

EXECUTIVE SUMMARY

The mission of the National Agricultural Research Institute (NARI) is to advise on and develop technologies for sustained agricultural development. Essentially, the goal of NARI is to increase productivity and improve the quality of crops and livestock for national use and for export. The Institute has direct responsibility for the improvement of technology of the non-traditional crops and livestock sectors.

During 2000, the Institute operated and maintained several locations. These were the Headquarters, Mon Repos, Intermediate Savannahs Field Research Unit, Ebini, the Horticultural Station, Timehri, the Kairuni Crop Station and Plant Nurseries at Benab, Fort Wellington, Mon Repos, Pouderoyen, Charity, Bartica and Hosororo.

In order to fulfill its mandate, NARI continued its work in six programme areas. Five of these programmes addressed research and development of Fruit and Perennial Crops, Roots, Tuber and Other Food Crops, Vegetable Crops, Livestock and Soils and the Environment. The other programme, Agricultural Services, provided services to farmers, agencies in the agricultural sector and to NARI's research effort. Additionally, there were collaborative projects, with other sector agencies, in organic cocoa production and peanut production. In the area of technology transfer, a number of training sessions were conducted for farmers, extension officers, students, etc. NARI hosted the World Food Day Exhibition and participated in a number of national events. It was also involved in the creation of an Agricultural Information Network for Guyana.

Staff members benefited from training both locally and overseas. Staff at all levels participated in these activities.

Capital projects were completed at the cost of G\$10M. Cash inflows for the year 2000 were \$227,784,548 and cash outflows were \$248,484,605.

This report presents the main activities of the Institute and major results for the year 2000.

Fruit and Perennial Crops Programme

For this programme, projects were carried out in the areas of genebank management and propagation, crop improvement, ornamentals, mushroom, post-harvest studies and plant nurseries.

In genebank management, emphasis was placed on avocado, citrus, cashew, pineapple and cherry. A new virus-free citrus orchard and a mixed fruit orchard were established at Kairuni. Foundational plots of rootstock and scion material for citrus, passion fruit, West Indian cherry, sour-sop and mango were established at Kairuni and Mon Repos. Evaluation studies on imported varieties of fruits such as passion fruit, sour-sop, pineapple, avocado and mango were also initiated at Mon Repos, Kairuni and farmer's plots.

In support of agricultural diversification, research continued on the production of edible mushrooms. The first batch of edible mushroom was successfully produced. This activity has great potential for both domestic and foreign markets.

The production of ornamentals was an on-going activity at Timehri and Mon Repos. This was extended to other nurseries. Ornamental production has good potential for the programme.

Plant nurseries at Charity and Pouderoyen were rehabilitated and expanded under the Poor Rural Communities Support Services Programme (PRCSSP). All the nurseries continued to produce quality planting materials for the farming community.

Post-harvest studies were also an integral part of the programme activities. Successful studies were conducted on the 'internal browning' condition of the Montserrat pineapple.

Root, Tuber and Other Food Crops Programme

This programme conducted research projects in genetic improvement, crop management and management of pests and diseases.

Two accessions were added to the germplasm collection in 2000. The cassava collection was maintained at Mon Repos while sweet potato accessions were maintained at Mon Repos, Fort Wellington and Kuru Kururu. A sweet potato demonstration plot was planted to show the attributes of one sweet potato cultivar (Viola) which was selected for release. Efforts continued to identify plantain plants that showed resistance/tolerance to moko disease. During 2000, plants that showed tolerance to moko disease were selected from the trials being conducted on a farmer's plot at St. Lawrence. This material is being multiplied for further testing to ascertain whether the tolerance persists.

This programme began trials to demonstrate improved production practices for peanut. Trials were conducted at three sites – Rupununi, Soesdyke/Linden Highway and Ebini. The trials in Rupununi were collaborative projects with the Ministry of Fisheries, Crops and Livestock, NARI, IICA, University of Florida and “New” GMC.

Vegetable Crops Programme

Work in this programme entailed improving the productivity, promoting and enhancing the quality of vegetables as well as promoting sustainable systems of seed production to ensure quality seed of locally adapted varieties reach farmers.

Varietal evaluations of ochro and sweet pepper were conducted. Recommended varieties are now available to farmers. Fertiliser trials on tomato and boulanger were also done. Management practices such as the use of mulch on vegetable production were also initiated.

Seeds were produced/collected for several crops – tomato, bora, boulanger, ochro, hot pepper and local sweet pepper. These are now available to the farming community. A “new” accession of bora (yard long) was acquired and seed is being multiplied for this cultivar.

Livestock Programme

This programme concentrated on duck breeding and duckling production, sheep breeding and forage production. These projects were designed mainly to provide services to the farming community, such as providing quality-breeding animals, which were reared to augment the supply of animal protein to the nation.

The livestock programme was able to provide in excess of 100,000 ducklings and 39 breeding rams to the farming community. Revenue generation was G\$9.5M from these ventures. This exceeded the projected revenue generation of G\$7.5M for 2000.

*The forage production project successfully instituted a protein bank for sheep production, by utilizing a number of legumes, with *Leucaena* being the main species. Small quantities of *Leucaena* seeds were distributed to the farming community.*

The transfer of technology was another important aspect of the programme. Activities included the hosting of farmers on tours to our facilities, recording a video production on duck rearing activities and displaying prominently various aspects of the livestock programme at national exhibitions. Additionally, the facilities were utilized as training grounds for students, primarily at the secondary and tertiary levels. Information on different aspects of livestock production was disseminated in the form of fact sheets, scientific and farm journal publications and newspaper articles.

Soils and the Environment

A semi-detailed survey of Bonasika was completed and the report submitted. Fieldwork on a semi-detailed survey of Canal #1 Polder was completed.

*In soil management, projects were initiated to demonstrate and popularize the use of *Rhizobium* inoculum in cowpea production. Demonstration plots were established at*

Unity, East Coast Demerara and West Watooka, Linden. Seminars and workshops on the use of the inoculant were conducted for farmers in various parts of the country.

Intermediate Savannah Unit

NARI took responsibility for all the operations at the Intermediate Savannah Field Research Unit at Ebini from CARDI in April 2000. CARDI has since transferred all assets at Ebini to NARI. The main activities undertaken were cowpea and black eye production, promotion of zero tillage techniques and sheep production.

Agricultural Services Programme

This programme continued to give support to farmers and to agencies in the agricultural sector.

Activities included routine soil analysis, fertilizer and soil management recommendations, diagnoses and recommendations for the management of plant diseases, insect pests and weeds. Additionally, bait for the control of leaf-cutting Acoushi ants, as well as Rhizobium inoculum for legume production were produced.

The Library and Information Centre received a total of 1329 books, journals and abstracting journals. This facility was utilized by farmers, students and researchers.

An effective Communication Unit was firmly established during the year. The Unit was equipped with modern visual aids and film making equipment and is now capable of filming, editing and producing documentaries. The Unit disseminated useful information to the public via radio, television and the print media.

COLLABORATIVE ACTIVITIES

The Institute was involved in collaborative activities with other sector agencies. These included organic cocoa production and peanut production.

1. Organic Cocoa Production

An Organic Cocoa Project was started in the Mabaruma/Hosororo area in Region # 1. The idea for this project was born out of the visit to Guyana, in February 2000, by the Prince of Wales. NARI together with IICA, formulated a proposal for the development of organic cocoa production in this area in April/May, 2000. As part of the feasibility analysis for the project, a small sample was sent for testing in the Netherlands in May. Those results clearly indicated the uniqueness and very fine flavour of Mabaruma cocoa and its potential for production was declared very promising.

With financing from the British High Commission and the Government of Guyana, the project was launched in August 2000, under NARI's leadership. Project implementation was based on a three-pronged approach:

- (i) preserving the uniqueness of the cocoa stands and increasing their numbers;*
- (ii) training the local farmers in proper organic cultivation techniques; and*
- (iii) through the marketing of the cocoa to a gourmet clientele, garnering enough prices to create income incentives for the cocoa farmers to commit to the first two of these objectives.*

2. Peanut Production

This programme started trials to demonstrate improved production practices for peanut. Trials were at three sites – Rupununi, Soesdyke/Linden Highway and Ebini. The trials in the Rupununi were done collaboratively with the Ministry of Fisheries, Crops and Livestock, NARI, IICA, University of Florida and “New”

GMC. Three varieties obtained from the University of Florida were being compared with the Guyana jumbo variety used by farmers in the Rupununi.

FUNDED PROJECTS

Two projects funded by FAO and one by the OAS were executed in 2000. FAO funded the 'Plant Nursery Development and Improvement Project' and 'Plant Nutrition Management System' in the rice sector. The OAS funded project was on 'Cooperation in the Development and Transfer of Biotechnologies for sustainable Development in the Caribbean.'

Human Resources

The Institute recruited 15 persons in four staff categories and promoted four persons. There were 12 resignations, the contracts of six persons and the services of 11 persons were terminated. Two staff members died in the year 2000 and 12 were dismissed. Staff members at all levels benefited from both local and overseas training.

Financial Matters

The capital Programme consisted of four activities, which were completed at a total cost of G\$10M.

The total income for the year 2000 was \$227,784,548. Government contribution (current and capital) was \$192,252,364, the sum of \$12,166,132 was the contribution from other agencies and the Institute generated \$23,366,052. Total expenditure for 2000 was \$248,484,605.