MALTA:

COUNTRY REPORT TO THE FAO INTERNATIONAL TECHNICAL CONFERENCE ON PLANT GENETIC RESOURCES

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Note by FAO

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CHAPTER 1
Introduction

The Malta Archipelago consisting of five islands, three of which are inhabited is situated 35° North of Tunisia and below Sicily.

It has a total land area of 347 km² which works out at a dense population ratio of 1,037 persons per km². The climate is typical Mediterranean with an annual precipitation of *circa* 500 mm spread over the October to March period.

Of the total land area only around three-fifths is cultivable. Again around 83.3% of this cultivable area is dry land while some 4.5% is irrigated. The majority of agricultural holdings are rented on an annual basis mostly from Government which is the largest land owner. Malta is self sufficient in poultry and eggs, pork, fresh milk, vegetables (most crops) but definitively relies on the importation of fruit (except strawberries), beef and cereals. Malta exports early spring potatoes to Northern countries but then imports both ware and seed potatoes. Protected cropping, through the use of greenhouses and cloches complete with drip irrigation systems are now increasing in use and popularity. The use of treated sewage water from a Government owned plant in the South of the island is helping enormously Agricultural development in the South. Another sewage treatment plant is envisaged for the North of Malta and another one for the second largest island, Gozo. The agricultural population in 1986 was only 4.4% of the total population.

Due to the affluent way of life coupled with the introduction of local councils a nucleus of decorative "Growing on" tree nurseries and of gardening services has commenced to grow. Practically all woodlands were planted by man with localised occurrences of spontaneous regeneration. Only a few localities occur where the vegetation has not been touched by men at least for the last century.

CHAPTER 2
Indigenous Plant Genetic Resources

Not much research has been carried out on local trees, crop plants and their relatives in the wild. Pointers to promising material exist.

In fact *Pinus halepensis* forestry seedlings raised from seed harvested from particular trees have shown extreme resistance to drought and to coastal conditions.

Another interesting tree is the *Quercus ilex*. A group of this species, hundreds of years old offers a unique scope of study and of saving the genetic material of a species which is important to all countries bordering the Mediterranean.

In the horticultural sector field trials are being carried out by the Department of Agriculture on seedlings of the bitter almond *Prunus amygdalus* for eventual selection as stock plants for peaches and plums The resistance of the local bitter almond to drought, alkaline soil and at the same time producing vigorous stock material, has been known to our farming community for many years.

Another tree, a local variety of a small pear called **Bambinella** is fortunately very popular and so has not been lost like the variety of small fruited strawberries reported to be extremely sweet.

These species indicate that although Malta is a small country, it offers a good scope for more research on its plants. Through its insularity plants have adapted themselves to the local Environment.

The farming community is out to make a living, hence cash returns and yields are the main target. Controlling weeds - as wild plants are labelled - is therefore of paramount importance to the farmers and growers. Hence not much attention is given to the local flora. Fortunately chemical weed control is not used all year round because of the dry climatic condition.

It is our opinion that the setting up of gene banks - whether locally or in conjunction with another country - is of the utmost importance.

CHAPTER 3
National Conservation Activities

With the setting up of an Environment Protection Secretariat headed by a Parliamentary Secretary, the spotlight on the national environment was switched on. The Structure Plan, which included studies on natural conservation, preservation and on our national resources and passed through Parliament in 1990, was an essential long awaited tool to regulate the explosion of infringements on the wanning countryside.

In Situ Conservation Activities

Malta has a number of nature reserves both coastal and inland. These are managed in various degrees of participation by Government departments and N.G.O.'s. An islet is listed as "no go" area by Government to safeguard marine life. A scope exists for research in this sphere.

Ex Situ Collections

A catalogue of national collections has been drawn up by a committee of the Malta Council for Science and Technology (M.C.S.T.). National collections including the Herbaria and those in the Natural History Museum are kept by Government bodies such as the University, Department of Agriculture and the Department of Museums. However, there is a substantial number of private collections which for obvious reasons is very difficult to asses and monitor.

Malta is in the process of having a Micropropagation Center which has just commenced functioning. Although the prime target is the propagation of fruit trees and fruit stock, propagation of other material of environmental and horticultural importance is also envisaged. The national tree *Tetraclinis articulata* is also a good candidate.

Plans to manage some collections in a better way have been submitted by the Malta Council for Science and Technology to Government. The first to be treated is the Herbaria collection. In fact a curator has been appointed by the University and afforded training in Kew gardens. Structural plans for housing the herbaria have been submitted to the local Planning Authority for review and approval. It is hoped that a seed storing facility will be included in this

project, as none are available to date. This facility could then be the linking point to other similar foreign centres for storing our genetic resources.
The records of our botanical collections are not computerised, hence one of the first jobs of the new curator would be exactly this operation. Up to the late 1980's very little importance was given by the Government to these treasures. Documentation through databases of the flora and fauna of our country are, on the other hand, well kept and updated by our University.

The forest genetic resources have hardly been tapped locally. Considering that our young woodlands are man made there was not much scope for studies except on a few specimens surviving in valleys. However, the opportunity is now presenting itself following five decades of re-afforestation work.

CHAPTER 4
In-Country Uses of Plant Genetic Resources

Malta does not have or feels capable financially to have a national plant breeding station. However, the Agriculture Department undertakes field trials on a regular basis for other stations and breeders. Foremost amongst these are the ware potato varieties. The export factor of spring potatoes by Malta to Holland is an annual economic proposition. Hence the trials are held both on Government stations and on farmers' fields.

Our river valleys, the last strips of land not heavily touched by man, are of great value because of the plant genetic resources they have. A study on the valleys which has been completed and is expected to go to print in 1996, has highlighted the need for better management of these valleys. This is important more than ever because of the introduction of local government in Malta. Expertise in the management of valleys is needed by local councils.

An innovative way of conducting graduate and post graduate research on a number of indigenous plants has developed in our University for the past three decades. Students of the pharmacy faculty leading for a baccalaureate in pharmacy have been choosing plants of medicinal and/or of aromatic value for their thesis. Although these dissertations are not the beginning and the end of research, they open up a whole spectrum of possibilities to the academic, to the business man and to the environmentalist. A register of these dissertations is kept by the University.

CHAPTER 5
National Goals, Policies, Programmes and Legislation

An inventory of plant life has been carried out by our University, with the active participation of other Government Departments and N.G.Os. Protection of the Natural Environment is now embodied in the Structural Plan legislation. The department for the Protection of the Environment works in liaison with the Agriculture Department and with the University. The new Environment Protection Act, absorbed other acts which fall under various ministries. For instance the Soil Preservation Act came under the Ministry of Agriculture whilst the Antiquities Act had its authority from the Ministry of Public Works. The plant quarantine legislation is being updated to conform with European standards. Malta is a signatory to C.I.T.E.S.

No national laws restrict the planting out of imported genetic resources on condition that they are of horticultural value. On the other hand our re-afforestation programmes has over the last decade given more importance to indigenous tree species by restricting exotic species to certain landscaping of urban areas.

No financial incentive is given to farmers for the conservation of traditional varieties but field trials and demonstrational plots on chosen species of special interest (e.g. the red clover *Hedysarum coronarium*, forage crop) are advertised to the farming community.

As from 1993 Malta has an Institute of Agriculture within the University, offering diploma and degree courses. This is complemented by an Agricultural college (on each island) and a school of Agriculture.

To date graduate and post graduate training of Government Agricultural staff is given mostly abroad through scholarships and bursaries.

Seminars, work shops and training sessions are held locally, regularly for the farming community, Foreign experts from international organizations like F.A.O. are brought in not only to update the agricultural sector but also to avoid the pitfall of "inbreeding" of ideas so common in a small country. Equality of the sexes is not only provided but fully implemented. None other than the agricultural sector has implemented this principle for many years.

CHAPTER 6
International Collaboration

Over the years our country has benefited from U.N.I.C.E.F. and F.A.O. projects.

As our country was among those that adopted the Agenda 21, it took steps to upgrade its legislation protecting the local flora and fauna, through the structural Plan The decision of including the propagation of non-horticultural crops in the proposed work schedule of the new Micropropagation Centre which has just commenced work, has been brought about by the awareness for the conservation of our biological diversity.

Since Malta is a member of F.A.O. and has benefitted from it, Malta is aware of the importance of this body and so we envisage our country both as a donor and as a beneficiary in a future plant genetic resources programme.

It is felt that our country could increase its activity in plant genetic work through the following:

- Both the University and the Department of Agriculture to be included in the C.G.I.A.R. database networks.
- Initiation of collaboration between Malta and a C.G.I.A.R. regional centre in the Mediterranean region, especially now that the Micropropagation Centre is functioning.
- Identify and conduct research programmes on crops which in the past proved to be important e.g.
  - The sulla / clover (as a forage to the ruminant)
  - The local fig varieties
  - Flower seed production e.g. *Antherrinum major* grows in the wild in very harsh conditions.

CHAPTER 7
National Needs

Malta needs close cooperation with a regional C.G.I.A.R. centre for a two-way exchange of knowledge, material and facilities. This is only possible if we are helped in identifying a suitable centre and formulating a plan of action.

The Maltese partners will probably be the University, the Department of Agriculture and the Department of Environment. Sharing of expenses with the C.G.I.A.R. regional centre would ensure interested collaboration.

CHAPTER 8
Proposals for a Global Plan of Action

- It is felt that commitments should be made by Governments to finance seed and germ plasm banks.
- Protective legislation must be formulated and enacted when needed or called for.
- At the International level regional collaboration between small states and between small states and neighbouring larger ones - at all levels i.e. Educational, Institutional and Research.
- A well orchestrated co-operation in research on Integrated Pest Management Systems which are more environmentally friendly, should be the target of a C.G.I.A.R centre to avoid duplication of work.