Farmer Equipment Maintenance (Water pumps and Outboard Engines).
- (q) Obtaining Small Farmer Credit.

Examples of materials prepared for farmer training sessions appear in part 3.2.



1.3.3 Infrastructural Development and Input Supplies

The provision of improved input supplies and infrastructure services to the project area was brought about through the collaboration of the four agencies mentioned above and the Interamerican Development Bank (IDB). The provision of a financial grant by the IDB after the floods had caused considerable losses in the farming area was crucial to much of the project's later success.

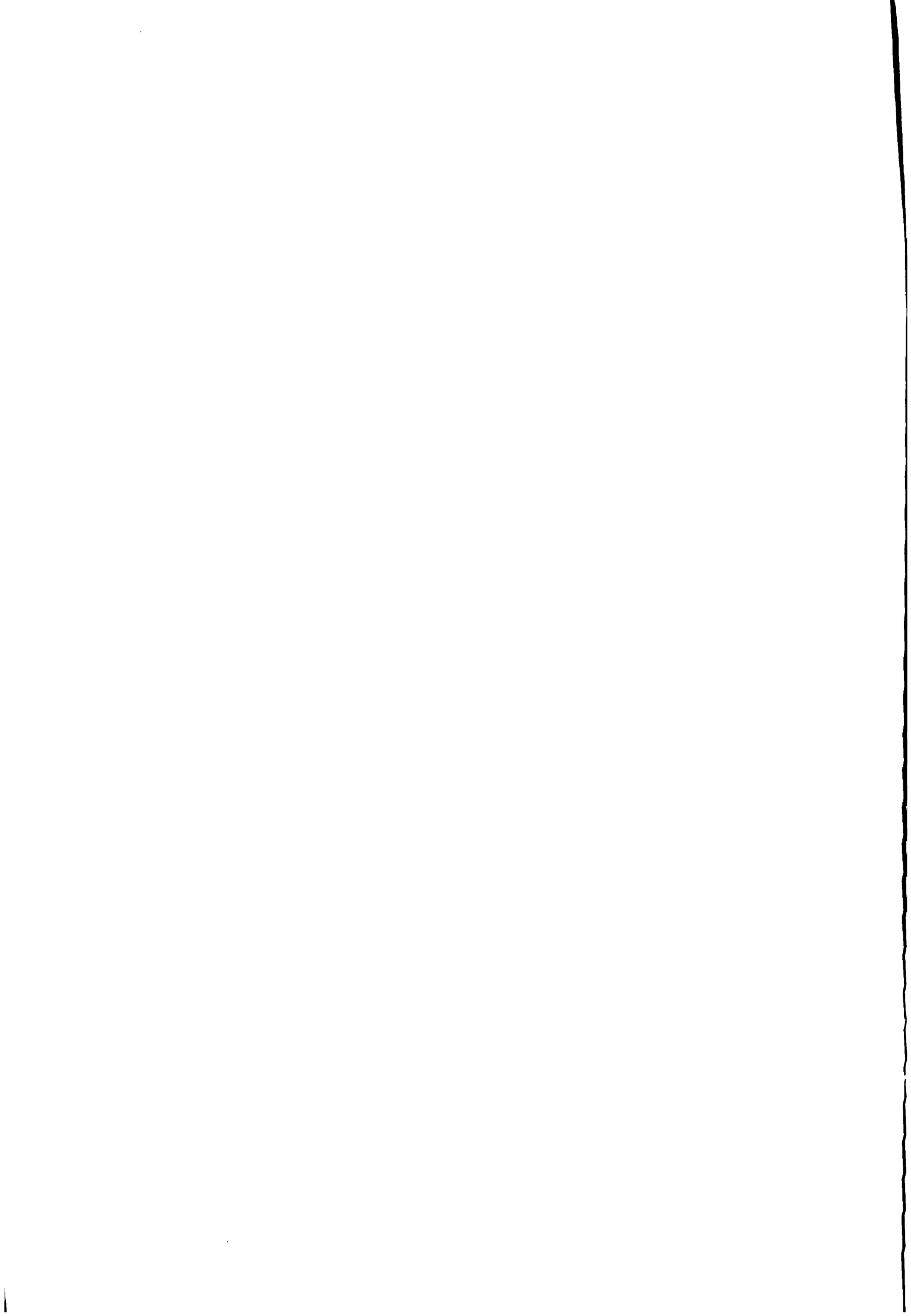
Infrastructural Development

- (a) Notice boards placed for farmer technology information. Examples of information displayed on notice boards are shown in part 3.3.
- (b) Main canal dug through Whim farming area.
- (c) Major Drainage scheme rehabilitation works in Crabwood Creek (CWC) (Five drainage canals were desilted, totalling 133,775 cubic yards. Six new Koker boxes were also established).
- (d) Empoldering of farming area - 6000 acres.
Length of empoldering dam 37,500 feet.

The main sections of the final report on the emergency assistance grant which made the CWC infrastructure work possible is reproduced in part 3.4.

Input Supplies

The following inputs were made possible through the intervention of the project, mainly through the Crabwood Creek/Moleson Rehabilitation project. The project was identified and designed by the farmers and the collaborating

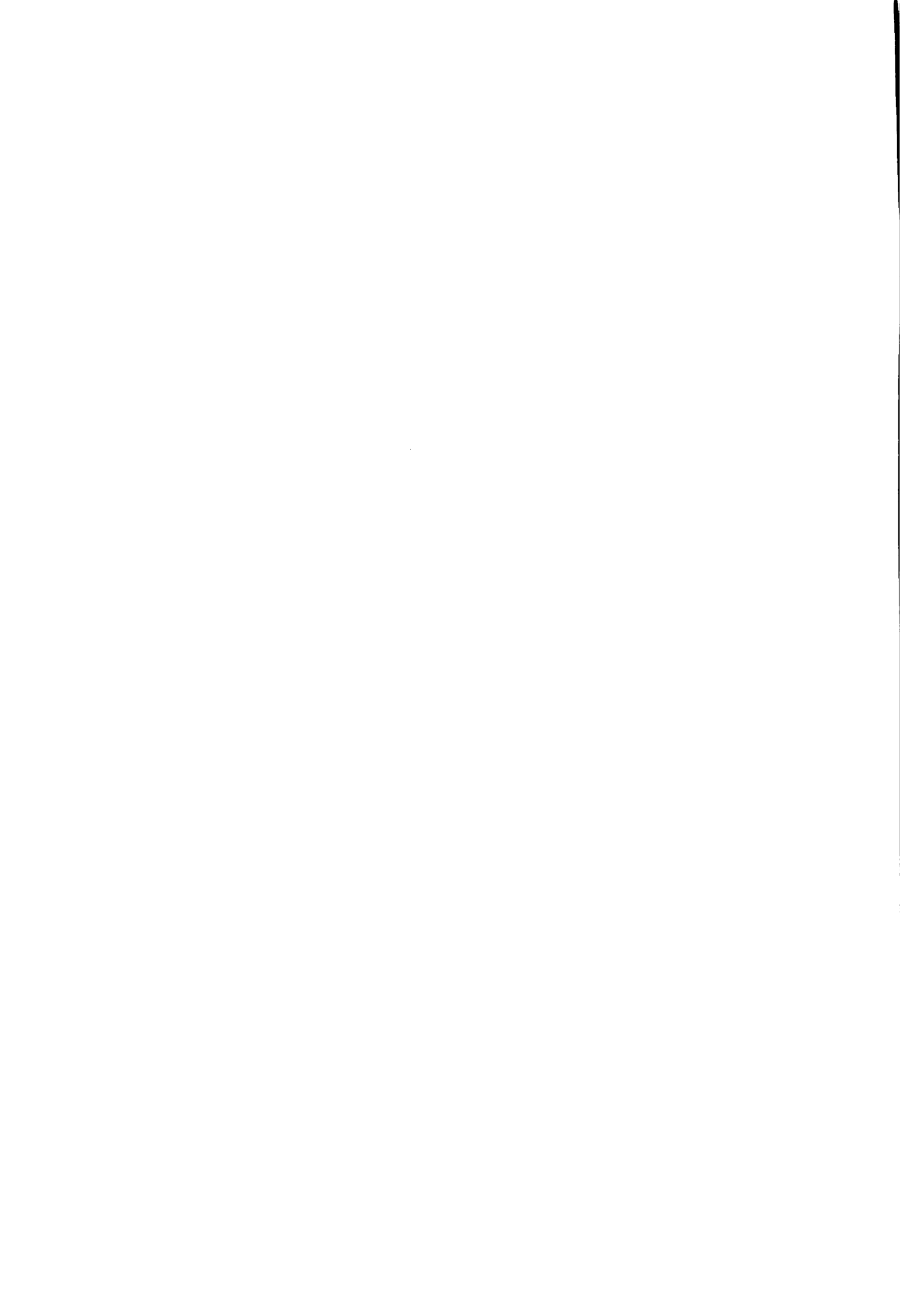


institutions. It was prepared by IICA and financed by IDB. Farmers received the following:

- (a) Spray Cans - 120 units
- (b) Water pumps - 20 units
- (c) Agricultural Chemicals - 3,050 litres
- (d) Agricultural Fertilizers - 60 tons
- (e) Outboard engines - 60 units
- (f) Vegetable seeds - 275 lbs.

. 3.4 Organisational Development

The project strengthened existing organisations separately by demonstrating programming and management techniques. The inter-institutional collaboration utilizing the particular skills and resources of each institution and putting these together so as to deliver a highly valuable package of services to the community is very instructive and should be replicated. The crucial role of the farmer in the process was exemplified equally as much as was the resistance to his inclusion in this process of change. The "Crabwood Creek Agricultural Development Committee" which was formed under the project, met on average twice monthly for two years, developed as an organisational unit to serve farmers and played the leading role in the implementation of the project. The Committee was elected by farmers and demonstrated in a classic way the problems small farmers face in organising for their development. The Local Village Council was the established coordinating body in the area and perceived the farmers organisation as a threat to their authority. As a result cooperation between the two bodies had to be developed very carefully. The intervention of the



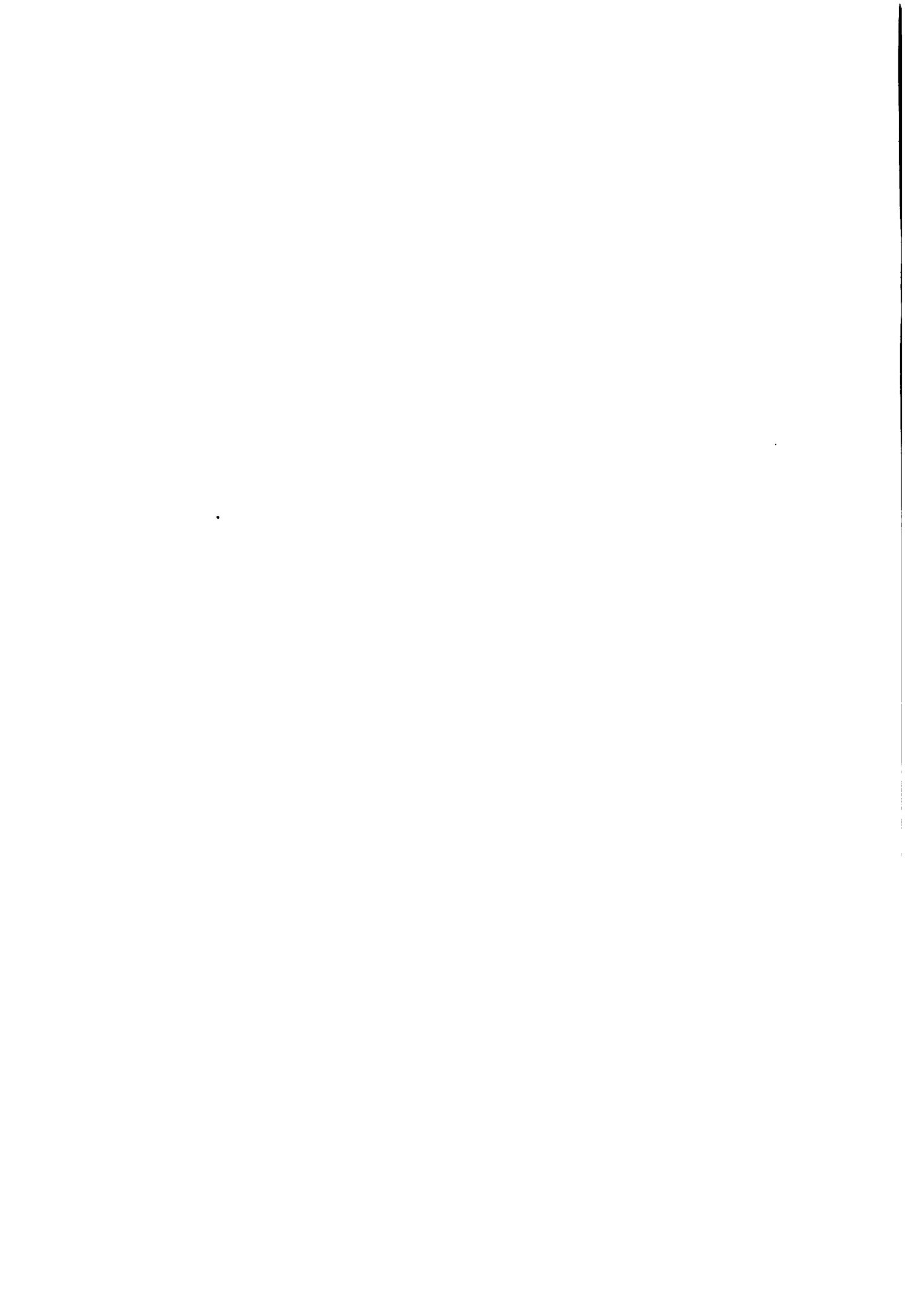
of the regional authorities was important at several points to ensure that the avenues of communication remained clear and the farmer organisation became strong enough to survive on its own. The Farmer's Committee did much of the supervision of the infrastructural works and carried out the difficult task of distributing the inputs. Much was achieved in this important area of farmer organisation, and much experience was gained in establishing farmer groups to represent themselves. By the end of the second year the exchange of information (shown in part 3.5) between the farmer organisation and the Village Council mirrored the level of farmer organisation development.

1.3.5 Increases in Production and Productivity

In both the project areas the following were obtained after three years of the project:

- (a) Farmers increased the acreages under cultivation, individually and collectively.
- (b) Farmers yields increased in crops that dominated their cultivation, particularly plantains, sweet potatoes and blackeye.
- (c) Persons who had access to land and were not farming at the start of the project placed some of this under cultivation.
- (d) Farmers bargaining position with marketing agents and governmental service agents enhanced.

This resulted in higher product prices at the farm gate and improved infrastructural services, input supplies and technological information available to the farmers.



- (e) Farmers paying of rates and taxes promptly increased and as a result the Village Councils efficiency and responsiveness to farmer's needs increased.



Part 2: Small Farmer Development in Guyana - A Derived Model

The basis of this section is the experience gained in working with small farmers in Guyana in general and on the IICA/Government of Guyana project in particular. The intention in this section is neither to give a report on efforts at small farmer development in Guyana nor to detail the activities and experience specific to the IICA/Government of Guyana project. Rather, the section is designed to meet the final objective of the IICA/Government of Guyana project - to develop a model for small farmer development in Guyana. As such it reflects the lessons of experience from small farmer development in Guyana and only refers to the nature of the experience to demonstrate the object lesson.

2.1

Background

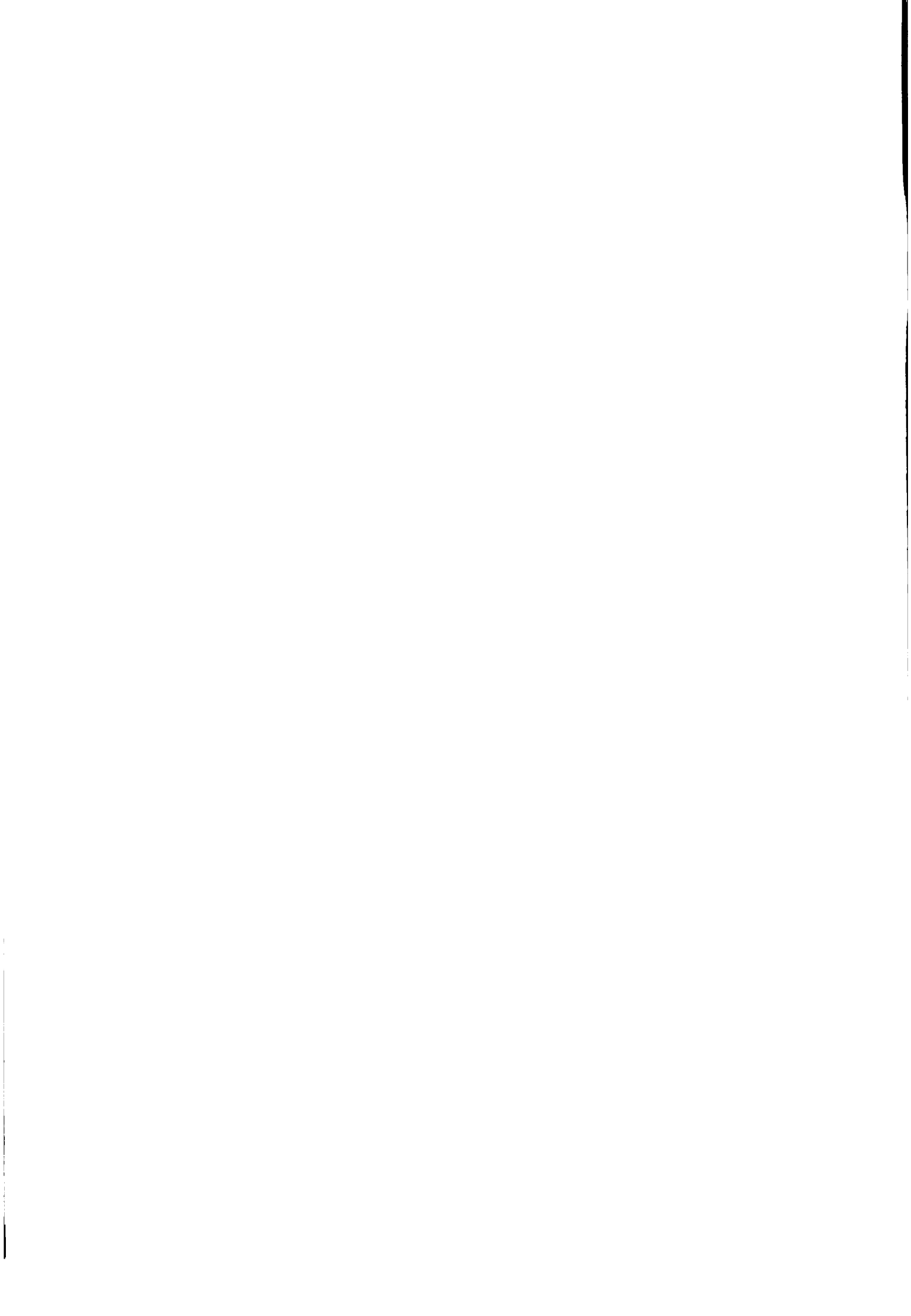
Guyana's total land area is 214,969 sq.kms, approximately the same size as Uganda, Ghana or Britain. Unlike these countries, however, its population is small (.75 million as opposed to 13, 12 and 56 million respectively) and highly concentrated (90 per cent of the Guyanese population is located in ten per cent of the land on the northern coast). The estimates for 1982 indicate that 73 per cent of the population is classified as rural and 34 per cent of the labour force is in agriculture. An important statistic influencing the approaches to development that can be adopted in Guyana and the Caribbean is the level of literacy. In Guyana adult literacy in 1970 was estimated to be 91.6 per cent (most of the Commonwealth Caribbean have a figure of greater than 90 per cent), compared

to 30.2 per cent in Ghana, 52.3 per cent in Uganda and 20 per cent in The Gambia.

Guyana's agricultural sector contributes approximately 25 per cent to Gross Domestic Product and is dominated by sugar and rice production. Both of these activities are highly commercialized, the former characterized by state owned plantations and a corporate marketing structure, and the latter by private production but publicly marketed product. The agricultural policy, production and marketing resources of the government of Guyana have been largely devoted to these two export crops. Rice is also consumed as the staple food. The remainder of the agricultural sector is made up by food-crop producers, livestock producers, forestry and fishery product producers. This report focuses on small farmers who are largely the foodcrop producers. Livestock producers are considered in so far as they are integrated with and/or affect small farmer food crop production.

2.2 Profile of the Guyanese Small Farmer

The small farmer in Guyana generally owns and cultivates less than four hectares of land. The crop produced varies with location, and is usually multicropped and falls into the four categories of ground provisions (cassava, yams, eddoes), vegetables (eggplant, pumpkin), greens (eschallot, bagee, celery) and fruits (bananas, citrus). The crucial characteristics of the small farmer, however, are not the size of land owned or cultivated, or the crop grown, it is the technology of production and the services available to the sector. The small farmer's production system can be described as labour intensive



(with almost all the labour supplied by family members), low technology in that utilization of purchased inputs (materials and equipment) are minimal (with consequent low yields). This latter characteristic is closely related to the other characterizing feature of the small farmer which is the virtual absence of support services. Small farmers in Guyana can be described as starved of or hungry for production and marketing services. These include infrastructural services, be it dams, drainage and irrigation canals, kokers, roads; research, extension, credit and input supply services to facilitate the adoption of improved methods; marketing services, be it price information, storage and transportation, or market outlets. The absence of these services to small farmers is a reflection of both the governmental emphasis on export crops as well as of the weak demand resulting from the lack of organisation characterizing small farmer producer groups.

The small farmer features prominently in Guyana's rural communities. Of a total of 24,703 farms in the country, 60 per cent (14,890) were under 4 hectares (10 acres) and 28 per cent between 4 to 10 hectares (10 to 25 acres). The most recent farm household survey in Guyana also indicated the low income status of the small farmer, the unprofitability of his farming operations and the limited alternative employment opportunities available to him¹. Sixty-six per cent of the rural households had annual incomes below G\$800 per capita and 80 per cent had incomes below the Guyana target of G\$900².

¹Guyana Rural Farm Household Survey, August, 1982, USAID, Guyana, Ministry of Agriculture

²US\$1.00 = G\$4.40



Over 60 per cent of the income of rural households came from sources other than their own farms, with most of this coming from wages in non-agricultural work. Further, more than 25 per cent of all farm households reported losses on their farming operations in 1978.

Recognising these characteristics of the small farmer and the rural communities, and being aware of the importance of this sector to the food supply of the nation, projects to promote small farmer development are needed. These projects must be carefully and flexibly designed, and cautiously and creatively implemented.

2.3 A Model for Small Farmer Development in Guyana

Small farmer development in Guyana has been the stated purpose of both governmental and non-governmental institutions for a long time. Perhaps the most famous expression of this in the context of Guyana has been the government slogan of the early 1970's: "Make the Small Man a Real Man". The Government of Guyana initiated several separate projects which have some impact on small farmer development. These projects range from capital investment projects involving irrigation and flood control works, to projects designed to improve agricultural services and provide subsidized farmer inputs. They include the Interamerican Development Bank supported Food Crop and Marketing Project, the Mahaica/Mahicony/Abary and the Tapakuma Irrigation projects. Similarly, the Government launched production promotion campaigns to stimulate production of selected foodcrops and prohibited or restricted importation of

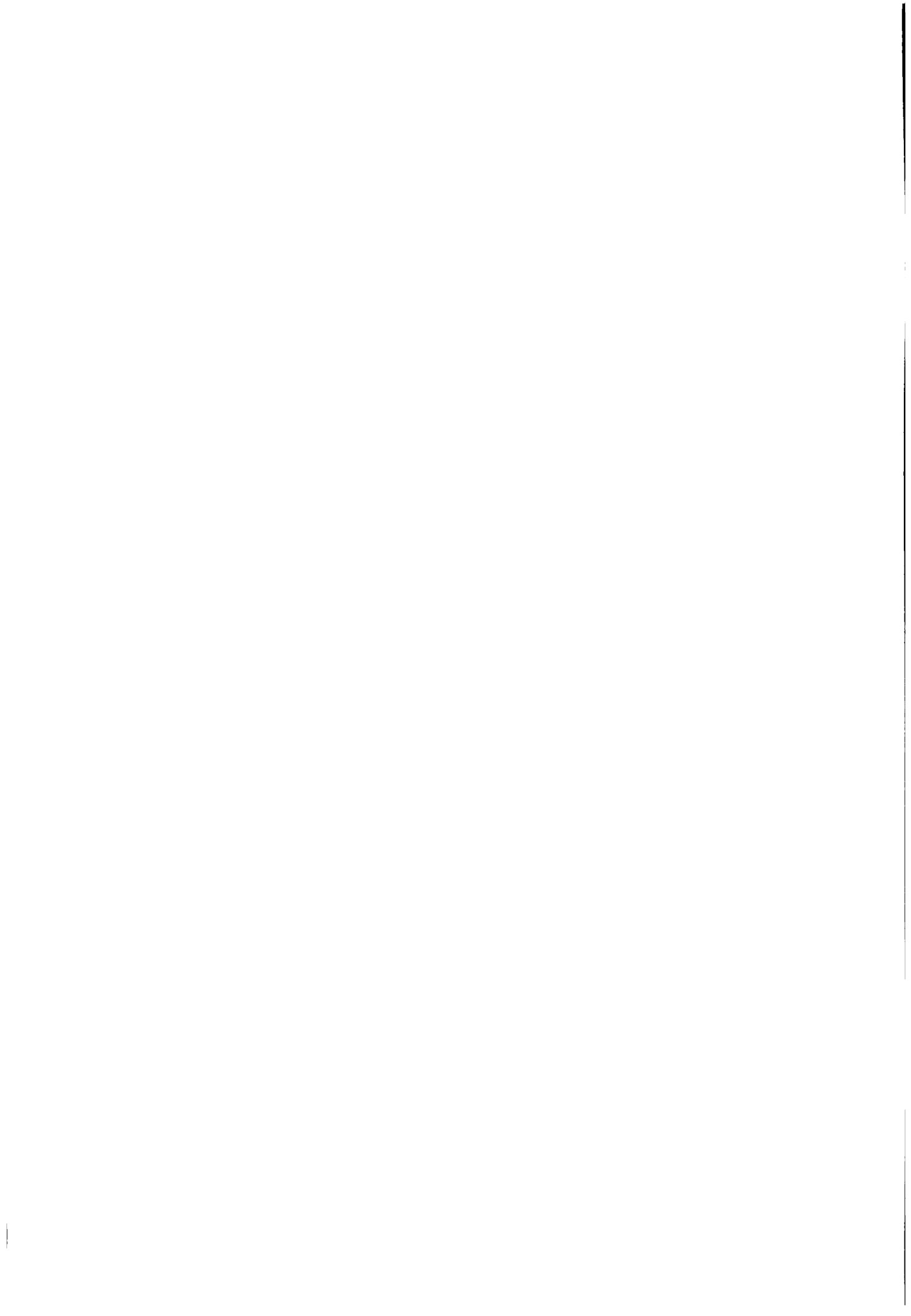
a large number of food items. All these initiatives had some bearing in a general way on the problems of small farmer development but did not address directly such critical areas as information systems, production technology systems, institutional services for the small farmer and small farmer organisations. In order to explore the filling of this gap the Ministry of Agriculture in collaboration with the Inter-american Institute for Cooperation on Agriculture developed a project entitled "Increasing Small Farmer Production and Productivity". After two years the project's focus was widened and it was renamed "Small Farmer Development". One of the intentions throughout was to address the needs of specific target groups of small farmers and on the basis of this experience develop a model for small farmer development. The model derived is presented as a two stage model. A representation of the model, its phases and process is shown in Figure 1.

2.3.1 STAGE 1 -Responsive Intervention

The first stage is referred to as responsive intervention and is characterized by three steps: initial information, initial actions and the diagnostic survey.

Initial Information

The nature of the entrance to the community is crucial. Firstly, the existing organisations should be utilized for both information purposes and for logistical support. Their roles must be acknowledged and their cooperation earned. Secondly, the community's voice must be identified separately, both if it echoed or is discordant with the existing institutions.



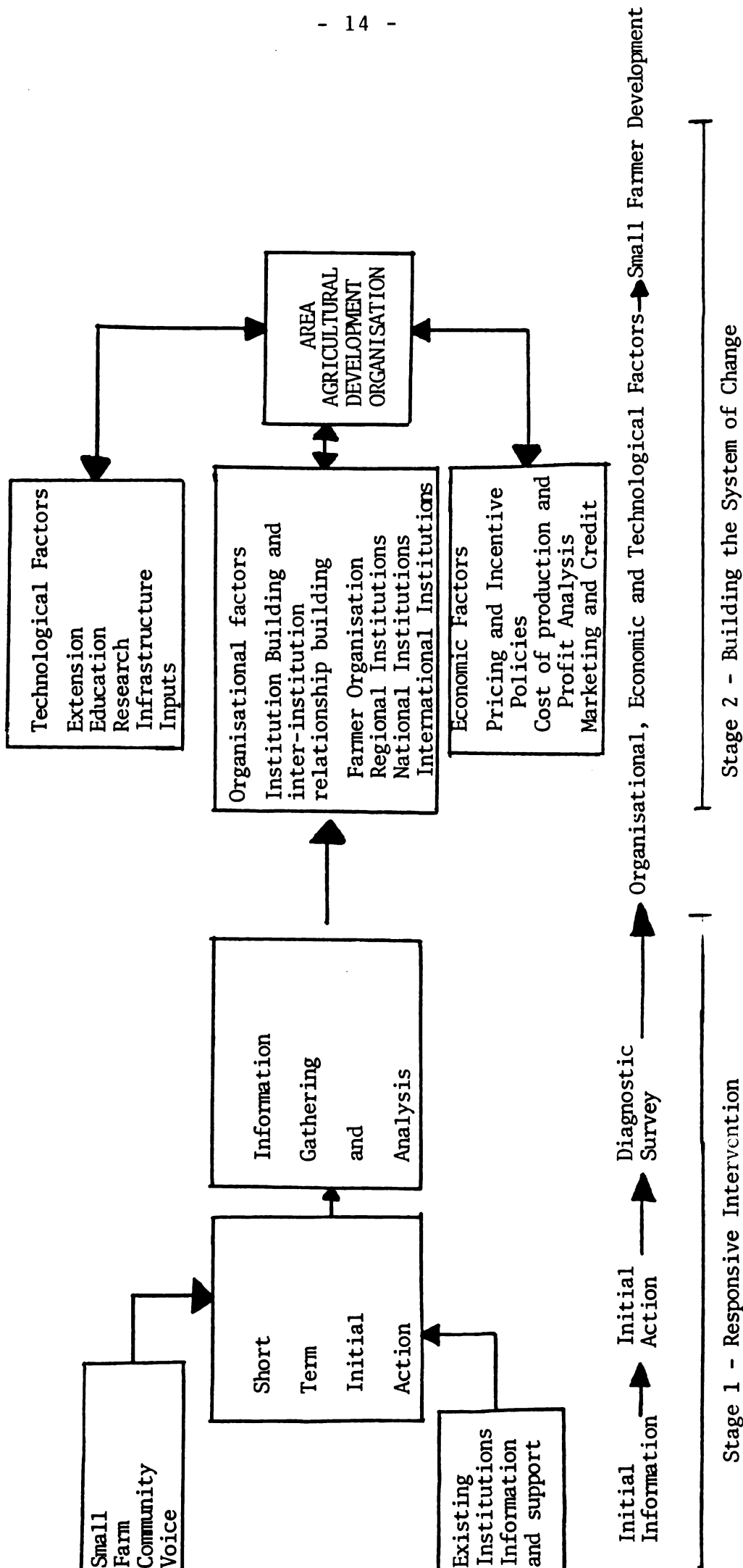
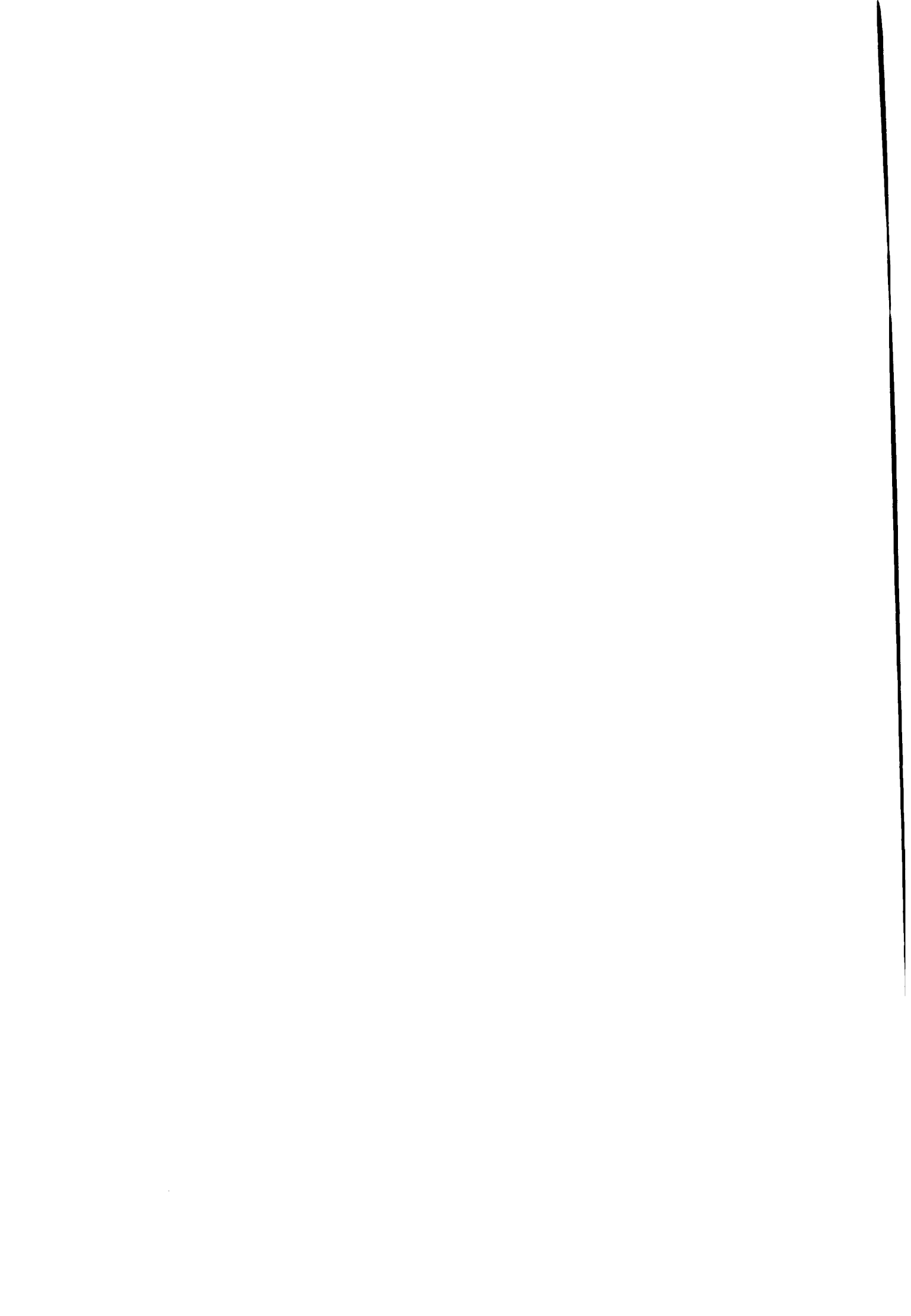


FIGURE 1: SMALL FARMER DEVELOPMENT MODEL - GUYANA

In the IICA/Government of Guyana project three institutions were involved in the intervention. The Inter-american Institute for Cooperation on Agriculture took the leading role and the Ministry of Agriculture and Ministry of Regional Development (Region 6) provided policy, counterpart and technical support. Apart from the involvement of these two key ministries the project plugged in to several other agencies and organisations already relating to the communities. The most important of these were the local farmers organisations, and the local government authority. Through the latter, activities were coordinated with the regional institutions affecting land policy including land ownership, rates and taxes, drainage and irrigation services, credit, extension, inputs and marketing.

The 'promises', both governmental and international institutional, not delivered in the past, influenced the reception to new efforts. The 'discussions' between farming communities and governmental and international agencies had been well attended and the answers to the questions could now be delivered without any thought. The frustration, anxiety and anger on the part of the community was clear despite their efforts to be polite. So where does one begin? The only place is with the most limiting constraint facing the community at the time of intervention. While recognising that institutions face limitations of focus and resources a way must be found to address the most binding constraint even if only indirectly. The importance of flexibility and creativity are immediately demanded.



Initial Action

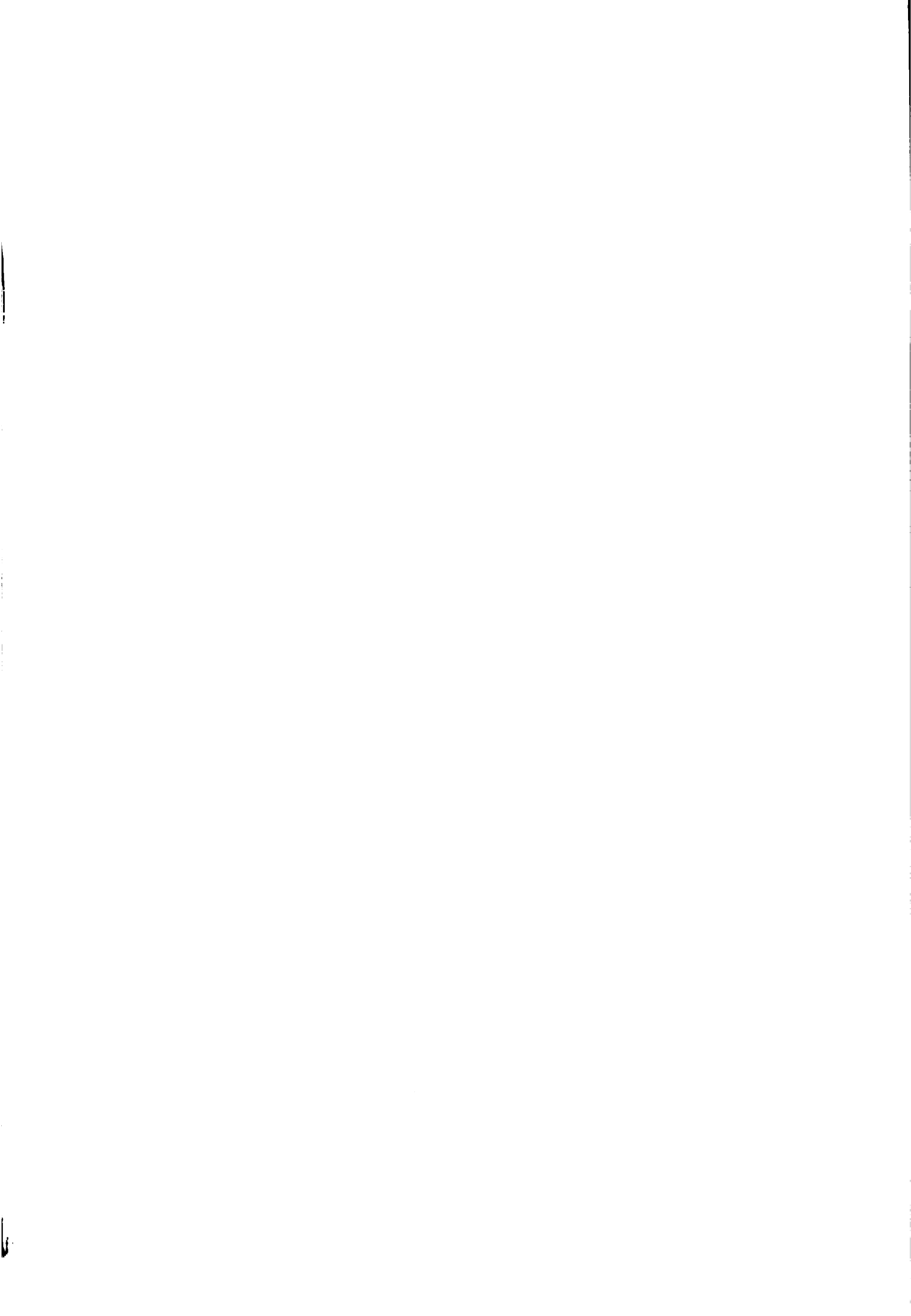
In one area twenty five women were farming fifty two acres of land on a seashore. They each individually cultivated between one quarter acre and two acres of mainly watermelons, tomatoes and blackeye peas. All the farming operations were performed by hand and almost no external inputs were utilized. The income derived from these operations in general supplemented the income earned by husbands on the nearby sugar estate. The women had organised themselves into an informal group and met once per month. At the first meeting attended by project staff the problem identified was the shortage of water and the need for an internal canal linking the farming area with the village drainage and irrigation system. Other problems were mentioned dispassionately and any effort to focus on these without (before) addressing the shortage of water was treated politely but with obvious disinterest. Any alternative solution (e.g. drought tolerant crops) other than their proposed internal canal appeared to be considered suspect.

A working group from among the farmers were identified to meet on site to investigate details and technical aspects of the proposal and to plan a resolution strategy. Within two weeks a plan of action was worked out and implemented. It involved the regional institution (provision of an excavator for the digging), farmers (provision of fuel for the excavator, labour to build the bridges and watchman for the excavator) and the international institution (provision of materials for the bridges, coordination for highlighting the problem and developing and implementing a strategy for a solution).



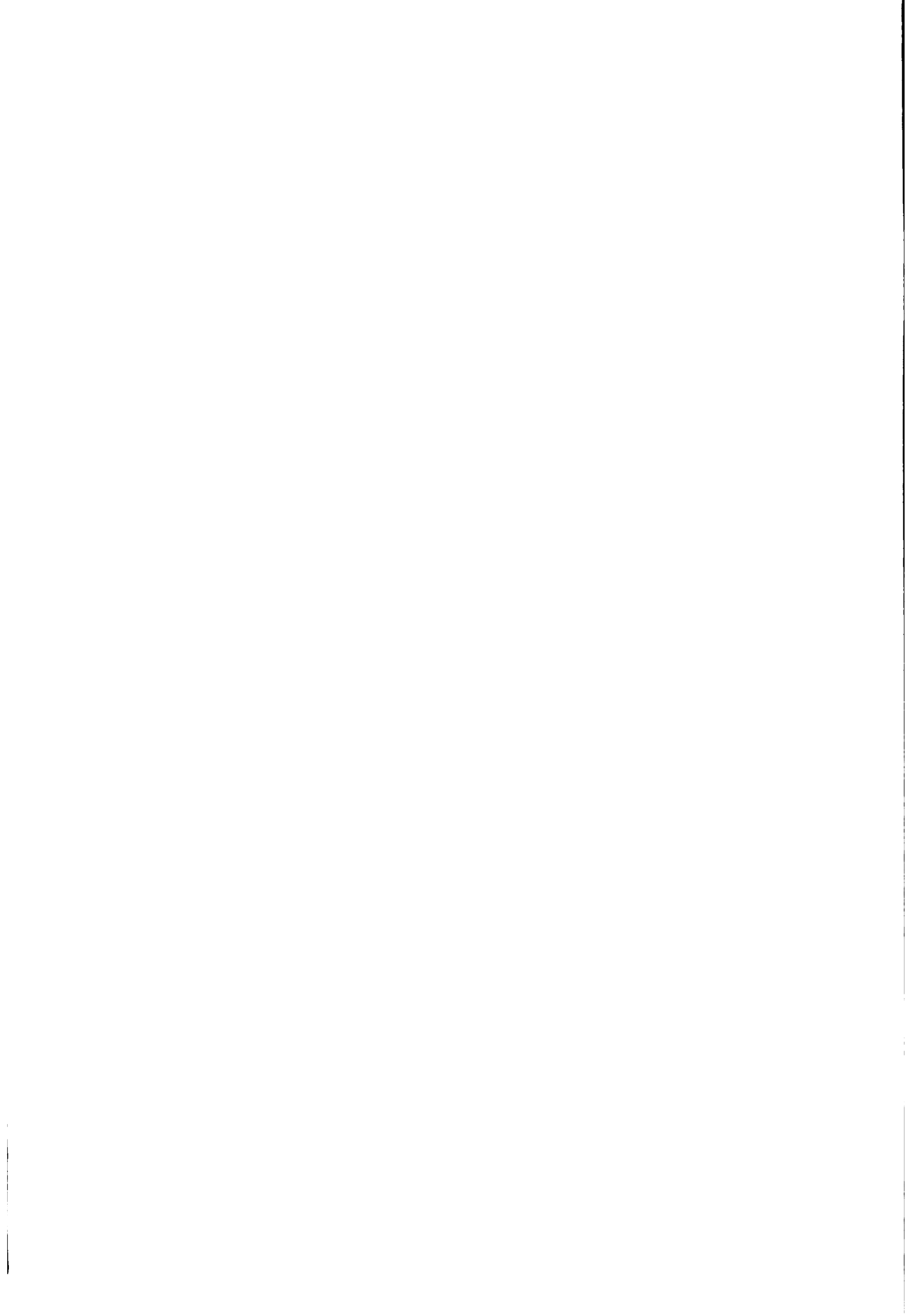
In a second, much larger community involving six hundred farm families cultivating an average of five acres of land, mainly ground provisions (cassava, eddoes, plantains, sweet potatoes) four pressing problems were identified - the drainage and irrigation system needed rehabilitation, farmers accused the local authority of being corrupt, a sweet potato weevil was damaging crops and there was a shortage of inputs, spray cans, weedicide, outboard engines. The outboard engines were needed because the land farmed was three miles away from the coast and the dams were not traversable (particularly for bringing produce out of the farm). Utilizing the drainage canals the farmers went by boat to their farms. In this community, the feelings toward governmental administration and agencies external to the community had hardened. "You all come to waste people's time with promises" was the attitude displayed and statement actually made. Yet, there were those farmers who would take a chance and hope to benefit.

With the extension agent's assistance it was decided to start work in the community on a small scale, learn more about the community, evaluate what might be achieved and maybe then think of holding a community meeting. The fact that the farmers in this area were not organised in any way made the initial entry much more difficult. At the time of intervention, of the four pressing problems, the sweet potato weevil was uppermost in mind. On one farmer's plot the sweet potato problem was investigated and a trial put down to demonstrate control of the weevil. The responsibilities of the farmer and the external collaborators were discussed and agreed on. This involved



essentially four areas. Firstly, the farmer would allocate for one cropping season a portion of land for the trial (1/8 of an acre) and would assist with labour required. Secondly, all external inputs (insecticide, equipment) would be supplied free of charge, including technical management of the trial. Thirdly, all the produce from this plot belonged to the farmer but would be harvested in such a manner as to ensure the analysis of the trial is facilitated. Fourthly, the farmer would allow other farmers (at his convenience) to visit his land to observe the trial. The guidelines put together also included a behaviour code for the 'external' agents.

In both of these cases the intervention into the community was made by responding to the pressing need with a short-term action. The short-term action is important for several reasons. Firstly, because of the failures (both in approach and outcome) of past external interventions a scepticism had developed among rural leaders and residents. They have committed time and resources before to no avail. Acceptance, trust and confidence comes as quickly as the process proceeds from discussion stage to action stage. No matter how tentative, temporary and small, once something is being done it is believed that it can be built on. Secondly, the short-term action process provides the meaningful basis for contact and enquiry. Questions that have been asked numerous times before are not annoying or threathening because they can be related to an action affecting positive change in the community. Thirdly, the short-term action gives indications with regard to the sequences, complementarities and complexities involved in carrying actions out in the community.



The presence of the canal in the first farming area made a marked difference. The sweet potato trial did not succeed in terms of demonstrating a control for the sweet potato weevil but the problem solving approach adopted was not lost on the farmers and they understood how the weather affected the trial. Farmers accepted the agents of change as having a genuine interest in their welfare. The change agents appreciated more clearly the hardships of working in the community - walking to the land, absence of services and lack of maintenance of infrastructure. Farmers came forward to question not only the trial but also the choice of farmer. Further, the local authority thought that they as opposed to the extension agent should identify the farmer for the trial.

The preparations for a second trial began immediately on writing off the first, it was implemented on another farm during the next season and proved to be a huge success. Both yield and quality of output had improved considerably with minimal pest infestation. The time had arrived for a formal and joint meeting of farmers, local government bodies, regional organisations and international institutions in the area. The meeting was characterized by the farmers complaints about the local authority's inability to deliver its responsibilities to the community and the local authority's claim that farmers did not pay rates and taxes. This time the presentation of the problem by the farmers linked the inadequate drainage and irrigation system to the inefficiency of the local authority. The shortage of inputs problem did not arouse equal emotion. Once again, the burning issues had to be addressed, first or at best simultaneously. The assistance of the regional



authority was sought in keeping the focus of the meeting on agricultural development while other administration matters were tackled. The area was divided into five drainage and irrigation canals and farmers could be grouped according to the section where they farmed. The most important achievement of the first meeting was that more than one hundred and fifty farmers in a school room nominated three farmers from each farming area to further the discussions of the meeting which would now continue between fifteen farmers, the local authority, the regional administration and the international institution.

Diagnostic Survey

The second step in stage one and which lays the foundation for the second stage is the implementation of a diagnostic survey. It is important to establish a presence and achieve some level of acceptance in the community before considering the implementation of the diagnostic survey. It is only after this is done that the cooperation required for a meaningful survey will be forthcoming. In the two project areas referred to above the benefits of implementing the survey at the right time were considerable.

The diagnostic survey must be comprehensive in these essential aspects. Firstly, it serves to mirror the material agricultural and economic situation characterizing the community at the starting point of the project. In other words, it indicates levels of production and productivity, infrastructural and equipment availability, levels of sales, purchases, prices and incomes.



Secondly, it details institutional services and relationships between the institutions (marketing, credit, extension). Thus, the diagnostic survey is not directed only to members of the community but also includes institutions in the community. These historical facts are crucial for planning, comparative analysis and evaluative purposes.

Thirdly, the diagnostic survey provides information on the technological relationships characterizing the community, the time relationship governing activities, the inter-relationships between activities, the knowledge base of the community.

Fourthly, the problems, needs and aspirations of the community are generated. The survey results become the basis and point of departure for the remainder of the developmental process. The diagnostic survey questionnaires utilized are to be published with other reports arising out of the IACA/Government of Guyana project.



2.3.2 STAGE 2 - Building the System of Change

"One-off" processes have been a characteristic of institutional intervention in rural communities. In other words, a very specific community problem is identified, tackled and the institutions withdraw as abruptly as they entered. The results of the action hardly tested and what may have appeared to work shortly after implementation may quickly disintegrate for numerous different reasons. More importantly, however, increasing production and productivity should not be considered successful if not sustained and cannot be sustained if the capacity to problem solve is not transferred simultaneously with the technology. Recognising both of these important aspects of the development process particular care was exercised in terms of the approach and responsibility for the longer term transformation of the farming areas. Obviously, all problems could not be addressed and considerable problems were to be faced as efforts to increase production and productivity continued after initial intervention.

The system of change characterizing the experience reported here was built around several organisational, economic and technological factors. The organisational factors are dealt with in terms of institutional organisations (organisations generally external to the farmer) and farmer organisations; the technological factors in terms of technology generation and transfer; the economic factors mainly in terms of economic policy (government intervention in the sector) and returns to the farming operation.



2.3.2.1 Organisational factors

The organisational factors were considered to be most important because of their critical influence on all the other factors. Firstly, only through improved organisation at all institutional levels could the correct policies determining the technology and economic structures and inter-relationships of the numerous entities be assured. This in turn would lead to useful technological and economic packages being identified, assembled and transferred. Further, only through improved organisation, particularly at the farmer level could the process of change incorporate the social and welfare needs of the community and hence be sustained.

The diagnostic survey, in addition to providing information on the farming system, provides an assessment of the institutions supporting farmer development and farmer institutions themselves. Thus, two groups of institutions are critical to the organisational factors. The first group can be classified as being external to the farmer - the input supply institutions, marketing institutions, research and extension institutions, national and regional administrative institutions and all other institutions which impact on the small farmer system. These institutions are important, singly and collectively and strengthening them as separate entities and as a total system serving the small farmer community is crucial in building the system of change.

The goals of these institutions and the possibilities of meeting the goals set needs to be investigated. The key issues surround the realism of the goals both in terms of the capacity of the institution to deliver as well as



of the community to absorb. The analysis should also focus on the strategies and policies of the institutions and evaluate their chances of success given the resource base and the environment in which they must be applied. The nature of the investigation in terms of details and analysed aspects of the institution increased with the closeness of the institution to the production entity.

Apart from the human, physical and financial resources of these external institutions it is essential to assess their responsiveness to the community. The key questions being - are the goals of the institution coincident with what the farmer organisations expect of the institutions? If so, are the resources of these institutions utilized to achieve these goals? This brings us to the second group of institutions - farmer organisations and other community organisations. These are usually either producer groups, marketing groups or farmers organised to present a community position on the socio-economic development of their area. The influence of these farmer groups over external institutions is crucial to entrenching the process of change. This influence is generally realized in two ways. Either by the strengthening of the small farmer organisations' lobby or by the direct involvement of the farmer in the external institutions, or both. Presently, one finds that more often than not these two groups of institutions are not only not integrated or even related but worse antagonistic.

The situation in one of the project areas was clearly antagonistic and exacerbated by the weakness of both groups of institutions. The external institutions generally suffered

from the lack of resources - human and financial. The farmer organisation was virtually non-existent. As indicated above, at the first community meeting farmers nominated farmers to represent them on a joint committee. This committee met regularly and although integrated in that it consisted of both farmers and external institution representatives and was chaired by a farmer (who was also an external institution representative in that he served as a village councillor) it was under constant attack from the local village administrators. At all times, the only complaint of the village administration was that the joint committee included farmers "antagonistic" to its authority.

A new era in farmer organisation and in external institution involvement with this community had begun. The weakness of the input supply system, the extension system, the infrastructural maintenance system, the marketing system, the administrative system and others were pointed out and suggestions for resolution generated by the farmers. Each meeting was attended not only by members of the committee but by a gallery of farmers who oversaw the process and intervened when necessary. Farmers had a regular forum and used it. Within a few months a list of priorities was developed. The chairman of the farmers' committee and other farmers and committee members who served in any capacity in external institutions were asked to relay the suggestions emanating from the committee back to these institutions.

In most cases the results were heartening. The agricultural officer mobilized the food crop reporters and the local extension officers to improve their services as conditions allowed. The Drainage and Irrigation officers



came to meetings out of interest and worked out solutions to related problems. Livestock farmers came to inform the gathering of their apparent neglect. The conflicts between livestock owners who grazed their cattle in cropping areas surfaced with both positive (alternative grazing investigated) and negative (land rivalry sharpened) effects. The farmer representatives organised self help tasks and encouraged other farmers to pay rates and taxes. Most senior officers in the region visited meetings and took decisions on the spot on the basis of open exchanges with farmers and representatives of other institutions present. The local village council was represented officially on the Area Agricultural Development Committee by its chairman. The area regional representative was also a committee member. For the most part, the local village council participated actively in the process. However, it was only the willingness of the regional authorities (who oversee the local village council) to have the farmers participate in determining how the external institutions impact on them that kept this process from being derailed by the local village council. The farmers' organisation was not yet developed enough to survive without this protection.

One year after the first meeting where the farmer representatives were nominated by farmers it was decided by the committee to hold elections for new farmer representatives at each of the five points which separated the farmers into five groups. The level of participation both in terms of quality and quantity reflected the fact that the farmers considered the committee's existence



important to the realization of their own goals. The ascendancy of the committee increased as the collaboration between external institutions themselves deepened to improve the services to the farmers. Perhaps, the most important activity arising under the project was the joint committee's design and implementation of the drainage rehabilitation programme. This was tied to the importation of inputs to support the increased activity after the rehabilitation works. The joint committee became known as the Area Agricultural Development Committee.

The farmers, through this committee, participated in the rehabilitation programme at every stage. The type and quality of the job expected from the contractors was drawn up at a farmers' meeting. The farmers developed and agreed on criteria for the assessment of the work done by the contractors as well as on criteria for the allocation of the inputs provided under the project. A report of this specific activity is presented in part 3.4.1.

The system of change, from an organisational standpoint, was introduced but still needed the protection of the regional authorities for its continued existence at its present level. Intense antagonism referred to above affected the farmers organisation taking root and perpetuating itself in this short period of its existence. The role of the regional institution in this situation is to speed up the process of the farmer organisation developing into an effective and self sustaining lobby and decision making unit.

Several important organisational points arise out of



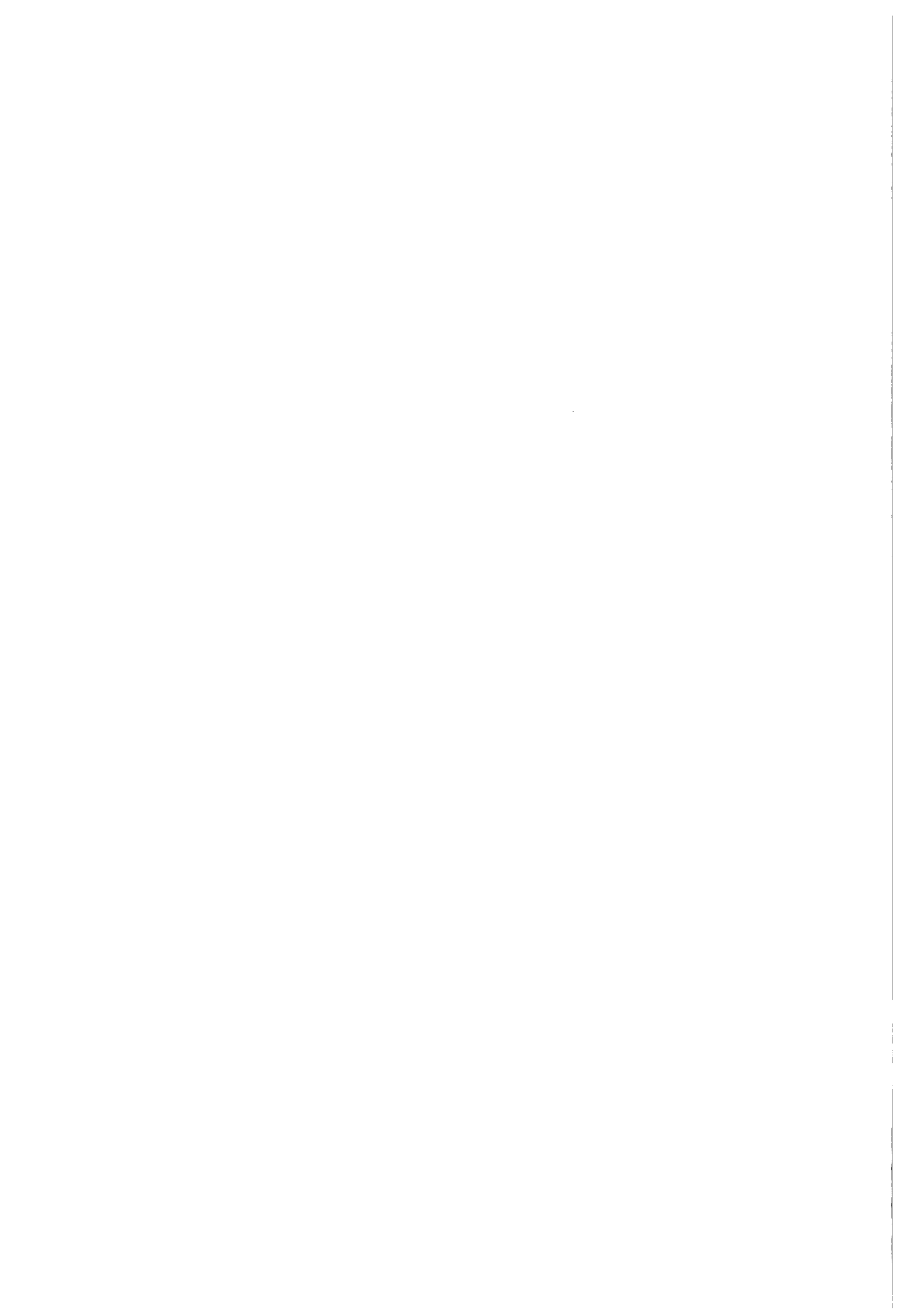
this experience. Firstly, existing resource institutions within and outside the project areas must be utilized and what is needed may be the creation of linkage organisations but certainly not parallel organisations. Secondly, the improved coordination and collaboration of external organisations is critical to effecting change. Their resource effectiveness can be greatly expanded in this way. Thirdly, the small farmers must be involved either by integrating them into external organisations or fostering the strengthening of their own. This is essential both for the input of information for correct problem identification and decision making as well as for successful implementation of sustained change. Fourthly, antagonisms are a part of the evolutionary process of change and must be recognised as such. Reversals must be prepared for and overcome.

The organisational changes are crucial and the variables influencing them are complex. While the process is being put in place the extension of technology and economic gains must be simultaneous to sustain the evolving organisational process. More so, to ensure that when the organisational forms mature the rate of development of the community will be even faster.

2.3.2.2 Technological Factors

The technological factors influencing small farmer development presently emanate mainly from the research, extension and education frameworks in these countries. It is now well recognised that these services suffer many shortcomings from the standpoint of the small farmer. Firstly, they were conceived and built around export crops and generally maintain this orientation. As a result, they serve plantation, corporate and large scale agriculture. Secondly, they are governmental institutions and are tied closer to the political or civil service system than they are to the commercial or production system. Thirdly, they are generally not perceived as useful because their process does not yield immediate impact and its product is not readily apparent. Hence, they are usually understaffed and underfinanced. Yet, there is unquestionable acceptance of the crucial importance of research, extension and education systems in the development of small farmer communities.

In the last section the necessity for small farmers to be involved in the process at all stages was indicated. Many research frameworks continue to focus on academic problems as opposed to production problems. Research proposals should be heavily justified on the basis of their immediate relevance to the small farmers. The rule of thumb should be to favour applied, location specific, on farm trials in the place of basic, national, experiment station research work. Of course, the implications of this in terms of physical, human and financial resources needs to be appreciated by those allocating resources to serve the development of small farmer agriculture.



The technology generation and extension framework in Guyana is moving in the direction of the above suggestions but has yet to receive the means to be useful. The approach adopted under the IICA/Government of Guyana project benefitted considerably from the involvement of office personnel simultaneously in attempts to restructure the research system in Guyana¹.

The essence of the approach was to perceive the research and extension of system as one process with a reciprocal information flow between researcher, extensionist and farmer. The technology transfer experience in the project verified the benefits of this approach. The vehicles utilized were training sessions, on farm trials/demonstration plots and distribution of information.

The successes of the on farm trials in one area where improved sweet potato and plantain cultivation systems were extended is reported in part 3.1. In one area trials were conducted utilizing a plot allocated by farmers but without direct farmer involvement after planting. This trial was an effort to improve the management of saline soils. Saline tolerant crops, planting on mounds, and chemical controls were introduced. International professionals and Ministry of Agriculture's senior soil scientists visited the area and made recommendations. In no instance were any of these efforts successful in growing a viable crop. The experience was useful however from several standpoints. It demonstrated the absolute necessity of involving the farmer in the process unless the trial is conducted under 'experimental station' conditions. It demonstrated the

¹See IICA (1982) report of the Agricultural Research Workshop Committee on Improving the Agricultural Research Systems in Guyana.

importance of preparing farmers for what might be perceived as negative outcomes and for the fact that the resolution of problems require persistence and creativity. It demonstrated to the project participants the frustrations of management at arms length - the area was not readily accessible in terms of communication. The logistics of efforts in this area are currently under revision.

Information relevant to farm problems were generated and distributed by two means. Firstly, through training sessions. The use of personnel familiar to farmers and the need as a result to upgrade extension staff was clearly realised. The project also used persons from outside of the areas and although the sessions were generally useful, the transferral of technology was hampered by the attributes of the person extending (sometimes a different culture, dialect and inability to reach the farmer at his level).

The sessions must be practical and very related to a current production problem. Thus, if possible, specimens must be live and taken from the actual area in which the training session is being held. The cost effectiveness of the proposal must also be clear. As a result, preparedness and flexibility by agricultural sector staff is greatly needed to service small farmers through training sessions. The need to train trainers could not have been more recognised.

The use of notice boards for agricultural extension materials was implemented in the five "focal" locations in one area. The use of this vehicle is new to Guyana and its implementation proved difficult. The preparation of material for display needs thought and creativity to be



useful. These skills are costly and generally not readily available. The use of this medium needs further consideration. However, the use of notice boards for notification of meetings, sale of inputs, market prices and other general information is highly recommended.

Infrastructural services and inputs supply services must be considered with the technology factors affecting small farmer development. The availability of water, the correct amounts at the right times, and the availability of weedicide or insecticide if a part of the technology package, must be ensured if technology introductions are to transform these communities positively. The linkage between the technological, organisational and economic factors are most apparent in this regard.

2.3.2.3 Economic Factors

The economic factors in the small farmer development process are integrally inter-related with the organisational and technological factors. The organisational factors most notably affect the scale of production, the availability of production inputs and services, the production policy framework and the cost/price ratios faced by small farmers. The technological factors largely arise out of the organisational framework (i.e. influencing what technologies are available and utilized) and their economic importance is related to their effects on the cost of production.

The most visible economic factor in small farmer development is the cost/price ratios faced by the small farmer. The other factors such as credit availability, scale of production, stage of production, technologies adopted,

marketing system utilized assumed importance mainly in terms of their impact on the cost/price ratios. In Guyana, during the period in which the experiences reported here were generated, the cost/price ratios changed considerably as a result of other significant changes in the economic environment.

Firstly, trade policy and balance of payments problems led to restrictions on imported inputs (seeds, fertilizers, chemicals) and eventually to currency devaluation (higher input prices). The increasing unavailability of imported inputs and the higher prices of inputs domestically led to an increase in the cost of production. Secondly, domestic policy sought to hold down prices to consumers (urban) through price-controls on farmers produce (blackeye peas). As a result the economic welfare of small farmers declined.

The approach to resolving the economic dilemma faced by small farmers was built around the recognition of the interrelationship of the three factors - economic, organisational and technological. Essentially, that focus on economic variables - in this case credit, marketing and cost price ratios - had to be linked to organisational and technological work.

Credit schemes for small farmers in Guyana have suffered from two setbacks. Firstly the mechanisms for making loans to small farmers despite their "inadequate" levels of collateral are not in place. This has been a result both of the bank not getting into communities and generating a system and of the small farmers who want credit not being adequately, organised to "guarantee" the loan. As a result, medium

and large farmers with their traditional 'economic' collateral and their 'political' collateral have received most of the credit available (in many instances designed for small farmers). This was addressed by trying to change the concept of "collateral" to include community member and community organisation references and also by organising farmers in groups to obtain credit.

The second aspect of credit which affects small farmer development is the inflexibility in terms of time and type of loan. Loans are presently limited to production related activities and the formalities (unwieldy application forms and officer meetings) delay the process to the extent that the farmer commits himself to the traditional outlets (village moneylender) which keep him locked in the underdevelopment cycle.

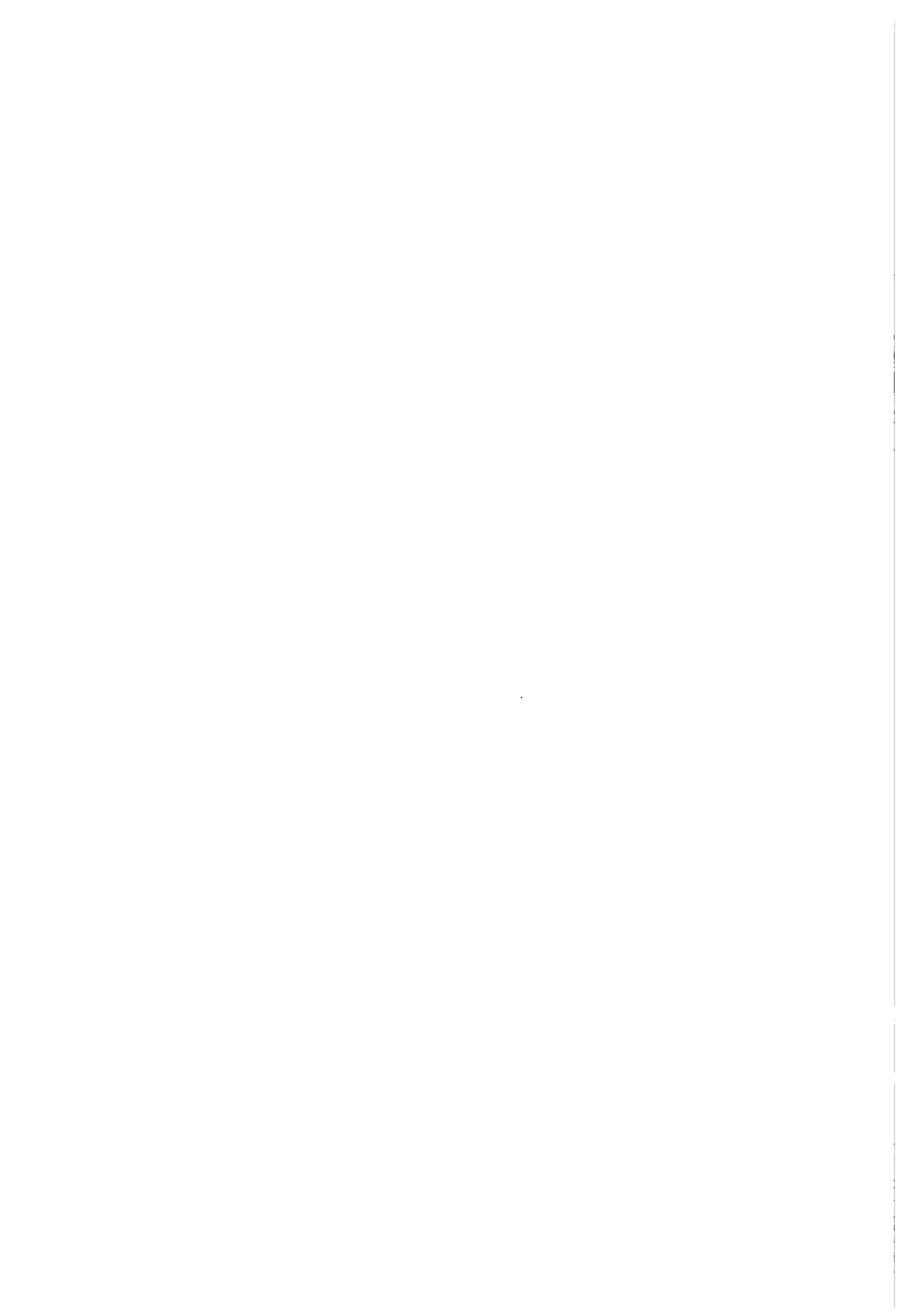
Marketing of agricultural produce in Guyana has two main channels. The private or huckster as the medium or the government marketing corporation. The efforts to promote small farmer development have generally perceived the private channel as exploiting the farmer and as a result have sought to eliminate this medium. These efforts failed, however, mainly because the organisational and technological requirements of such a marketing system were not addressed. In the case of the former consumer marketing outlets were not developed to take off the produce being marketed. Produce was dumped leading to considerable losses and resulting in the service not being sustained. Further, farmers returned to traditional channels because of such simple organisational matters as prompt payment and regularity of service. On the

technological side, improved harvesting, transportation, storage and processing did not result or accompany government policy and aggravated losses through produce perishing.

The potential to earn higher levels of income, either through higher prices or reductions in the cost of production, is a key instrument in causing change in small farmer development communities. Whether it was a new technology (increased plant population combined with fertilizer use) or improved organisational structures (collective marketing) farmers were active once the economic benefits were clear to them. The increased cultivation of blackeye peas after its price was decontrolled was one demonstration of this. Similarly, the number of farmers in the area now using improved planting material and fertilizers for their plantain crops has increased markedly. In the final analysis, the interrelationship of the organisational, technological and economic factors are crucial, but of critical importance is the fact that the organisational and technological changes will have to stand the test of improving economic welfare.

1.3.3 The Small Farmer Development Process

Small farmer development is a long term ongoing process which is influenced by and in turn must influence the social, political, technological, economic and international environment. Generally this environment has affected small farming sectors more than vice versa and balancing this causal relationship is essential to the small farmer development process. In other words, the uncertainty and instability



which are at the root of the problems of small farmer development are derived from the fact that small farmers do not influence the variables that impact on them.

The model detailed above suggested that the key to small farmer development is the organisation of the small farmer to influence the environment in which he exists. This influence must extend into technology institutions to get his production problems focused on; into economic institutions to destroy his characterization as price taker; into political institutions to remove policies that weaken the small farm sector.

This is obviously a long term ongoing process. It starts with institutions committed to small farmer development collaborating with farmers to cause positive change in the communities. This results in greater confidence by the community in the collaborative institutions and provides an atmosphere for the useful collection of information on the basis of which analysis of the problems and resources for their resolution can be carried out. The farming community should be involved integrally in this because a part of the successful transformation is for the community to do this assessment and programming for themselves and also for a correct assessment and interpretation of the results obtained.

While engaging the institutions and factors influencing the small farm sector in order to achieve the short-term aims of an improved technology or better prices the strengthening of the farmer group to operate independently in the future must simultaneously be pursued. This is obviously necessary because the situation will change and the struggle for a

new technology and higher prices must be able to be waged in the absence of the present organisations assisting the process. Further, the small farmer organisation must be able to participate meaningfully in the inter-institutional coordination process needed to realise these changes. While this process of farmer organisation strengthening is taking place it is assumed that technological and economic changes are taking place which are themselves making the small farmer community more economically powerful and independent. This process is crucial to the realization of the more long term structural changes being arrived at. Thus collaborating institutions assisting the small farmer development process have as their major goal the creation of an area agricultural development organisation whose existence comes to determine the relevance of the very collaborating institutions. In the final analysis, therefore, the dependency is reversed, the direction and support flows from the area agricultural development committee and it is they who define the role of the institution with whom they collaborate.

Part 3: Selected Materials reflecting the work of the
IICA/Government of Guyana Project

This section supports part 1 and part 2 of this document. It is a sample of the materials prepared under the project and indicates the type and level of the work. A separate document which includes all the training materials, on farm trial reports, diagnostic survey information, infrastructural work reports and the farmer organisation experience is to be published at the end of the IICA collaboration on small farm development in Guyana.

3.1 Materials indicating the on farm trials implemented

3.1.1 Report on Plantain Trials

Introduction

An important objective or product of the Small Farmer Development Project (SFDP) is the transfer of improved agricultural technologies to small farmers and agricultural field assistants. In Crabwood Creek (CWC), during the period 1983-1984, training and on-farm research activities focused mainly on Plantain Production, for several reasons:

1. Plantains are the main crop produced in Crabwood Creek and all food crop farmers produce some plantains. The average acreage of plantains per farm is about 0.5 ha, with 1.0 ha being the most typical size.
2. Improved drainage works during 1983/84 removed a major constraint to increased productivity, and made it possible that efforts to tackle agronomic constraints would significantly improve on production levels of plantain.
3. The yield of plantains growing in Crabwood Creek was low and declining.
4. Plantains have a high yield potential, as demonstrated in other producing areas.

Details of on-farm Trials

On-farm demonstration trials were established in each of the five canal areas in Crabwood Creek. In Table 1, a

Table 1

Comparison of the current and improved systems of Plantain Production

Practice	Current System	Improved System
1. Preparation of planting holes	Uneven size and variable depth, resulting in poor initial root development	Fixed dimensions and soil inversion.
2. Planting time	Following on-set of the rainy season.	Early (i.e. late dry or late rainy season).
3. Selection, preparation and treatment of planting materials	Unassorted, vigorous and weak types planted, resulting in prolonged, uneven harvest and difficulty in applying treatments efficiently.	Assorted into "bullheads" "swords" etc. Even harvest, ease in varying treatment according to planting material type and requirement.
4. Plant spacing and population	In rows, 6' x 6' to 12' x 12' 300 to 1200 plants/acre.	In rows, 8' x 8', wider for inter-cropping. 680 plants/acre.
5. Soil Conservation - mulching - fertilizing	Occasional, incidental, mainly straight (N and P) fertilisers, single dose per crop.	Regular, purposeful, complete NPK fertiliser, split-application 2 lbs/plant (total).
6. Field Sanitation - weed control - detrashing	Mainly manual, seldom	Manual and chemical, periodic and regular.
7. Crop Protection - insects - nematodes - bacteria	Haphazard and crisis-oriented, pests not identified, minimal implementation of control practices.	Routine and preventative, pests and control methods known and practices widely implemented.
8. Pruning	Very rare	Routine
9. De-budding	Random and seldom	Purposeful
10. Poling and propping	Occasional	Frequently, as required

brief comparison of the traditional versus the improved practices which characterized the trials implemented is shown. The first five plantain trials were designed to demonstrate and evaluate the improved practices which were presented at a seminar on Plantain Production (October, 1983). One plantain trial was mounted in each of the five canals. In Figure 1, a sketch plan of two on farm trials (in Canal Nos. 2 and 3) is shown. In Canal No. 2 the trial compared the yields of plantains produced by three different types of planting materials - "bullheads", "swords" and "peepers". In Canal No. 3, a trial compared "swords", "peepers" and "maidens" as planting materials, using fertiliser.

On the basis of the trials implemented, particularly focussing on the results and observations from the two trials in Canal No. 2 and Canal No. 3, considerably increased yield responses were observed, both within and between plots. In Table 2, results from these two trials are presented.

The overall yield from Canal No 2 was 8.8 tons/acre - 15 per cent more than the traditional yields in the area (7.5 tons per acre). This improvement is the effect of the improved cultural practices implemented on the plot. The specific practice most associated with this response was the use of "bullheads" as planting material. This type of planting material is not normally used by farmers in the project area and in this trial, an average bunch weight of 35.6 lbs, was obtained. This was 40 per cent better than when either "swords" or "peepers" are used as planting

Figure 1: Sketch plans of Two of the on-farm Plantain Trial Plots

Canal No. 2

(n)

P ₀	P ₁	P ₃
P ₃	P ₀	P ₁
P ₁ (14)	P ₃	P ₀

Unfertilized

Canal No. 3

(n)

P ₃	P ₁	P ₂
P ₂	P ₃	P ₁
P ₁ (18)	P ₂	P ₃

Fertilized

P₀ - Bullheads: Well developed corm and pseudo-stem from a plant that has already fruited.

P₁ - Swords: Young plants not yet having broad leaves.

P₂ - Maidens: Plants at vegetative stage - with broad leaves, not yet fruited.

P₃ - Peepers: young plants with shoots developed and corm not well developed.

(n) - represents number of plants in each section.

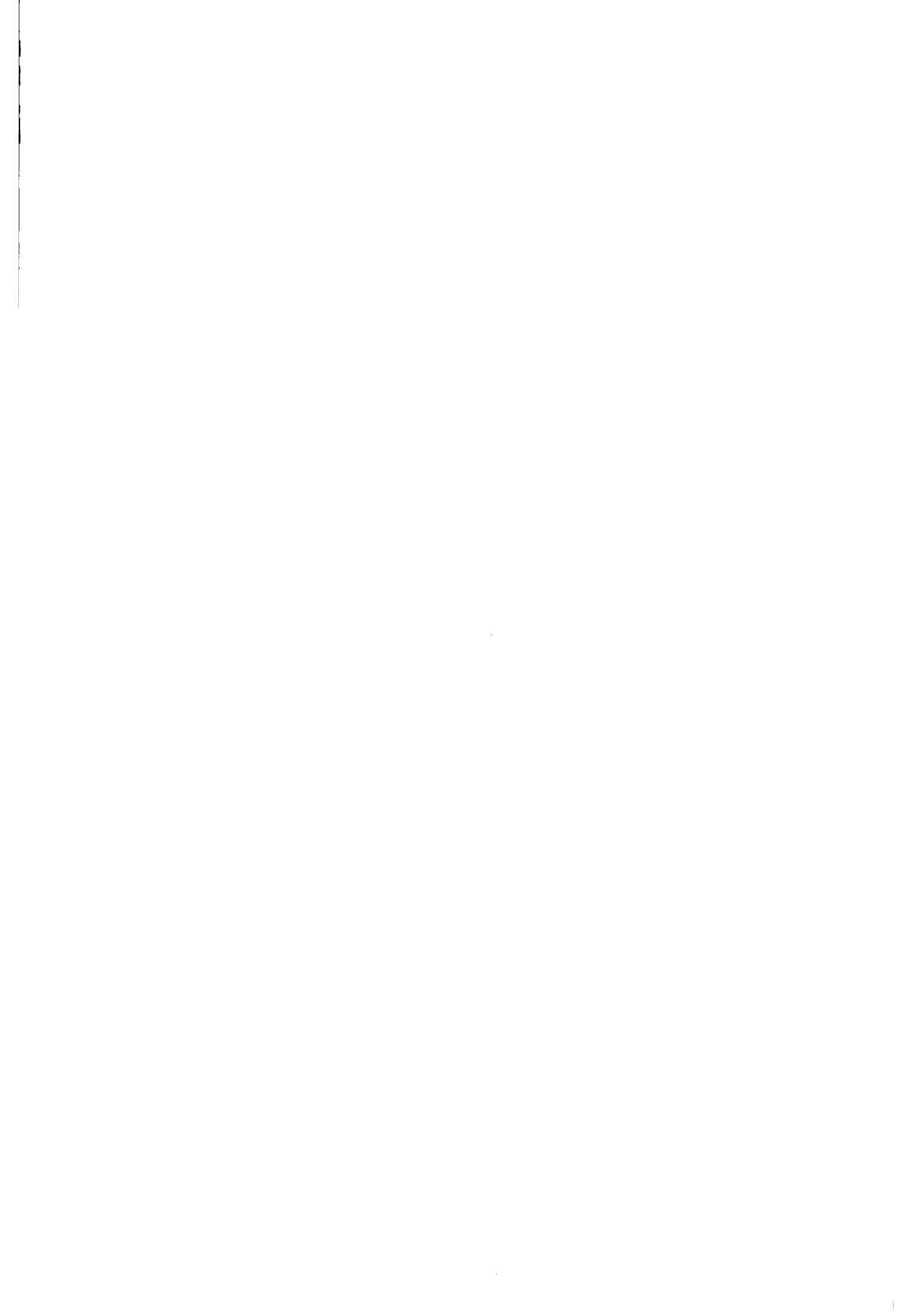


Table 2

Results of two on-farm trials in CWC (1983/85)

Trial Location	Plot No. 48 Canal No. 2	Plot No.77 Canal No. 3
Fertiliser Treatment	Quantity applied (lbs/plant)	
15:15:15	0	2.0
Planting Material Type	Mean Bunch weight (lbs)	
Bullheads	35.6	-
Swords	25.6	38.5
Maidens	-	31.4
Peepers	25.2	39.2
Average	28.8	36.4
	Computed yields (tons/acre)	
Bullheads	10.8	-
Swords	7.8	11.7
Maidens	-	9.5
Peppers	7.7	11.9
Average	8.8	11.0

materials. If bullheads alone were planted, then one acre would yield more than 10.5 tons of plantains.

Within the Canal No. 3 plot, "sword" suckers and "peepers" produced the heaviest bunches and the overall plot yield was 11 tons/acre or 47 per cent higher than the yields obtained with traditional practices. This difference is due mainly to the effects of fertiliser usage, in addition to the cumulative effect of the other improved cultural practices. The plant population on this plot, consisted of an equal number of the three commonly used types of planting material, and hence, planting material type did not contribute to the observed difference. as it did in Canal No. 2. The best performing planting material types, in the Canal No. 3 trial - "swords" and "peepers" - would produce more than 11 tons/acre, which is about 1.5 tons/acre more than the yield of the worst performing type - "maidens" - in the same trial.

In general, the results from this first cycle of on farm trials confirm the potential of the alternative, improved practices for increasing yields of plantain. Specifically, "bullheads" proved to be a distinctly superior type of planting material. Indications are also given, that fertiliser application is associated with increases in yield for the plant crop. In addition to increased yields, average bunch weights, plant heights and pseudostem girths were recorded as higher than under the traditional system. These results were obtained despite the rainfall during this



planting season being 28 per cent less than the 1970-1985 average. Hence the influence of this improved package of practices on the ratoon crop is expected to be even more significant. More effort is also to be made to isolate the effects of the unmeasured influences on the results (edaphic factors and micro-environmental reactions).

- 3.1.2. Picture of (a) plantain trial just after establishment and
(b) plantain trial being used for a farmers field day.



a) Plantain Trial just after establishment



b) Plantain trial being used for a farmers field day.

3.1.3 Report on Sweet Potato Trials

The critical production problem facing farmers in Crabwood Creek at the time of the project intervention was low sweet potato yields due mainly to damage of output by soil pests. The main offender was identified as the sweet potato weevil. In order to address this problem an on-farm trial was implemented. The technology package introduced and the results of the trial are reported below.

Details of On-Farm Trials

The traditional cultivation practices characterizing the production of sweet potato did not include the utilization of limestone, fertilizer or chemicals for the control of pests. Under these conditions yields averaged 9000 lbs per acre. The improved technological package introduced utilized the vines and terminal cuttings (8-12") from the harvested crop as is done under the traditional system. Under the improved system these were now treated with a triazophos solution in order to control the sweet weevil.

The slips were tied into bundles of 20 each and dipped in a 2% triazophos emulsion (10 fl. ozs of 40% E.C. per gallon of water). Slips were kept in the shade one day before planting. After planting the vines were sprayed with 120g triazophos or 11 fl. ozs of 40% E.C. per acre.

The fertilizer applied was as follows: Ammonium Sulphate (141 lbs/acre), Triple Superphosphate (141 lbs/acre) and Muriate of potash (141 lbs/acre). One half of the amount of sulphate of ammonia, two thirds of the muriate of potash

and the full amount of the triple superphosphate was applied three days prior to planting and incorporated in the soil. The remainder of the fertilizer was mixed together and thrown around the roots of plants four weeks later. The complete cultivation package being demonstrated was circulated to farmers in March, 1982. A schematic of the plot layout is shown in Figure 1.

The yields of the trial plots are summarized in Table 1. The results indicated conclusively that the improved technology package as a whole was superior to the traditional system, increasing yields by approximately 40% over traditional yields to 12,594 lbs per acre. However, only the fertilizer treatment as opposed to the limestone or triazophos consistently demonstrated its importance to increasing sweet potato yields.



Figure 1: Plot Layout showing Improved Cultivation Practices on Crabwood

Creek Sweet Potato Trial

L ₀	L ₀	L ₁	L ₁	L ₁	L ₀	L ₀	L ₂	L ₂	L ₂	L ₁	L ₁	L ₂	L ₂	L ₂
F ₀	F ₀	F ₀	F ₁	F ₀	F ₀	F ₀	F ₀	F ₀	F ₁	F ₁	F ₁	F ₁	F ₀	F ₁
T ₀	T ₀	T ₀	T ₁	T ₁	T ₀	T ₁	T ₀	T ₁	T ₁	T ₀	T ₁	T ₁	T ₁	T ₀
14	15	5	16	18	24	10	21	25	26	4	6	8	7	36

(4)

(3)

L ₀	L ₀	L ₁	L ₁	L ₁	L ₀	L ₀	L ₂	L ₂	L ₂	L ₁	L ₁	L ₂	L ₂	L ₂
F ₀	F ₀	F ₁	F ₀	F ₀	F ₀	F ₀	F ₀	F ₀	F ₁	F ₁	F ₁	F ₀	F ₁	F ₀
T ₀	T ₀	T ₀	T ₁	T ₁	T ₀	T ₁	T ₀	T ₁	T ₀	T ₁	T ₁	T ₀	T ₁	T ₀
28	3	13	19	17	30	23	35	34	27	1	20	32	31	33

(1)

(2)

L₀ - No Lime F₀ - No Fertilizer T₀ - No Traizophos
 L₁ - Level 1 Lime (500 lbs/Acre) F₁ - Fertilizer* T₁ - Traizophos
 L₂ - Level 2 Lime (700 lbs/Acre)

*See text for details

Table 1

Sweet Potato Trial Results*

Plot	lbs/Acre	Plot	lbs/Acre
L ₀ F ₀ T ₀	13478	L ₀ F ₁ T ₀	16848
L ₀ F ₀ T ₁	10140	L ₀ F ₁ F ₁	11526
L ₁ F ₀ T ₀	12960	L ₁ F ₁ T ₀	10598
L ₁ F ₀ T ₁	12096	L ₁ F ₁ T ₁	12384
L ₂ F ₀ T ₀	6940	L ₂ F ₁ F ₀	12749
L ₂ F ₀ T ₁	11531	L ₂ F ₁ F ₁	11462

*See Figure 1 for plot description details



3.2 Materials prepared for Farmer Training Sessions

3.2.1 Preventing post harvest losses in perishable crops

What are post harvest losses?

Post harvest losses are the losses in crop value resulting from damage to crops due to poor handling, packaging, transporting and storing of the crop from the time it is harvested to the time it is consumed. These losses result in produce having poor quality, lower weight and lower nutritional value.

What causes post harvest losses?

There are many causes of post harvest losses. These losses can occur through:

- Mechanical damage by bruising, cutting, excessive peeling or trimming.
- Too much or a lack of heat or cold.
- Poor harvesting, packaging and handling skills.
- Unsuitable containers for transporting and handling perishables.
- Improper or bad transportation to the market.
- Inadequate or poor storage facilities.
- Incomplete drying of produce.
- Rats, mice, birds etc. eat produce and thereby damage it.
- Damage by fungi and bacteria.
- Accidental or deliberate contact with pesticides, insecticides, fertilizers etc.
- Natural chemical reactions in stored products resulting in loss of flavour, colour, nutritional



value and softening.

How to prevent post harvest losses

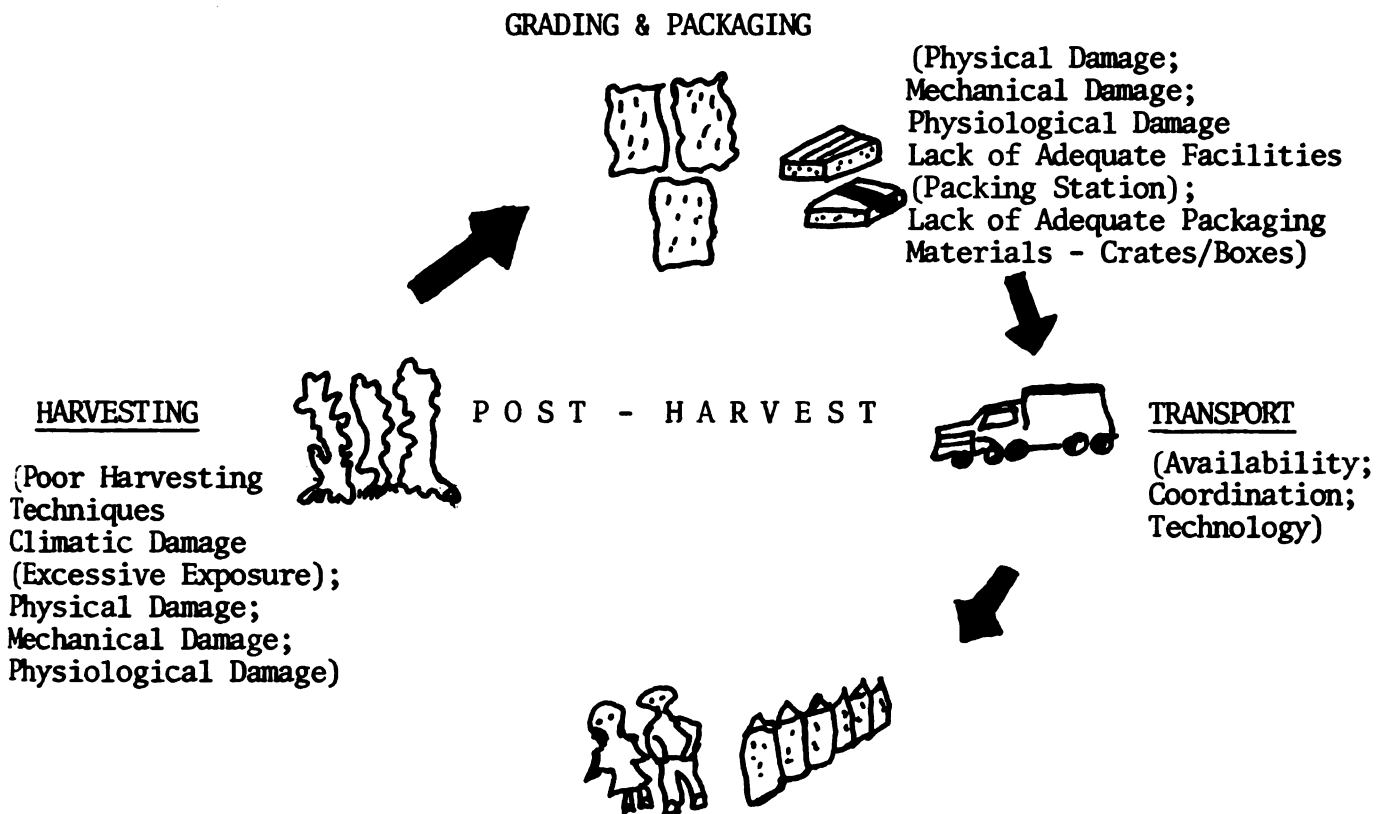
It is important to prevent or reduce, as much as possible, post harvest losses since any significant losses during this period mean financial losses to you. There are many ways that you can prevent post harvest losses:

- Keep farm produce out of the direct rays of the sun and away from heat.
- Keep produce cool (by wetting, ventilation or refrigeration).
- Harvest at the correct time - not too early or too late.
- Ensure storage area and containers are clean.
- Remove diseased and damaged produce from storage area.
- Control/eliminate pests, rats, etc. from storage area.

How to avoid post harvest losses while transporting your produce

- Use wooden or cardboard crates to transport fruits and vegetables, making sure they are properly ventilated.
- Never overload the transport vehicles.
- Do not pack produce at different stages of maturity in the same container.
- Drive with care, avoiding rough roads where possible.
- Ensure transport vehicles are properly ventilated to allow a free flow of air through produce.

A DEMONSTRATION OF POST HARVEST LOSSES AT DIFFERENT STAGES



3.2.2 An Introduction to Farm Management for Vegetable Farmers

Introduction

Four factors of production or four major resources affecting production are generally identified. These are land, labour, capital and management. The particular factor being focused on is management and essentially from the point of view of the farmer as a manager.

What is farm management?

Farm management refers to the mental energy the farmer uses in his production system. The physical energy represents the actual work (manual labour) the farmer does on his plot. Mental energy is the thinking, the organisation, the strategy, the seeking and utilization of information, the evaluation and analysis of information. Mental energy is used in making the decisions governing all the variables which affect the success of the farm. Mental energy is utilized in the review of outcomes, the making of plans to deal with problems. Three critical functions summarize the farm management process: seeking and utilizing information, evaluating and analyzing alternatives and making decisions. Therefore, farm management involves the coordination of several areas of knowledge and experience so as to plan, evaluate and implement actions to maximize the returns to the farm household.

What are some of these variables which affect the success of the farm?

Farming is a complex and risky business. The whole host of factors affecting agricultural production can be grouped as follows:

<u>Natural</u>	<u>Human</u>	<u>Capital</u>	<u>Internal</u>	<u>External</u>
Land	Family Labour	Operating Capital	Labour Efficiency	Prices
Water				Land Reform
Climate	Contracted Labour	Fixed Capital	Machinery & Equipment Efficiency	Markets
Biological Factors			Marketing Methods	Roads
Pests:				Credit
Diseases				Technical Assistance
Weeds				Research
				Legislation

Let us look briefly at one of these factors affecting production:

Land

The farmer must know his local soil. Particular soil types are better suited to specific crops. Difference in soil texture, structure, fertility, permeability, etc. determine agricultural applications. One important characteristic between different soils is the difference in soil acidity (pH level). The question the farmer faces as a manager is: What is the relative tolerance of vegetable crops to soil acidity or how to

reduce the acidity of his soil. He gets the following answer:

A breakdown of crops and their potential tolerance to acid conditions and he is also told that he can change the level of acidity in the soil by the addition of lime to it.

<u>Slightly tolerant</u>	<u>Moderately tolerant</u>	<u>Very tolerant</u>
(pH 6.8 - 6.0) (weakly acid)	(pH 6.8 - 5.5) (weakly acid - acid)	(pH 6.8 - 5.0) (acid - strongly acid)
Cabbage	beans	sweet potato
celery	corn	watermelon
lettuce	cucumber	sorrel
muskmelon	eggplant	shallot
onion	tomato	

The farmer now has information to work with; he must find out for himself, working with varieties available, etc. to see which of these crops is best for him to grow, either leaving the soil acidity as it is or changing it through the addition of lime.

When all the influences on the agricultural enterprise are pulled together, farm management problems can be summarized into five broad decisions that have to be taken.

What are the critical decisions the farmer has to make?

(1) Decisions with regard to what to produce

The farmer has to decide which crop or crops. This will be determined largely by matching his objectives with his resources. Is he producing food for himself?

Is he growing a crop to obtain income to make purchases?

He decides on the alternatives allowed by his resources and generally works towards producing the most

profitable combination of outputs (crops, crop/
livestock mix).

(2) Decisions with regard to how much to produce

Several factors will have to be evaluated to decide how much to produce. For instance, the size of the land the farmer has available to him, the quantities of other inputs available to him (only grow half of an acre of a certain crop if it absolutely must have a particular input and you can only get enough of this input for half an acre), the amount and kind of labour available and the time that it is available. The market for the products will also determine how much to produce.

(3) Decisions with regard to what resources to use and how to combine them

The labour and equipment (tools, machines, etc.) available to the farmer can be used in many different ways. For instance, the farmer can plant by hand or maybe by use of a small planter. Similarly the farmer faces choices with his weeding, fertilizing and harvesting decisions. The good manager does not throw too much fertilizer, or use a pesticide (repeatedly) that has no effect. The timing of operations is critical in farming (treating diseases before too much damage, removing weeds before they have grown too large). All the farm practices are evaluated under this question to compare their costs and benefits and thereby make a decision.

(4) Decisions with regard to when and where to sell and buy
Farmers can do much better if they purchase and sell more skillfully. Information is important for this to take place. When to sell - farmers should try to produce and sell produce at a time when prices for their products are high. Choosing the market in which to sell your products is also important. Obviously additional concerns such as time, transportation, access to the market, would also come into play. Similar considerations surround efficient buying.

(5) Decisions with regard to financing
The problems of financing are not easy ones. Many farmers in Guyana say "My problem is not money, my problems is lack of inputs". This is true in many cases but in equally as many, if farmers utilized credit available they could develop their farms and their families a lot faster. There is a fear about credit - not only farmers say "I don't want to own nobody"; many persons working in most occupations think like this. Farmers must be interested in credit because it will result in their income being greater over a period of time. Simply - credit makes possible greater productivity from labour and assists farmers in generating much larger incomes than their limited resources may allow.

We have said a lot about different kinds of decisions that the farm manager has to make. This 'decision-making' is the heart of the farm management process. We must look at steps which

make up this decision-making process. Essentially, five steps are identified:

- i) Identifying the problem (observations, ideas)
- ii) Identifying feasible alternatives to problem (Search)
- iii) Deciding on the most desirable alternative
(Evaluation & analysis)
- iv) Implementing the desired alternative (Action)
- v) Acceptance of responsibility for outcome.

Identifying the problem

The farmer cannot increase his production and his farm income if he does not recognise his problems. Very often there needs to be some amount of knowledge before the farmer can identify the problem or even think of looking for something which may be causing his income to be lower than it need be. For instance, plants may be growing much slower than is expected under normal conditions. If the farmer is not aware of how the particular plant should progress he will not be looking for what might be causing slow growth and hence could miss the chance of identifying the problem. Similarly, you can be using a piece of equipment that appears to be consuming a low amount of fuel but is in fact consuming much more than it would if it were working efficiently. Unless you know something about fuel consumption you would not be looking for the causes. Let us now assume you recognise a problem - very broadly, your plants are dying. The identification stage in this case involves observing the root system and the shoot system, noting the level of rainfall, noting the age of the plant. Once you have this kind of information you are ready to go on to the next stage.

Identifying feasible alternatives to the problem

At this stage the farmer does several things to find a solution. You can check information given to you by friends, field assistants, a book on agriculture you may have. You discuss the problem with fellow farmers, field assistants, etc. You use your experience, past records if you have them. A number of ideas, suggestions, recommend themselves. You then move on to the next stage.

Deciding on the most desirable alternative

This is an important step and critical to how successful a farmer you will be because you have to make a decision. At this stage you evaluate the alternatives you have and you select the most desirable one. Very often you have little time to make a decision and the decision involves considerable expense with uncertain returns. You can make calculations and compare the different alternatives and decide which one generates the highest level of income. Very importantly, you use your experience to evaluate the alternatives and choose which is the best one for you. No one other than the farmer should make the decision; the farmer's frame of reference is crucial to deciding which alternative is the desired one.

Implementing the desired alternative

This is the action stage. This is where many farmers fall down. Lack of confidence (fear) may cause you to wait or to want to think some more. Very often a good decision not implemented is an opportunity lost. The different aspects of the desired alternative should be thought out clearly,

especially from a squencing and complementarity point of view.

Acceptance of responsibility for outcome

If you don't accept responsibility for the action, you will not make the adjustments necessary for the action to work. Evaluation of the results of the action is critical. This can be considered the final step of the decision-making or management process once the process implemented has functioned properly. It is important that the farmer makes a record of the actions and the results. If it worked, so as to repeat it. If it did not work, so as to ensure that he does not repeat it. If it did not work the manager may have to return to the first stage of the management process again.

Conclusion

Two farmers may have the same resources; we can imagine that the larger environment affects them similarly and they may indicate they use the same methods. Yet, we know they will not be equally successful. The difference will often be attributed to their managerial ability. The successful farm manager is always thinking about improving his farm operation. He is continually searching for new and better ways to farm. Once the farmer has formed an opinion on the nature of a particular problem affecting his farm he must do one of two things:

- 1) act if he is confident he knows how to solve the particular problem;
- 2) seek advice, weigh it and then act upon the advice.



This managerial ability has two main characteristics - the farmer's efficiency and the farmer's capacity. His efficiency is based on his ability to generate the greatest return from the set of resources he is working with. His capacity is his ability to manage efficiently increasing amounts of resources. In these sessions we hope to increase the efficiency and capacity of farmers.

3.3 Materials prepared and utilized on notice boards built for technology transfer and information

3.3.1 Pesticide Safety for Small Farmers

Pesticides are useful in keeping crops and farm animals healthy. Pesticides kill insects, weeds and plant diseases. When not carefully used, however, pesticides can hurt pets, wildlife, crops and even you and your family.

These guidelines will help you to use pesticides safely.

BE SURE TO:

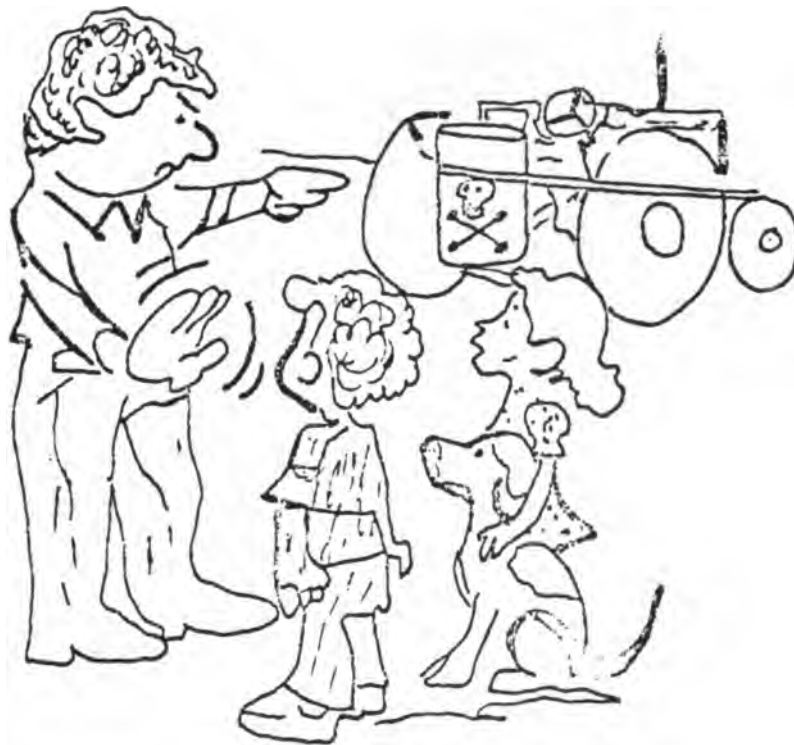
- Label all pesticides and store safely.
- Wear protective clothing while spraying or if you are in a field that is being sprayed.
- Wash thoroughly and change into clean clothes after spraying or working in a sprayed field.
- Wash the clothes you wore while spraying separately. Do not wash them with the rest of the family's wash.
- Wash your hands thoroughly after spraying especially before eating or smoking.
- Wash all fruits and vegetables from the field before using them.



- Store pesticides away from sleeping quarters.
- Keep windows closed when nearby fields are being sprayed.

CHILDREN AND PESTICIDES:

- Do not leave pesticide bags, containers within the reach of children. Store or dispose of them properly. Even if empty, the container is dangerous.
- Keep children, pets and playthings away from chemical sprays, chemicals, pesticide equipment and pesticide storage areas.



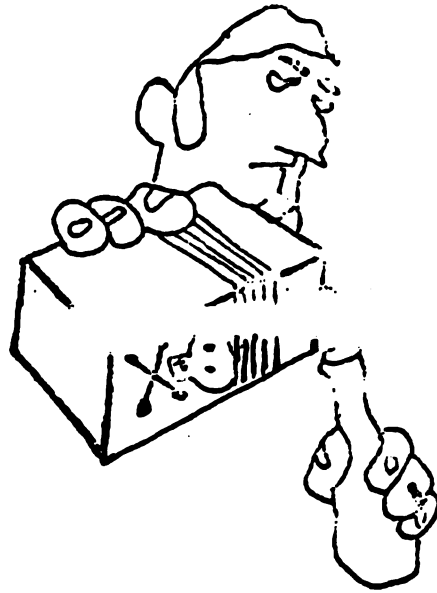
WHILE IN THE FIELD:

- Do not keep lunch or beverages in a sprayed field.
- Do not eat or smoke in a sprayed field.



NEVER:

- Never burn pesticide containers. The fumes may be dangerous.
- Never store drinking water in old pesticide containers.
- Never hang clothes out where spray can get onto the,
- Never put pesticides in empty sweet drink bottles or other food containers.



IF:

- If you feel sick, find out the name of the pesticide and get a doctor right away.
Pesticide poisoning can feel like many other types of sickness - See your doctor.



- Handle produce with extreme care - when loading and off-loading.

3.3.2 Farm Credit

A. WHY BORROW;

Borrowing will allow you to:

- (1) Develop your farm at a faster rate;
- (2) Increase your level of profit; and
- (3) Enjoy a higher standard of living.

B. WHERE YOU CAN OBTAIN LOANS:

Loans can be obtained at the Guyana Co-operative Agricultural and Industrial Bank - GAIBANK.

C. WHAT CROPS ARE LOANS GIVEN FOR:

- | | |
|----------------------|----------------------|
| - Plantains, Bananas | - Coffee |
| - Vegetables | - Cashew |
| - Peanuts | - Oil Palm |
| - Ground Provisions | - Rice |
| - Pineapples | - Sugar cane |
| - Coconut | - Other arable crops |
| - Citrus | - Other tree crops |

D. LOANS MAY BE OBTAINED FOR:

- (1) Clearing Bush
- (2) Land Preparation
- (3) Building Farm Houses
- (4) Purchasing farm inputs (planting materials, weedicides, insecticides, fertilizers), small equipment (spray cans, water pumps), outboard motors, vehicles.
- (5) Fencing

- (6) Herd or flock improvement (to purchase animals to start a project or strengthen the herd) and pasture improvement.
- (7) Financing charcoal enterprises, shingle making and production of poles and posts from Wallaba and other woods.
- (8) Financing all types of fishing enterprises (purchasing boats, seines, tackle, provision of cold storage and other facilities associated with handling and disposal of fish).
- (9) Industrial projects.

E. REQUIREMENTS FOR BORROWING:

- (1) You must be either a farmer, fisherman, timberman or other businessman.
- (2) Your project must be viable - be able to make profits for you and repay money borrowed plus interest.
- (3) You must have a good character, capable of using the loan effectively and honestly.

F. HOW YOU CAN OBTAIN LOANS:

For you to acquire a loan there are a few steps to follow:

A) Loan Application:

You need to make an application directly to the GAIBANK Head Office in Georgetown or at one of the Regional Offices or even to officers on field visits. An application is complete when an application form is filled out. Speak to your agricultural field assistant/agricultural officer and he will assist you.



B) Loan Appraisal:

After an application is taken, an appraisal is done to ensure that certain requirements of the bank are met. An appraisal consists of a visit to the area where the operations are to take place, and an evaluation of the formal application.

C) Loan Supervision:

When the bank starts paying out the loan, the bank's officers will pay visits to your farm to make sure that the bank's money is properly spent.

G. TYPES OF LOAN:

Loans may be put into three groups depending on duration for payment:

- Short term: For a period of not more than two (2) years.
- Medium term: For a period of two (2) to five (5) years.
- Long term: For a period of more than five (5) years.

H. APPLICATION FEE:

You are required to pay an application fee of five dollars (\$5.00) when making the application.

I. APPRAISAL FEE:

An appraisal fee is also charged. The amount is determined by the size of the loan. This fee is charged so as to cover part of the expenses in the appraisal of the project

J. INTEREST RATES

Interest rates charged at present are:

A) For agricultural projects:

- 12% per annum

B) For industrial projects:

- Large projects: 14% per annum

- Small projects: 12% per annum

3.3.3. Picture of Notice Board at Crabwood Creek



3.4 Materials reflecting Infrastructural Work

3.4.1 Final Report on Emergency Assistance Grant to Crabwood Creek Farmers

1. Introduction

In May 1983, the farming area referred to as the Crabwood Creek new Scheme, with some 4,219 acres empoldered, suffered a great setback when the entire area was flooded because of heavy rainfall. The Scheme was designed to accommodate approximately six hundred (600) low-income Farm Households who are dependent solely on the crops produced in this area for their livelihood. At the time of the flood, some 2,065 acres were under cultivation, broken down as follows:-

Plantains	900 acres
Bananas	400 acres
Eddoes	60 acres
Cassava	500 acres
Sweet Potatoes	45 acres
Legumes	40 acres
Vegetables	90 acres
Papaws	30 acres
	<hr/>
	2,065 acres
	<hr/>

The Inter American Institute for Co-operation on Agriculture (I.I.C.A.), an organisation in Guyana designed to assist the Government with its Agricultural programme, was working in the area prior to the flood.

The Crabwood Creek Agricultural Development Committee addressed the problems of the flood by preparing and submitting a paper for financial assistance to InterAmerican Development

Bank (IDB). The formal request was prepared by I.I.C.A. and was submitted to IDB by the Government of Guyana. On the Government of Guyana's request for emergency assistance, I.D.B. made available a grant for US\$100,000.00.

The body referred to as the Crabwood Creek Agricultural Development Committee, comprised of representation from the Crabwood Creek Local Authority, Regional Administration, Ministry of Agriculture, the Agriculture Field Assistant, five (5) farmers and I.I.C.A. This committee was charged with responsibility for the implementation of the project. This matter was addressed at the weekly meetings of this Committee.

Achievements under the Project

Infrastructural Works:

The following works were successfully done by the use of three (3) private Draglines, one (1) State Bulldozer and one (1) State Dragline. Work began in November 1983 and completed in May 1984 at a cost of G\$390,000.00.

- (a) An empoldering dam was built to keep out water from the flooded backlands which was responsible for the past three floods which damaged crops. The total length of the dam is 37,200 feet and is referred to as the Crown Dam and South Dam.
- (b) Desilting of five (5) Drainage Canals, 82,224 feet.
- (c) Levelling and Grading of five (5) dams - 297,624 feet.
- (d) Erection of five (5) Box Kokers 4 x 4 x 30 feet for five (5) Irrigation Canals.

Infrastructure work done would enable 600 farmers to

safely cultivate 4,000 acres of mixed crops mainly ground provision and 3,400 acres of rice.

Provision of Agricultural Inputs

The Grant from I.D.B. of US\$100,000.00 was used for the importation of essential agricultural inputs as was set down in the Programme. The items listed below were distributed.

Equipment

Outboard Motor Engines	-	60 Units
CP3 Spray Cans	-	120 Units
Water Pumps	-	20 Units

Chemicals

Fertilizers	-	(a) 15: 15: 15	-	20 tons
		(b) Triple Super Phosphate	-	20 tons
		(c) Murate of Potash	-	20 tons
Pesticides	(a)	Weedicides	-	1200 litres
	(b)	Insecticides	-	1850 litres

The fertilizers and pesticides were distributed to farmers on request, and on the recommendation of the Agricultural Field Assistant so as to avoid maldistribution of the items.

With respect to the allocation of equipment, a system was devised to take care of the distribution, since the request for the equipment far exceeded the amount available. The criteria used were as follows:

- 1) No single farmer or farm family would receive more than one piece of equipment (Spray can, Water pump, Outboard engine).
- 2) Farmers who suffered losses in the flood would be favoured.
- 3) Farmers who gave self-help would be favoured.
- 4) Farmers who had a particular piece of equipment already, would not be given a second one.
- 5) Farmers must pay up their rates and taxes.
- 6) Farmers who completed recultivation of plots would be favoured.
- 7) Farmers with vegetable crops should be given particular consideration for water pumps and spray cans.

Five (5) Farmers' Representatives elected by the Farmers themselves served on a Committee appointed to allocate the equipment/inputs. The Committee had five other Members - the Regional Vice-Chairman, the Local Authority Chairman, the Senior Regional Agricultural Officer, the area Field Assistant and an I.I.C.A. Representative.

On November 13, 1984, this Committee had its last meeting at which the final allocations were made.

Area Brought Under Cultivation After Development Works

During development of the Area, farmers started to re-cultivate the area. At the end of 1984, the following crops were cultivated and in production:

Plantains	-	1,000 acres
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Bananas	-	600 acres
Corn	-	30 acres
Eddoes	-	60 acres
Cassava (Sweet)	-	500 acres
Legumes	-	50 acres
Other mixed crops	-	300 acres
		<hr/>
		2,540 acres
		<hr/>

Anticipated Production

Crops replanted after flood and anticipated production.

Plantains	- 1,000 acres at 15,000 lbs per acre	= 15,000,000 lbs
Bananas	- 600 acres at 10,500 lbs per acre	= 6,300,000 lbs
Eddoes	- 60 acres at 10,000 lbs per acre	= 600,000 lbs
Cassava	- 500 acres at 8,000 lbs per acre	= 4,000,000 lbs
Legumes	- 50 acres at 500 lbs per acre	= 25,000 lbs
Papaw	- 30 acres at 10,000 lbs per acre	= 300,000 lbs
Sweet potatoes	- 50 acres at 10,000 lbs per acre	= 500,000 lbs

Summary and conclusions

The Inter-American Development Bank's Grant has made a tremendous contribution to the agricultural rehabilitation of the Crabwood Creek Area. Its impact was so considerable because it was implemented under an I.I.C.A./Ministry of Agriculture Project which complemented the provision of material assistance, the introduction of improved agricultural technologies, the provision of institutional support services, and assistance to farmer's organization.

The farmers of the area, Regional Ministry and the Crabwood Creek Local Authority participated at all levels in the implementation of all the activities of the Project. The general model that has evolved out of this Project must be recognised and should be utilized in other areas where and when similar problems arise.



a) Farmer standing in drainage canal before rehabilitation



b) Farmers and the agricultural officer demonstrate the height of the dam after the drainage canal is cleared



c) View of a drainage canal after the infrastructural works

3.5 Materials reflecting Farmer Organization Development

3.5.1 Copy of letter from Crabwood Creek Moleson Agricultural
Development Committee to CWC Local Authority

Crabwood Creek-Moleson Agriculture
Development Committee
Crabwood Creek
Corentyne, Berbice.

1985-01-05

To: The Local Authority: Crabwood Creek-Moleson Village District
From: Crabwood Creek-Moleson Agricultural Development Committee
Re: Matters for Your Consideration arising out of our Monthly
Statutory Meeting on 1984-12-18.

Thank you for letter dated 1984-12-17 in reply to our
letter dated 1984-11-28. It was read and discussed at our last
statutory meeting. Our Committee was pleased and appreciated the
Local Authority's reponse to it.

Our Committee is asking that you reconsider the following
matters and reply to each specifically:

1. Bell Cry: A Counter-Proposal: That a Round Robin be
sent out by the Local Authority to Representatives from
the five sideline canals informing them of our Monthly
Statutory Meeting.
2. Ranger: That no information was received in connection
with the Ranger's visit to the Crown Dam through each
sideline canal at least once per month.
3. Representatives Sitting in the Local Authority's Works
Committee: That farmers be allowed to elect their two
Representatives to sit in the Local Authority's Works
Committee.

4. Date for our Next Meeting: That the date for our next monthly statutory meeting will be January 29, 1985. We look forward to your reply on the above matters prior to our next meeting scheduled for January 29, 1985.

Yours co-operatively,

H. Dyal
(Secretary)



3.5.2 Local Authority reply to letter under 3.5.1

Local Authority,
Crabwood Creek-Moleson,
Corentyne
Berbice.
1985-01-08

The Secretary
Crabwood Creek-Moleson Agriculture
Development Committee.

Dear Comrade,

In reply to your letter dated 85-01-05, I wish to inform you of the following:-

1. Bell Cry

The Council still thinks that the Agriculture Development Committee should be responsible for informing farmers of their meeting.

2. RANGER

The Local Authority's Ranger will visit backdam at convenient times as was requested once per month.

3. Representatives sitting at the Local Authority's and Works' Committee meetings

The Representatives sitting at the Local Authority's Statutory meetings are farmers representatives and members of the Agriculture Development Committee, as well as the Local Authority's Works' Committee. The Council see them as fit and proper persons to represent the Agriculture Development Committee.

The Village Council has also decided to request that a written report from the Agriculture Development Committee be forwarded to the Council's Statutory meetings that are held



on the first Monday of every month. The report should state the current developments and activities of the Crabwood Creek-Moleson Development Committee.

Thanking you.

Yours co-operatively,





