

National Gene Bank

The beginning of agriculture depended mainly on the domestication of wild species of plants and animals. Through breeding and selection man has been able to develop new races and varieties of farm crops, fodder and range plants. Techniques of plant and animal husbandry became important agricultural sciences, especially with the advent of the green revolution in the 1960s.

The introduction of new and improved varieties has led to neglecting the older ones (such as the cotton cultivars Ashmouni and Sakellaridis). This meant ignoring important genetic resources which should have been preserved and resorted to when the need for them in breeding programmes would arise. Close relatives of these neglected- species and varieties have remained in the wild state. They, too, harbor important genetic resources which should be preserved because of their potential as valuable components of breeding programmes.

The main objective of establishing a National Gene Bank is to preserve genetic resources of wild and domesticated varieties of plants and animals which would otherwise be lost beyond retrieval. The gene bank would be among the ex Situ mechanisms of biodiversity conservation. Its major functions include:

- a. collection of genetic resources of wild and economic varieties, with special emphasis on the wild relatives of crops and fodder plants, poultry and farm animals,
- b. short-term preservation of genetic resources in the laboratory (in vitro), in the fields of the gene bank (ex situ) and in their natural habitats (in situ),
- c. long-term preservation of genetic resources (i.e. storage) in seed banks, tissue cultures or the storage of embryos and gametes in special inert gases,
- d. Preservation of genetic resources of microorganisms using appropriate media and techniques for the various groups concerned.

Scientific activities in the gene bank include also studies and research in the technologies of conserving genetic resources, molecular genetics and providing other centers of plant and animal husbandry with genetic materials required for the production of improved races and cultivars. Modern technologies of genetic engineering have added new dimensions to the tasks of a gene bank such as prospecting for genes with special interest in different plants, animals and micro-organisms as well as the documentation of their genetic codes. The geographical range of the work of the gene bank might be extended to cover similar activities in the Middle East. Thus, this bank may have regional programmes of co-operation in the fields of surveying genetic resources, training, research and exchange of information.