

A Global Strategy

for the conservation and use
of Coconut Genetic Resources

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1.2 Global Strategy vision, goal, objectives, outputs and outcomes

1.2.1 Vision and goal

The Global Strategy for the Conservation and Use of Coconut Genetic Resources envisions all coconut farmers, consumers and other associated stakeholders significantly benefiting from a wider diversity of coconut varieties that fulfils their current and future needs. Comprehensively conserved coconut diversity will be readily accessible while respecting countries' and farmers' rights. It envisions substantial improvements to the resilience, livelihoods, food security and wealth status of more than 11 million farmers in developing countries across Asia, the Pacific region, Africa, and Latin America and the Caribbean, and of the many more million people who depend upon coconut for their livelihoods.

The overall goal of the Strategy is to optimize the conservation and facilitate the use of coconut genetic resources, as the foundation of a sustainable coconut economy (from farmers, through research, to consumers) by bringing together national and international players in both public and private sectors.

The Strategy promotes the rationalization of conservation efforts at national, regional and global levels through encouraging partnerships and sharing facilities and tasks.

The Strategy is intended to be used as a roadmap towards building a more efficient and effective global system that focuses mainly on the needs of small-scale coconut producers. The Strategy aims to be an important guiding document for donors, international and national research organizations and the private sector. It will thus facilitate raising support by identifying funding priorities to ensure comprehensively conserved, readily available and optimally used improved coconut genetic diversity worldwide.

1.2.2 Objectives

The SMARTER (Specific, Measurable, Achievable, Realistic, Timebound, Evaluable and Re-evaluable [Yemm 2013]) objectives of the Strategy must be simple, comprehensive and limited in number. Thus the Strategy focuses on seven main objectives:

1. **Strengthen** local, national and international **commitment** to identify, collect, conserve, document and better utilize coconut genetic resources;
2. **Ensure** the sustainable, long-term, efficient and effective **conservation of *ex situ*** coconut genetic resources;
3. Assess the global range of coconut genetic diversity, identify critical gaps in existing *ex situ* collections, **prioritize and build up missions** aiming both to **collect germplasm** and to **secure local conservation**;
4. **Promote**, strengthen and consolidate ***in situ* and on farm conservation of landraces** and dissemination by **local** stakeholders of high quality **planting**

- material** in a sustainable and equitable manner appropriately integrating gender consideration;
5. **Develop** the policies, mechanisms, skills, knowledge, capacity and other resources required for effective, efficient, safe and easier **international germplasm movements**;
 6. Strengthen the use of the coconut genetic resources by **enhancing characterization and evaluation of germplasm**, by dissemination of breeding results as well as **marketing of improved varieties**. This will include exploring the potential use of molecular tools and genomics information for pre-breeding, and establish links between breeding programmes;
 7. **Reinforce COGENT** as a sustainable, powerful and effective platform for the **collaborative** conception, coordination and implementation of **priority projects** in the field of coconut genetic resources conservation, improvement and use.

These seven objectives are fully articulated in the third chapter this Strategy. The second chapter aims to provide a global analysis of present status of coconut genetic resources conservation and use. The third chapter focuses on prioritizing the actions and research needed to effectively secure coconut diversity and enhance its use.

1.2.3 Outputs

The expected outputs of the Strategy are the following:

- **Output 1:** the coconut gene pool is comprehensively and sustainably conserved *in situ* and *ex situ* for the long term by a global network of partners maintaining the representative diversity of coconut genetic resources;
- **Output 2:** the use of coconut genetic diversity is comprehensively documented, valued and strengthened;
- **Output 3:** an efficient global system for the safe and effective exchange of coconut germplasm is created;
- **Output 4:** the sustainability and effectiveness of global efforts to conserve and use coconut genetic resources is assured.

1.2.4 Expected outcomes

As articulated above, the key outcome of the Strategy will be many coconut farmers, consumers and other stakeholders significantly benefiting from a wider diversity of coconut varieties that responds to their current and future needs. There will be substantial improvements to the resilience, livelihoods, food security and wealth status of millions in developing countries across Asia, the Pacific region, Latin America and the Caribbean, and Africa who produce and depend upon coconut for their livelihoods.



Applying fertilizers in a coconut plantation in Côte d'Ivoire. (R. Bourdeix, CIRAD)

Effectively conserved coconut germplasm will also allow for more effective climate change mitigation in coastal areas, reducing the vulnerability of coconut communities.

Outcomes are associated with changes in behaviour. It is expected that the implementation of a communication strategy will increase commitment to conserve, use and enjoy coconut genetic resources. There will be more effective national and international collaboration in both

public and private sectors. This will partly be brought about by reviewing and optimizing partnerships in a more actor-oriented approach, to clearly understand roles and responsibilities of all stakeholders involved in further developing and implementing the Strategy.

The Strategy will guide donors, international and national research organizations and the private sector. It will thus facilitate raising support by identifying funding priorities to ensure comprehensively conserved, readily available and optimally used improved coconut genetic diversity worldwide.

1.2.5 Link with outcomes of CGIAR research programs

The revision and development of this Strategy was funded by CGIAR together with a significant contribution of researchers' time from COGENT member countries and CIRAD staff. CGIAR gathers 15 research centres which are independent, non-profit research organizations. These centres are home to almost 10,000 scientists, researchers, technicians, and staff. Only one CGIAR centre is presently involved in coconut research. Bioversity International hosts the COGENT secretariat, although due to funding cuts, hosting alternatives are being considered.

Since early 2011, CGIAR has been developing and begun implementing 16 global agricultural research programs (CRPs). In January 2017 the CGIAR Centres and their partners began implementing phase 2 of a rationalized CRP portfolio including seven Agri-Food Systems research programs²⁶; four cross-cutting Global Integrating Programs²⁷ and three research support platforms²⁸.

²⁶ i) Fish; ii) Forests, Trees and Agroforestry; iii) Livestock; iv) Maize; v) Rice; vi) Roots, Tubers and Bananas; and vii) Wheat;

²⁷ i) Agriculture for Nutrition and Health; ii) Climate Change, Agriculture and Food Security; iii) Policies, Institutions, and Markets; and iv) Water, Land and Ecosystems;

²⁸ i) Platform for Big Data in Agriculture; ii) Excellence in Breeding Platform; iii) Genebank Platform

As one of the retained CRPs, “Forest, Trees and Agroforestry” (FTA) aims to enhance the management and use of forests, agroforestry and tree genetic resources across the landscape, from farms to forests. Coconut research is included in its portfolio²⁹ and implementing this Strategy should fall within its *Flagship 1: Tree genetic resources to bridge production gaps and promote resilience*. Clearly COGENT would benefit from increased FTA support in implementing its Strategy.

The CGIAR has adopted a strategy and results framework (SRF)³⁰ which outlines three system-level outcomes (SLOs):

1. reduction in rural poverty;
2. increase in food and nutrition security;
3. more sustainable management of natural resources.

To support achieving these SLOs, a new results-based management (RBM) strategy will be implemented. Each CRP has articulated an impact pathway arising from its research activities via intermediate development outcomes (IDOs) to impact at scale. CGIAR has established several IDOs related to improvements in: productivity; food security; nutrition; income; gender equity and empowerment; capacity to innovate; adaptive capacity; policies ; environment; future options (for ecosystem services); and climate change mitigation. Each CRP has then identified those IDOs relevant to its research. CRP-FTA had identified the following IDOs relevant to its work programme:

1. Policies supporting improved livelihoods and sustainable and equitable resource management adopted;
2. Greater gender equity and women’s empowerment in decision-making and control over forest, tree and agroforestry resource use;
3. Enhanced income from goods and services derived from forestry and agroforestry systems;
4. Increased and stable access to nutritious food by rural and urban poor;
5. Production of wood, food, fuel and other products from forestry and agroforestry systems increased;
6. Biodiversity and ecosystem services (including carbon sequestration) from forests, trees and agroforestry resources conserved or improved.

Implementing the Strategy could contribute to all of the above IDOs, although principally 3, 5 and possibly 6.

All coconut research activities are presently conducted under the CRP-FTA, although parts of coconut research conducted by COGENT country-members could be of great interest to other FTA flagships 2-5, operating further along the coconut value chains, and other CRPs/research support platforms, such as:

²⁹See URL: <http://foresttreesagroforestry.org/about-us/>

³⁰ See URL: <http://www.cgiar.org/our-strategy/>

- Managing and Sustaining Crop Collections (the 'Genebanks CRP');
- Excellence in Breeding;
- Water, Land and Ecosystems;
- Climate Change, Agriculture and Food Security.

This Strategy document also describes how links between coconut research, CRP-FTA and the other abovementioned CRPs and research platforms could be strengthened.

This Strategy also aligns with Bioversity International's delivery of scientific evidence, management practices and policy options to use and safeguard agricultural and tree biodiversity to attain sustainable global food and nutrition security. The scope of this Strategy falls within Bioversity's research initiative *Effective genetic resources conservation and use*.

1.3 Process for developing the Global Strategy

This Strategy is the result of a long process of consultations involving more than 100 genetic resource specialists, crop researchers and other coconut stakeholders. The Strategy was developed as a specific output for the CRP-FTA under the coordination of COGENT. The first draft document was progressively built on:

- the former Coconut Global Strategy published in 2008 and the Cocoa Strategy published in 2012 by CacaoNet and Bioversity International;
- the four international surveys targeting COGENT country-members; two of which conducted in 2012 prior to the 16th Steering Committee, the third held from May to August 2013, and the last one held from December 2014 to January 2015;
- the ten international recommendations emitted in 2012 by the COGENT Steering Committee³¹;
- the numerous interviews conducted from 2011 to 2013 during visits of the COGENT secretariat to ten countries - namely Brazil, Côte d'Ivoire, Fiji, Italy (donors), Malaysia, India, Indonesia, Papua New Guinea, Samoa and Sri Lanka;
- the participation of the COGENT coordinator to the ACIAR meeting on Coconut Research and Development held in Samoa in November 2012;
- the recommendations arising from the APCC ministerial meeting held in Fiji in January 2013;
- meetings with Bioversity International and CIRAD researchers in March 2012;
- the available scientific documentation.

A new outline for the Strategy was drafted using inputs from the above consultations and the Cocoa Strategy. Based on this proposed outline, coconut scientists and

³¹ Available at the URL: <http://www.cogentnetwork.org/53-news/149-10-rec-2012>