

# ICG - AIO APPRAISAL

## BACKGROUND

The Republic of Côte d'Ivoire is a country in West Africa with an area of 322,462 km<sup>2</sup>. Côte d'Ivoire borders Liberia and Guinea to the west, Mali and Burkina Faso to the north, Ghana to the east, and the Gulf of Guinea and the Atlantic Ocean to the south. The Marc Delorme coconut research station was founded in 1949 by the Institut de Recherches sur les Huiles et Oléagineux (IRHO), one of the research institutes now merged into CIRAD. Today, the station is part of a research facility belonging to the Ivorian Centre National de Recherche Agronomique (CNRA). It took this name after Marc Delorme, the sixth Director was killed in an accident (Bourdeix et al. 2005). The Memorandum of Agreement for the establishment of the International Coconut Genebank for Africa and Indian Ocean (ICG-AIO) was signed in October 1999 by the Government of Côte d'Ivoire, IPGRI<sup>1</sup> on behalf of COGENT and FAO as trustee. At the time of signing the MOA, the coconut genebank of the Marc Delorme Coconut Research Station was converted into the ICG-AIO. To date, ICG-AIO has a total of 127 accessions. It is located around 30 km from the centre of Abidjan, not far from the airport, on the edge of the lagoon. It is pleasant and easy to reach. Its guesthouse regularly houses students, trainees and researchers. It has four laboratories conducting research on the different aspects of coconut growing: agronomy, crop protection, breeding and technology. Its experimental plantations occupy an area of more than 1000 hectares. By virtue of its germplasm collection, the Marc Delorme station has been able to satisfy the requests of numerous countries. Many partners, including India, Sri Lanka, Indonesia, Malaysia, China, Brazil and Costa Rica have received seednuts from coconut palms conserved in Côte d'Ivoire. One of the most recent operations consisted in planting performance trials involving a large number of varieties in Brazil, Benin, Ghana, Jamaica, Mexico, Mozambique and Tanzania. These experiments are designed to identify sources of resistance to a serious disease, Lethal Yellowing, which is killing many coconut palms in some of those countries. In 2018, COGENT learned that the Ivorian Government had made agreements to sell the land housing the collection property developers. In 2018-2019, Cirad was commissioned by the Ivorian government to undertake a feasibility study to transfer the collection to a new site at Divo 200Km to the northwest. Transfer costs were estimated at several million US dollars, over a recommended period of 8 years to allow for effective controlled hand pollination and rejuvenation. Since then no further development has been reported and the collection remains at Marc Delorme. In 2019 the longstanding sélectionneur resigned and was replaced by Dr Tra Serge Doubi.



Figure 1: West African Tall Mensah (WAT04)

## OBJECTIVES

COGENT conducted the appraisal with the following mission as supported by the Australian Centre for International Agricultural Research (ACIAR), and the Australian Department for Foreign Affairs and Trade (DFAT) under the ACIAR Hort GP/2018/193 PROJECT: *Supporting an international initiative to maintain COGENT*

- 1) to assess the hosting agreement status;
- 2) to evaluate the management effectiveness;
- 3) to determine the specific roles, services and use, and linkages with users and other stakeholders;
- 4) to appraise of the performance targets and work plans; and

---

<sup>1</sup> the International Plant genetic Resources Institute, which became Bioversity International, the CGIAR-host of COGENT. Network hosting was transferred to the International Coconut Community (ICC) in 2018

- 5) to ascertain the collection status within the global context.

## APPRAISAL PROCESS

As one of the ICGs as repository of the accessions representing one of the five resource-constrained international coconut field genebanks (ICGs) and 19 national coconut genebanks (NCGs) across the world, generally these ICGs don't operate according to minimum required germplasm management standards. The 1<sup>st</sup> CG appraisal finalized in October 2020 for ICG for South Pacific (ICG-SP) in Papua New Guinea (PNG). 2<sup>nd</sup> ICG appraisal, for ICG for Africa and Indian Ocean (ICG-AIO), just concluded. There is a need to assimilating appraisal information on status (Where we are now?) and to prepare plans for the future (Where do we go?), including recommendations, and especially involvement in building a genebank sustainability/ business plan, including biosecurity planning, and harnessing opportunities generate self-sustaining income.

## TECHNICAL OBSERVATIONS

### 1. Status of the ICG-AIO

At present, ICG-AIO is even more globally viable and relevant. It contains the second largest range of coconut diversity globally and, during the past 50 years, was the most active genebank for providing germplasm at international level. This genebank represents more than 60 years of conservation work considered as a priceless genetic treasure collection. Within the 149 registered accessions, it contains critically important accessions needed to improve global food and nutrition security, livelihoods, productivity, climate resilience (e.g. typhoons and drought), pest and disease resistance/ tolerance and quality traits (such as oil and water profiles). It will continue support international breeding programmes to respond to changing needs, including multi-million-dollar global markets for coconut as a valued functional food to improve diets and health (including responses to Covid-19, and the expanding Virgin Coconut Oil and water markets. However, lack of resources to adequately support the collection will definitely mean that the collection is badly degraded, especially in terms of needed some lab infrastructure, equipment (especially IT), germplasm data management, capacity building, some accessions regenerations and soil fertility. For the first step the genebank collection will be enclosed with secured fencing.

Not well-managed, parcels of up to 80 ha hired out to farmer concessionaires, several of whom do not fertilize or manually weed the parcels... many parcels seriously degraded. Owned by Ivorian Government, who have agreed some property development concessions. Germplasm collections were introduced from 21 countries and territories in 1960s-1980s, little donated due to LYD threat but, some were sent to Sri Lanka in 2006.

### 2) Pest and Disease Observations

Although LYD is not present on the collection, there is routine surveillance for LYD but no report presented. There should be a need for especial attention to LYD to overcome the constraint and threat posed on sharing germplasm by the evolution of LYD in the country since this was recorded in other parts of Cote d'Ivoire; There is also the need for the regular monitoring for other pests and diseases.

### **3) Germplasm Exchange**

Upgrading of the ICG-AIO will allow entry into the Multilateral Exchange System and generate possible added donor support/ commitment.

### **4) Database Management**

CDM software is available and functional on the station. not used by researchers. no user manual for this software. No training on the use of the software.

### **5) Maintenance and Research Support**

CNRA provides US\$3.5K per month from central funds, for maintenance sourced from hybrid nut sales plowed back to the ICG funds. Research funds provided for genomics and grant from the UK Royal Society and funds from FIRCA and from IAEA for hybridization and LYD studies. However, support from CNRA laboratories is available, but, below standard.

### **6) Policies and Agreements**

Not compliant with MTA and need to sign new agreement and the ICG collections still threatened by the government's development plans.

## RECOMMENDATIONS

- 1) To sustain and enhance the management of the ICG-AIO considering the wide array of accessions collected for decades being the oldest ICG established by COGENT but should be in accordance with the agreements in the MoU.
- 2) To guarantee that the collection can remain at current site based on the following grounds:
  - the three parties do not have the means to transfer the collection
  - it will be more cost-effective and technically logical if it stays in current location.;
  - the International Coconut Community (ICC) will not fund the transfer as this situation since it is not an international emergency (result of a decision from the Ivorian Government... so only specific tasks could be funded such as supporting duplicating the few priority accessions.
  - the Cdl government signs the amended Article 15 agreement as soon as FAO endorses the final draft, and when new structures are in place.
- 3) Discussing the current request for CIV to join International Coconut Community (ICC). Membership will allow:
  - access to useful coconut information
  - capacity building opportunities
  - networking opportunities
  - new market links
  - enable members to participate in policy decisions for the global coconut industry during the annual Ministerial meeting, (participation by the Minister of Agriculture)
  - access to technical assistance
  - greater access to international funding



