

A Global Strategy

for the conservation and use
of Coconut Genetic Resources

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The Strategy aims to collect embryos and pollen from 100 to 200 coconut populations, the majority of which will be directly (and only) conserved as cryopreserved material.

3.5.4 Filling geographical gaps

As discussed in section 2.4.3, gap analysis is applied to map the actual distribution, agro-climatic preferences, and potential distribution of coconut. Geographic Information Systems (GIS) are used to analyse spatial distribution of different coconut populations. The degree of variability expected to be found in new collecting areas is another important consideration. Information on allelic diversity in the coconut populations could provide an important criterion to guide future collecting.

A first analysis was conducted by the COGENT secretariat at country level. Accessions conserved in *ex situ* genebanks comes from only 45 countries and territories of which 30 are COGENT member-countries. According to FAO, there are 92 coconut producing countries and territories (CPCT), so 47 (51%) are not yet represented in the germplasm conserved *ex situ*. The ratio between coconut planted area and the number of accessions conserved *ex situ* was calculated by region. On average, this ratio is 90 accessions per million hectares, and ranges from 64 (Africa) to 282 (Pacific Region). This first approach indicates some basic trends, but it needs to be refined by adding other criteria. Based on this single geographical criterion, the higher the ratio, the higher the range of geographical diversity represented in the *ex situ* collections.

This analysis was pursued using predicted area calculated from the maps produced by Ecoclimatic Niche Modelling. Prioritization of areas for collecting will not consider only sizes of predicted areas, but their isolation status (for example isolated valleys will be preferred). The ethno-biological literature and, when available, predicted allelic diversity will also be taken in account.

Based on the sole geographic criterion, some areas like Latin America, the Caribbean and Africa should benefit from more accessions' registration and preservation. The Strategy aims to collect 100 to 200 populations following the approach of filling geographical gaps.

3.6 Strengthening the distribution and the safe movement of germplasm

The introduction of new accessions is generally driven by a specific goal, e.g. germplasm tolerant to phytoplasma diseases in countries that suffer significant losses due to these diseases. Another objective can be to introduce germplasm with resistance to diseases that are not yet present in the country, so that resistance can be incorporated into breeding lines as a safeguard in case of the accidental entry of the disease. Furthermore, countries may wish to introduce germplasm from a particular genetic group that is under-represented in their national germplasm collections, such as for instance compact dwarfs, aiming at broadening the genetic base of these collections. Each country generally have its own policy.