



DOMINICA:

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Note by FAO

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CHAPTER 1

Introduction to Dominica and its Agricultural Sector

1.1 INTRODUCTION

The Commonwealth of Dominica is a republic within the Commonwealth of Nations. The President, who has some executive functions, is head of state. The Head of the government is the Prime Minister who appoints the Cabinet which, in turn, is responsible to Parliament. The capital is Roseau.

English is the official language, and it is spoken and understood by everyone, but 90% of the population use French Creole in everyday speech. According to the 1991 census the country had 71,794 inhabitants, a decline of 3.5% from the previous census (1981). A high proportion of the population (28.9%) live in the capital city and environs. Dominica is the only Caribbean island with a native Carib Community, approximately 3,000 members of which live on a 15 km reserve on the east coast.

1.2 LOCATION

Dominica is part of the Lesser Antilles, and it is located between the French islands of Guadeloupe to the north and Martinique to the south at Latitude 15°20 North and Longitude 61°20 west. The country covers 750 km, making it the largest English speaking Eastern Caribbean island. Dominica lies in the hurricane and tropical storm belt. Hurricanes devastated the agricultural sector of the island in 1979, 1980 and 1989, reversing a modest economic recovery. Despite major rehabilitation efforts, natural disasters of this kind remain a constant threat. In addition food production is severely affected from time to time by drought.



1.3 CLIMATE

Dominica's high relief affects its climate which can be described as humid tropical marine. Annual rainfall ranges from 250-300 in/yr. in the interior to 50-70 in/yr. in the coastal lowlands. These factors contribute significantly with extremely lush (green) vegetation and much biodiversity.

1.4 FOREST TYPES

Dominica's undisturbed forests are the most extensive in the Eastern Caribbean. The vegetation consists of more than 1,000 species of flowering plants and about 60 woody plants and tree species. Dominica contains 52,000 ha of natural forest, woodland and bush. There is an impressive plant diversity of 155 families, 672 genera and 1,226 species of vascular plants and trees. The natural vegetation on the island consists of Swamp Forests, Dry Scrub Land, Littoral Woodland, Deciduous Forest, Rain Forest, Montane Forest, and Elfin Woodland. Total forest acreage is 130,000 which accounts for 2/3 of the total land area. of this, 9,210 acres has been set aside as national parks. National parks legislation provide protection for the genetic resources within park zones.

1.5 THE DOMINICAN ECONOMY

Dominica possesses an open free-market agricultural economy. Because of the small population, economic growth is highly dependent on external markets. Gross Domestic Production (GDP) averaged US \$143M annually over the past five years leading up to 1994, representing a percapita income of US \$1,989 per year. Agriculture makes the greatest contribution to GDP which averages 27% annually. The other major contributors are Manufacturing, Government Services and Wholesale and Retail Trade. Tourism in recent years has emerged as a significant growth area but its overall contribution to GDP is still comparatively small, being 2.8% in 1994.

The economy has been described as mono-crop in nature, being mainly dependent on banana, which alone accounts for about 8% of GDP. The vagaries of banana resulting from the vulnerability of the crop to frequent hurricane and storm damage and unfavourable currency fluctuations, have produced a great deal of instability in the economy. This problem has been the main focus of national eco-



conomic and social development policy over the last ten years, and constitutes the main point of departure of the structural adjustment and diversification programme in Dominica

1.6 THE AGRICULTURAL SECTOR

The Agricultural Sector is characterized by a tradition of banana production along with traditional non - banana crops such as citrus, root crops, coconuts, plantains and other food crops. Banana is the most important cash crop and accounted for 61.3% of agricultural exports in 1991. Development in regional and international trade have reduced the economic contributions of coconuts & citrus. Root crops, beverage crops, other exotics and cut flowers, have assumed greater significance in recent times.

Small, privately owned farms ranging from 1 - 5 acres dominate the sector and are characterized by varied intercrop combinations which depend on agroecological conditions. Approximately 20% of the total land acreage of arable land is under cultivation, 15,000 acres are intercropped while 10,000 acres are in pure crop stands.

1.7 AGRICULTURE'S CONTRIBUTION TO THE ECONOMY

Though the contribution of crops to GDP has declined overall since 1981, when it contributed 24.8%, crops remain by far the most important component of the agricultural sector and contributed 19.3% of total GDP in 1993. The 1991 Census employment statistics classified agriculture, forestry and fishing together which accounted for 30% of employed persons.

In terms of trade, primary agricultural products exported in 1991 accounted for 67.3% of the value of total exports in that year. The proportion of primary agricultural exports has fluctuated over the years but has shown some increase since 1989. The continuing dominance of bananas in domestic exports compared to other agricultural produce is noteworthy. In 1991, bananas accounted for 61.3% of total domestic exports.



More recently, developments in International Trade policy such as the GATT; the EC Single Market and NAFTA, have increased the uncertainty surrounding the banana industry. This has underscored the dire need for diversification of the agricultural sector, and indeed the national economy - given the significant contribution of agriculture to GDP over the years.

Sustainable development for a small island state with limited natural resources is a significant undertaking. Indeed, the diversification of a small island “banana” economy is a great challenge with few options. It is imperative, therefore, to examine the feasibility, potential, and sustainability of all strategies in our economic development.

Known as the “Nature Island of the Caribbean,” the country has much to offer tourists in search of natural rainforests, and unspoiled coral reefs. In fact, its rugged terrain, perennial streams, rivers, waterfalls and rich diversity of fauna and flora makes Dominica one of the most pristine in the world. These natural assets are a key resource which can be packaged for the ecotourist. Indeed, ecotourism forms the cornerstone of governments overall tourism strategy.

1.8 THE WAY FORWARD

With respect to plant genetic resources, the challenge is first to identify all such resources on island and further to identify ways in which these resources can be utilized in a sustainable way to provide jobs, medication, food and foreign exchange earnings for a fragile economy.

A first step of the process toward sustainable utilization of these resources requires a knowledge of what exists in terms of location, quantity, and quality, followed by the development of mechanisms for the protection of these resources. Only then can the full potential of these resources be realised.



CHAPTER 2

Indigenous Plant Genetic Resources

2.1 INTRODUCTION

Dominica's undisturbed forests are the most extensive in the Eastern Caribbean. But documentation of the flora of the island needs to be consolidated, centralized and computerized so as to improve accessibility and information dissemination. The natural vegetation of Dominica is divided into 7-9 communities (Clarke, 1994). These are:

- a. Swamp Forests - (30 ha) . Mainly found near Portsmouth in the North West. Dominant species: *Pterocarpus officinalis* (mangrove). Genera present: *Chrysobalanus*, *Annona*, *Montrichardia* and *Acrostichum*.
- b. Littoral Woodland - (140 ha). Windward coast. Dominant species: *Coccoloba uvifera*, *Thespesia populnea*, *Erithalis fruticosa*, *Chrysobalanus icaco*.
- c. Dry Scrub Land - (6240 ha). Leeward coast. Many showy flowering species exist including *Sabinea carinalis* (National flower found only on Dominica). Other species present: *Haematoxylum campechianum* (logwood), *Calliandra*, *Lonchocarpus* and *Bursera simaruba*.
- d. Deciduous Forest - Disturbed; most developed on the Leeward and Windward side of the island. Main species: *Rhyticocos amara*, *Coccoloba Venosa*.
- e. Rain Forests - (24,490 ha). Dominant species include: *Dacryodes excelsa*, *Sloanea*, *Talauma*, *Ormosia*, *Pouteris Chimarrhis* and *Dussia*.
- f. Montane Rainforests - (3640 ha). Best developed in the Southern part of Dominica, in Morne Trois Piton National Park. Dominant species: *Podocarpus cariaceus* (gymnosperm) and dicots e.g. *Cyrilla Richeria*, *Tovomita* and *Ilex macfadyenii*.
- g. Elfin Woodland - (170 ha) . Dominant species: *Clusia mangle*, *Prestolea montana*, *Geonoma dussiana*, *Prestoal montana*, *Geonoma dussiana*.

James et al have provided the following list of selected species of Economic Importance found in the wild.



2.2 PLANTS RESISTANT TO DISEASE

Aroids: Jabba (*Xanthosoma sp.*) is a wild type used as a source of animal feed, which has shown resistance to tannia burning disease. Dasheen Comme, (*Colocasia sp.*) is grown for its tannia-like cormels. *Xanthosoma brasiliense Engl.* is grown for its edible leaves.

The two tolerant types are Elsiné and Toby. These produce rough skinned cormels which are liked by farmers but are of low marketability (CARDI 1986).

2.3 MEDICINAL PLANTS

Dominica's biological resources include a number of medicinal plants which are largely unexploited. Many of these have not been investigated for their value as commercial drugs. They are collected from the wild.

There is no information available on the extent of overexploitation of these plants and the availability.

An incomplete list of medicinal plants available in the wild in Dominica is supplied in Annex 1 of this report.



Table 1 Some Important or Potentially Important Species Found in the Wild in Dominica

Common name	Species	Status
1. Species Use for Food		
(a) Wawa		Rare
(b) Mauby		
(c) Breadfruit Staple	<i>Artocarpus altilis</i>	Domesticated
(d) Breadnut	<i>Artocarpus altilis</i>	Rare
(e) Babawle		Rare
(f) Babadin		Rare
(g) Mibi		
2. Species Used for Industrial Purposes		
(a) Screwpine	<i>Pandanus pacificus</i>	Rare
(b) Larouman	<i>Ischrosiphon arouman</i>	Rare & Threatened
(c) Roseau	<i>Gynerium Sagittatum</i>	Rare
(d) Pom di Lyan	<i>Passiflora laurifoli</i>	Rare
(e) Red Cedar	<i>Cedrella mexicana</i>	Rare
(f) Coubaril	<i>Hymenea Coubaril</i>	Threatened
(g) Lauvier de Rose	<i>Phoebe elongata</i>	Near extinction
(h) Bay Leaf	<i>Pimenta racemosa</i>	Scare in wild, grown in plantation system
(i) Calabash	<i>Creocentia cujete</i>	Rare
3. Species Used for Medicine and Other Uses		
(a) Vanilla	<i>Vanilla spp.</i>	
Palmiste	<i>Enterpe dominicana</i>	
Bwa Bande	<i>Richeria grandis</i>	Rare
Oucoo		

Source: James et al., 1995



CHAPTER 3

National Conservation Activities

3.1 *IN SITU* CONSERVATION ACTIVITIES

3.1.1 Forest Reserves And Parks

Demarcated forest reserves and National Parks comprise 20% of forest lands in Dominica. There are two Forest Reserves - The Northern (8,800 ha) and the Central (410 ha).

The Morne Trois Pitons National Park (MTPNP) - established in 1975 - contains 6872 ha of legally protected forest in the south and central part of the island. The MTPNP includes the 380 ha Archbold Reserve, an extensive area of rain forests. The Park forms one of the largest stands of protected undisturbed forest in the Caribbean. A ten (10) year management plan has been drafted for the management of the Morne Trois Piton National Park. This plan identifies a number of zones for Special Use, Extensive Use, Environmental Study, Research and Intensive Use. Dominica's second park, the Cabrits National Park, was legally established in 1986.

3.1.2 Proposed Morne Diablotin National Park

The proposed park covers 8,525 acres. Although it is small in comparison to other terrestrial protected areas in the region it contains significant extents of primary forests especially elfin woodlands and montane forests. The area contains highest diversity of flora and fauna of any area in Dominica. Among the endemic plant species recorded for Dominica the following are known to exist within the proposed park boundaries (*Inga dominicensis*, *Bealeria petiolaris*, *Chromolaena impetiolaris* and *Chromolaena macrodon*). Over 90% of the proposed park is considered to be virgin forests.



The Biological diversity of these areas are protected under the National Parks and Protected Areas Act. The Forestry Division of the Ministry of Agriculture (MoA) is responsible for the management of forest resources.

Under the Forest Act the President of Dominica may by Order declare any private land to be a protected forest whenever in his opinion this appears necessary to prevent the wastage of resources of timber and for securing the proper management of timber lands.

3.2 EX SITU COLLECTION

3.2.1 Biological Diversity of the Area

The Dominica branch of The Caribbean Agricultural Research and Development Institute CARDI does not have a specific programme or project for the conservation of PGR. However, tissue culture activities of specific crops such as Anthurium, tannia are ongoing with the main objectives of providing planting material of new and improved cultivars through “in vitro” propagation which will enhance the germplasm on the island.

In vitro cultures of Anthurium hybrids are accessed from CARDI (Barbados). *In vitro* multiplication, rooting and storage are done at the tissue culture lab in Dominica. Weaning/hardening and distribution are done in Dominica.

3.2.2 Number of accessions in *Anthurium* germplasm collection (*in vitro*)

- Common (Caribbean) pink.
- Hajrija Hybrid Red var 1.
- Hajrija Hybrid Pink var 1.
- Hajrija Hybrid Pink var 2.

3.2.3 Micro Propagation Activities

Tannia (*Xanthosoma sagittifolium*) micro-propagation activities include meristeming of the two commercial varieties Rabess and St. Lucia (Jamaica) for field evaluation.



3.2.4 Storage Facilities

Plant germplasm maintained *in vitro* at:

21 - 25°C

100 % R. H.

5,000 - 8,000 lux

16 hours dark, 8 hours light.

Other storage measures employed include field museum plots. Presently CARDI has a field museum plot comprising of 13 cultivars of yams (*Diocorea spp.*) at the Grand Bay Agricultural Station.

3.2.5 Constraints

At the end of donor-funded projects the plant germplasm that are organised in museum plots become difficult to maintain and in most cases the plant resources are lost.

3.2.6 Documentation

Through the FAO CARICOM seed project GCP/RLA/108/ITA Improved Seed Production, the Caribbean Seed and Genetic Resource Information Network (CSEGRIN) software (computerized data base) has been installed at the CARDI and MoA computers in Dominica.

To date characterization and evaluation data of one yam cultivar has been documented through the CSEHRIN system.

At present information is made available to users via computer print-out and floppy disk. Modem access has not been made available to users.

3.2.7 Evaluation and Characterization

D. alata (Costa Rican yam) is in the process of evaluation. "Elite" cultivars of Anthurium in Dominica are to be characterized and evaluated. CARDI is awaiting a descriptor list from the World Horticulture Society to commence data collection.



3.2.8 Selection and Evaluation

Selection and evaluation of passionfruit (*Passiflora edulis f. flavicarpa*) was initiated in Dominica by MOA, IICA and CARDI. Nine lines were identified, showing consistent desirable characteristics. Using seedlings and selections, propagated vegetatively, a germplasm bank is being maintained. A programme to produce, distribute and monitor a composite with high yield seed and juice quality to farmers is intended.

3.3 THE REHABILITATION OF THE DISAPPEARING DRY WOODLANDS OF DOMINICA

3.3.1 Rehabilitation Programme

The lemon grass (*Cymbogon nardus, subvar citratus*) originally cultivated for its oils, has become a noxious weed in Dominica and other islands of the OECS. Since 1965 it has overrun several hundred acres of dry woodland and more favoured savannahs of Dominica. It continues to spread rapidly and is now entering (much moister, rainforest fringe) banana lands.

The spread is accelerated through the practice of early-burning of the grasslands for early flush or to manage animals. This leaves it to seed unhindered, but destroys other grasses more completely, and eliminates shrubs and trees of the woodland at the fringe of the area.

The effects of the spread of lemon grass include: the loss of biodiversity, effects on climate, land degradation and loss of most of the islands dry woodland. A very diverse ecology is being replaced by a single species which, because of its widely-spaced-tussock habit, contributes to erosion on steep slopes in Dominica. Lemon grass is also entering the rainforest area, and its effect on the climate is likely to be unfavourable.

A project proposal developed by the Springfield Environmental Centre is intended to test and pilot-implement a method to reverse the takeover. At the end of the first phase of the Project about 20 acres should be largely cleared of lemon grass and the method of re-establishing natural woodland tested. Subsequent phases will see the restoration of woodland in controlled areas.



After 18 months the most successful techniques will be extended to all plots. Fire resistant trees or shrubs will then be planted/encouraged as an intermediate step to restoring controlled areas of the planted natural woodland. Monitoring and control will be important over several years while establishing these areas. Finally, further assistance will be sought to tackle larger areas.

Subject to the availability of funding, this project is intended to start in late 1995, and extend over several years. Phase 1 will last about 18 months and cost about 50,000 USD for equipment and hire of machinery, materials, labour etc.



CHAPTER 4

Dominica's Use of Plant Genetic Resources

4.1 AGRICULTURAL DIVERSIFICATION

The Government's Agricultural Sector Plan for 1990 - 1994 identifies agricultural diversification as a top priority. The Agricultural Diversification Programme is expected to result in a more sustainable agricultural system, generate better farm incomes, create employment opportunities, increase foreign exchange earnings and improve food security.

The banana industry is currently being restructured at national and regional levels for greater financial and technological efficiency and to increase national production to 71,000t, the fixed quota for the Commonwealth of Dominica under the new regime.

Root crops, plantain, fruit crops, ornamental crops and livestock have also been targeted under the Agricultural Diversification Programme.

Apart from the vagaries of the weather, low yields, poor marketability of produce and consequent low returns /acre are among factors affecting production of non-banana crops.

Some of the technological innovations which should receive greater attention are: appropriate crop rotation practices, better soil and water conservation practices, clean healthy planting material, higher plant density, better fertilizer uses, better pest and disease control practices, irrigation, prompt harvesting, more efficient harvesting techniques and improved post harvest handling and storage.

A major contributor to low yields is the poor quality of planting materials.



4.2 SUPPLYING LOCAL FARMER-DEMANDS

Though the Government does not have a national plant breeding programme, the Ministry of Agriculture has a Plant Propagation Programme which responds to the needs of a number of crop development programmes identified under the Agricultural Diversification Programme. These include production of fruit tree plants, root crop plant material & other exotic plants.

The programme is geared toward supplying local farmer-demand which is sometimes stimulated by the Ministry of Agriculture Crop Diversification Programme. The objective of the propagation programme is to provide disease-free planting materials.

4.3 POTENTIAL

CARDI Dominica is mandated to conduct agricultural research for Dominica in close collaboration with the Ministry of Agriculture. Currently, there is no formal National Plant Breeding Programme and no PGR Collections exist. There is no current crop improvement research using PGR at a national level.

However, significant potential for research does exist. Recently, IICA/MOAD/CARDI organized and conducted some research which utilized PGR on island. This research was aimed at improvements of yield characteristics for passion fruit and the collection and review of germplasm for tannia. There is the potential for utilization of PGR for use in crop improvements programmes. However, these resources must be identified before such research can be undertaken.

The annexes of this report identifies a number of plants, their uses and potential. The benefits derived from PGR included medicinal uses, craft, small industry etc.

4.4 WHAT MUST BE DONE

First, there is need for policy and associated legislation to address the several issues of PGR management and utilization. In the short run, however, there is a need to consolidate all of the work conducted and documented thus far in the process of developing a complete PGR inventory.



4.5 CHARACTERIZATION AND EVALUATION

In terms of germplasm characterization and evaluation, Dominica is a member of the Caribbean Seed & Germplasm Resources Information Network - CSEGRIN. A computerized programme (CSEGRIN) in support of this network has been developed and was released in November 1994.

However, characterization/evaluation data gathered so far focuses only on food crops. There seems to be potential for utilization of this programme in the development of a PGR inventory at national levels.

Finally there is urgent need for training taxonomists as well as farmers who would be instrumental in developing PGR inventory.



CHAPTER 5

International Collaboration, National Goals, Policies, Programmes and Legislation

5.1 POLICY

The Government of the Commonwealth of Dominica recognises the need for the conservation of the country's biodiversity.

A number of documents including Dominica's National Environmental Action Plan (GCD, 1994) mention "the overwhelming dependence of the economy on its natural resource base which underscores the critical importance of appropriate pricing policies for sustainable development".

However, the focus of the country's efforts has been on the conservation of nature rather than the protection of the country's genetic base of both cultivated and domesticated wild species and their wild relatives in natural ecosystems as well as man-made systems. Nevertheless Dominica has established national parks and forest reserves and instituted environmental control legislation which could form the basis for the strengthening of national conservation efforts.

5.2 INTERNATIONAL COLLABORATION

5.2.1 International Agreements

The country has joined the international community in efforts at conserving biodiversity. Dominica is signatory to two major international agreements. (a) The Convention on International Trade in Endangered Species and Wild Fauna (CITES). The Convention is the most important international agreement to regulate trade in wildlife species under threat of extinction. CITES also covers plants products and derivatives of species under threat. (b) The Convention on Biological Diversity was signed in Rio de Janeiro in June 1992.



5.2.2 Regional Collaboration

The Government of Dominica's relationship with other countries and institutions for the exchange and management of plant genetic resources, is maintained mainly through CARDI. This regional research and development Organisation has been working mainly on the introduction and evaluation of food crops germplasm and the multiplication and distribution of planting materials. CARDI maintains a small micro-propagation centre in Dominica.

Through CARDI Dominica has fostered linkages with regional representatives of IICA, INRA and CDB and with international organisations such as FAO, CIAT, IRRI, CIMMYT, ICRISAT, IITA, CIP, IBPGR and many universities in the USA. In addition, the Government of Dominica has collaborated with: (a) the UWI Cocoa Research Unit for the exchange of information and Theobroma cacao material (b) the government of the Republic of China (ROC); the ROC has introduced “new vegetables and fruit crops and new varieties of existing crops and continues varietal selection of fruits and vegetables”.

5.3 NGO'S ROLE

Non-government Organisations such as the Dominica Conservation Association (DCA), the Small Projects Assistance Team (SPAT) and the many local government authorities have a vital role to play in the conservation of biological diversity in Dominica. These organisations have made significant contributions to nature conservation. However, there is need for:

- a. encouraging a partnership and dialogue between NGO's, local government and central Government in activities aimed at the conservation of plant genetic resources.
- b. Government to make use of NGO's in the design and implementation of education and awareness programmes aimed at conserving plant genetic resources.

5.4 NEED FOR EDUCATION AND TRAINING

Education, including formal education, public awareness and training are important for effective implementation of policies and programmes aimed at the preservation and utilisation of the Country's plant genetic resources.



Organisations in Dominica which may be charged with the management of conservation of biological diversity programmes do not have fully trained specialists in taxonomy, seed science, statistical sampling, germplasm, plant breeding, social and anthropological studies and other related subject areas. Education and training are, therefore, priority areas in any National Programme for the preservation and utilisation of the country's biological diversity. Government authorities and Non-government Organisations also need to be aware of genetic resources management training available so that maximum use can be made of these opportunities.

5.5 NATIONAL LEGISLATION

5.5.1 National Laws

Dominica is continuing to develop its legislative/regulatory framework for environmental management. (GOCD, Environmental Action Plan, 1994). A number of laws addresses issues of environmental management, forestry, wildlife, fisheries, national parks and protected areas and beaches. However, government recognises that there are "significant gaps in these laws". For example: there are no laws which restrict the planting out of imported genetic material and the sale and distribution of seeds. The country has no Intellectual Property Rights legislation. International technical assistance is therefore required for the development of national legislation in the field of plant genetic resources.

5.5.2 Plant Quarantine

The Plant Protection and Quarantine Act No. 10 of 1987 provides for the protection of the agriculture resources of Dominica from dangerous plant pests and diseases.

Under Section 28 of the Act provisions are made for the Minister to make regulation as he considers necessary or expedient for carrying out provisions of the Act included under sub-section (h) - regulating the importation of a restricted articles. A draft Plant Quarantine Regulation, with accompanying schedule governing the importation of plants and plant products, has been reformed by IICA Plant Protection Specialists of the ECS office in St. Lucia and has been distributed to the relevant authorities of the member governments of the OECS for their consideration and comments. The regulation covers ports of entry, entry requirements, phytosanitary certificates, fruits and vegetables, planting material (in vitro and in view), plants pests, non-plant articles, mail importation's and packing materials.



5.5.3 Safeguards

The Plant Import Schedule contains the major economic crops of the Caribbean arranged under these groups: cereals crops, fibre crops, fruit crops, grains and legumes, oil and plantation crops, vegetable crops, ornamentals, forest species and products, herbs and spices, wild plants/grasses/aquatic plants, parasitic plants, etc. The Plant Quarantine Unit of the Ministry of Agriculture utilises this draft regulation and schedule as a guide in their operations.



CHAPTER 6

National Needs and Opportunities and Global Plan of Action

6.1 NATIONAL NEEDS AND OPPORTUNITIES

6.1.1 Basis for Action

Basis for Action: Agriculture is the main source of national income, employment and food supply for the general population. This will continue for the foreseeable future.

The GOCD is committed to a policy of agricultural diversification and to the development of the full potential of the agricultural sector. This strategy is seen as the major plank of the structural adjustment programme which aims at sustainable economic growth.

The current effort in agriculture is targeted at the development of crops, floriculture, livestock, fisheries, forestry and agribusiness.

The role of PGR in agriculture development is not generally recognised due to the lack of information on its potential for contributing to the achievement of agriculture policy objectives.

It is well known that PGR have considerable significance well beyond traditional uses. Any policy to develop the full potential of the agricultural sector in Dominica needs to target this potential for its economic and social advantages. In this regard there is need for the following activities:

6.1.2 Programmes

Government, with the co-operation FAO, other international donor agencies, regional and international institutions, non-government organisations, the private sector and the rural communities should institute the following programmes and projects aimed at the development or strengthen existing strategies, plans and programmes for the conservation of biological diversity and the sustainable use of PGR.



a. Sensitisation and Awareness

Objective: To increase knowledge and information available to decision makers and the public about plant genetic resources.

Activities: Workshop on plant genetic resources; meetings and discussions with key stake holders on the subject; dissemination of publications and reports dealing with PGR.

b. Investigation into PGR in Dominica

Objective: To assess the nature, scope and condition of PGR (including *macro algae*, microscopic algae and fresh water algae) in Dominica with the aim of facilitating policy and management decisions in relation to conservation and utilisation of PGR.

Activities: Design survey, recruit survey team, conduct survey; collect and analyse data; report preparation and dissemination; development of PGR inventory.

c. Policy and Strategy for the Management of PGR

Objectives: To formulate and promote a coherent co-ordinated policy for the utilization and conservation of PGR in Dominica.

Activities: Workshop to formulate policy and strategy; development of programmes to utilise and conserve PGR within the context of the agricultural objectives of Dominica; adoption of these policies and programmes by the GCD.

d. Propagation of Species Requiring Multiplication and those which may be at Risk of Extinction

Objective: To develop and maintain plant populations at optimum levels which can withstand sustainable exploitation.

Activities: Establishment of museum plots; establishment of plant nurseries; establishment of PGR banks; promotion and adoption of relevant legislation for the preservation of PGR with the National Park System.



e. Regulations Governing the Management of PGR

Objective: To revive and rationalise existing legislation and to formulate and enact new ones along with the rules, regulations and enforcement mechanisms.

Activities: Review existing legislation; formulate new draft legislation; formulate rules and regulations for enforcement; passage of new regulations in Parliament together with the relevant powers and authority for enforcement.

f. Feasibility Studies

Objective: To identify opportunities for investment in the utilisation of PGR by both public and private sectors including avenues for joint investment.

Activities: Formulate terms of reference; preparation of proposals, negotiation of funding; conduct studies.

g. Local Capacity Enhancement

Objective: To upgrade and expand institutional abilities for PGR management through education, training, technical assistance, development of local knowledge base including computer data and library, and provision of essential facilities and equipment. The designation of a focal point for PGR management as well as the institution of mechanisms for inter-agency coordination are also important objectives.

Activities: Designation of focal point for PGR management; establishment of mechanisms for co-ordination of PGR management; conduct needs assessment for education and training; develop education and training programme; formulate proposals for education, training equipment and other resource support; implement of training education programme and related institutional support agenda.

h. Public Awareness Programme

Objective: To enhance the knowledge and appreciation of the general public regarding the importance of Activities to the nation's health, wealth and well-being and to secure popular support for programmes relating to its sustainable utilisation and management.

Activities: Dissemination of information via mass media including television, radio, newspapers.



i. Investment Capital

Objective: To facilitate investment in the development of Activities by the public and private sectors.

Activities: Investigate investment opportunities; promote investment; organise and mobilise capital development finance institutions such as the Industrial Development Bank (AIDB).

6.2 GLOBAL PLAN OF ACTION

The GOCD wishes to propose the following for inclusion in the Global Plan of Action.

- Provide developing countries with technical assistance to enhance national legislation, develop information data bases and design programmes to utilise and conserve PGR.
- Review educational programmes priorities to facilitate the development of national activities to achieve policy objectives.
- Provide support for national and sub-regional research programmes for the conservation and utilisation of PGR.
- Promote the rehabilitation of damaged ecosystems and the recovery of endangered species.
- Develop measures and arrangements to protect the rights of countries of origin of PGR.
- Promote greater international co-operation in the development, research, public awareness, education and training in areas related to the conservation and utilisation of PGR.
- Develop systems for the fair and equitable sharing of the benefits of research and development of the use of PGR between the sources and the users of PGR.
- Provide funding mechanisms, including a special international fund, to assist developing countries identify, utilise and conserve PRG.
- Support studies on the role of PGR and the loss of species as it relates to the economic and social development of developing countries.



- Provide access for developing countries to scientific and technological information in relation to PGR and assist in the provision of technology and finance to facilitate the transfer of technology.
- Continue the encouragement and support of governmental and NGO projects and programmes focused on sustainable development.



Acknowledgement

This report is an assessment of the state of Dominica's Plant Genetic Resources. We hope the document is the first essential step in setting a national agenda for the critical assessment of the country's capabilities, limitations and needs so as to address the issue of the identification, documentation, conservation and sustainable exploitation of this country's rich biodiversity.

The Food and Agriculture Organization (FAO) of the United Nations requested the compilation of this of this report in preparation for the International Conference and Programme for Plant Genetic Resources (ICPPGR) to be convened in 1996.

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ANNEX 1

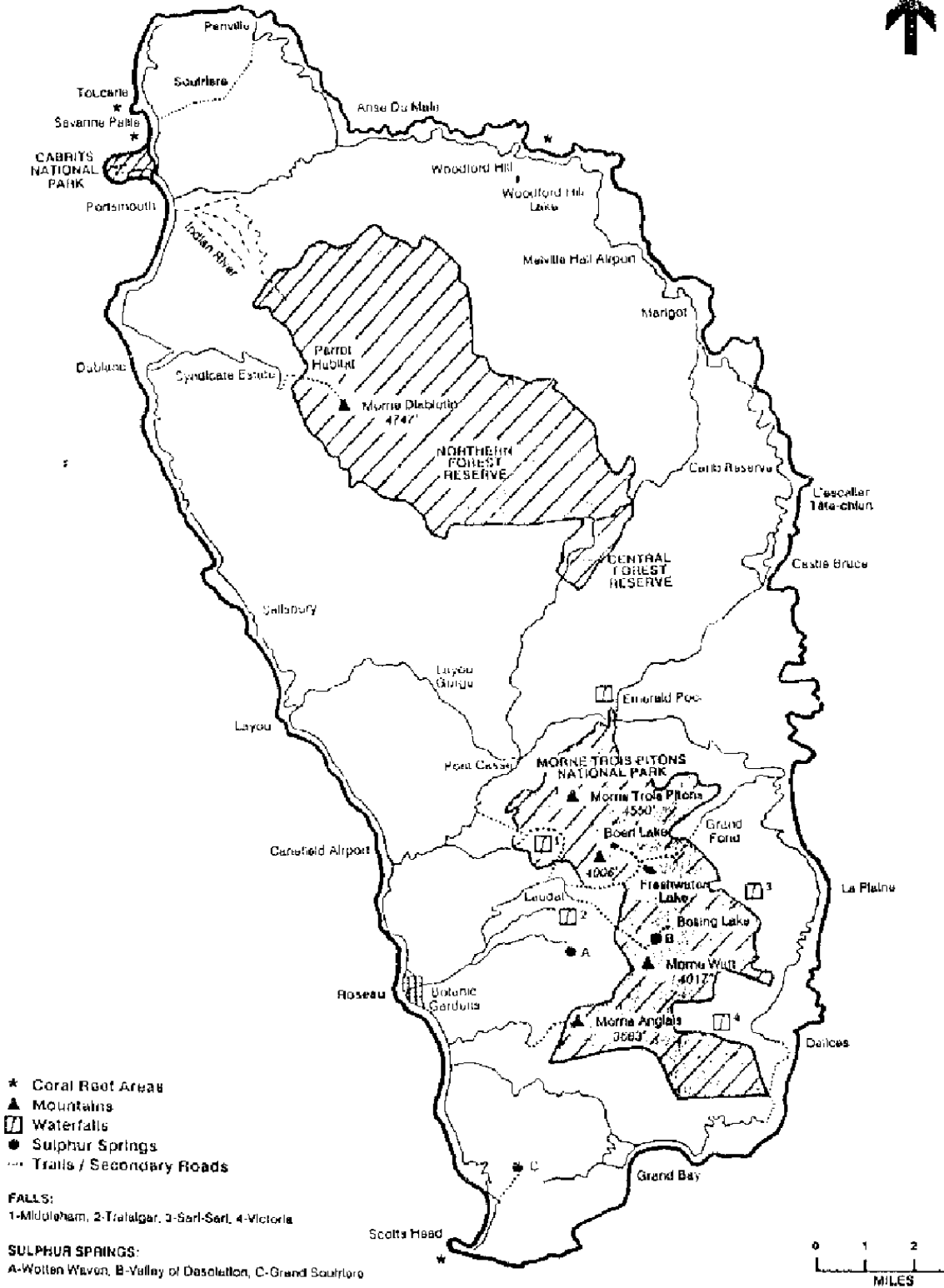
FIGURE 1. GENERAL MAP WITH LOCATION OF DOMINICA





FIGURE 2. PARKS, RESERVES, TRAILS AND NATURAL ATTRACTIONS

DOMINICA/PARKS, RESERVES, TRAILS & NATURAL ATTRACTIONS





Abbreviations

DCA	Dominica Conservation Association
CITIES	Convention for International Trade in Endangered Species
NGO	Non-Government Organisation
CARDI	Caribbean Agricultural Research and Development Institute
FAO	Food and Agriculture Organisation of the United Nations
IICA	Inter-American Institute for Co-operation on Agriculture
INRA	National Institute for Agronomic Research (French)
UWI	University of the West Indies
GCD	Government of the Commonwealth of Dominica
SPAT	Small Projects Assistance Team
PGR	Plant Genetic Resources
CDB	Caribbean Development Bank
IBPGR	International Board for Plant Genetic Resources
ROC	Republic of China
OECS	Organisation of Eastern Caribbean States
CARICOM	Caribbean Community
GATT	General Agreement on Tariffs and Trade
NAFTA	North American Free Trade Area
MOAD	Ministry of Agriculture in Dominica



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