



The International Coconut Genetic Resources Network

COGENT COORDINATOR'S REPORT

Summary of Cogent Activities in 2008

I. Our Accomplishments: Conservation and Use of Coconut Genetic Resources

A. Conservation

ICG-LAC

1. We increased the coconut germplasm collection in the ICG-LAC (Brazil). The ICG-LAC team of CPATC (Genebank manager Semiramis Ramos and Tissue culture specialist Ana Ledo) obtained embryos of 12 Dwarf accessions from the ICG-AIO in Cote d'Ivoire. These embryos are currently being cultured at the CPATC tissue culture laboratory in Aracaju. This was the first large scale (>2000 embryos) transfer that is showing promising results, and we are expecting that a viable number of seedlings (at least 45) per accession will reach the field in 2009. The story of this activity will be featured in the 2008 Annual Report of Bioversity.
2. The ICG-LAC team also collected three local Tall accessions. The seednuts are currently in the nursery and we expect the seedlings to reach the field genebank also this year.
3. For 2009, the ICG-LAC team's workplan includes the regeneration of ageing germplasm from the Betume genebank to the ICG-LAC in Itaporanga. The Betume site is no longer viable, as it may soon be sold to a new owner.
4. Our colleague, Dr. Evandro Tupinamba, had retired and Dr. Semiramis Ramos took over as the ICG-LAC manager. We thank Tupi for his service to the coconut community and wish him the best, and we welcome Semiramis to COGENT. Our work to develop the ICG-LAC is supported by the Government of Brazil.
5. The next steps for the ICG-LAC project are to:
 - prepare at least one publication from the embryo culture experience
 - prepare next-phase proposal for the enhancement of ICG-LAC (especially to develop the genebank information system) and networking in Latin America and the Caribbean, for submission to the Government of Brazil

Cryopreservation and Coconut Cryobank

6. After consultation with you, we submitted proposal entitled *a global cryobank for coconut: Ensuring effective conservation of important diversity for the long term* to the Government of Korea. The decision by Korea is still pending, and due to the global economic crisis, it is likely

that funding may be difficult. But we should pursue the idea of going to other non-traditional donors, such as oil-rich countries who are keen to contribute a global public good to the coconut community.

Coconut Virtual Collection

7. As part of the global conservation strategy of coconut (discussed in the 2007 ICG meeting), the concept of the coconut virtual collection was advanced as a way to integrate and rationalize the regional and national genebank collections. We have contracted a study to define the criteria (e.g. uniqueness, viability, etc) for inclusion in the virtual collection, and this will be a subject for discussion in the genebank managers' meeting in late 2009.

B. Germplasm regeneration

8. We (Konan, Bourdeix and George) contributed to the Trust-supported compilation of the 21 crop-specific regeneration guidelines that is spearheaded by Bioversity (Guidelines for the Regeneration of Coconut). This publication has been completed and the CD-ROM now in production. The guidelines are also available on the Crop Genebank Knowledge Base website at <http://cropgenebank.sgrp.cgiar.org>.
9. The Trust-funded regeneration of 50 ageing accessions at the ICG-AIO is continuing and is now at the stage of planting the seedlings in the field. It is a challenging task in terms of cost (land, labor, logistics). The Trust supported the first three years of the project and CNRA, the last two. We arranged two technical reviews of the project in 2008.
10. The next steps are to gather the necessary information about the cost of genebank operations and do foundational work to position us to submit a proposal for long-term support for the genebank. As a first step, we have an ongoing study to estimate the cost of maintaining the PCA-Zamboanga Research Station genebank, this information will give us more realistic estimates for budgeting purposes. The study will be finished this year.

Safe movement of germplasm

11. We prepared a proposal which the Trust agreed to fund as three separate grants
 - Grant#1 to Bioversity: embryo culture research and training workshop,
 - Grant#2 to ICG0AIO (Cote d'Ivoire): purchase of seednuts of at-risk accessions for transfer to other genebanks
 - Grant #3 to Bioversity: further optimization and validation of the embryo culture protocol
12. We completed the first grant successfully in December 2008. We conducted a training and research workshop at the PCA-Zamboanga Research Centre with 20 participants. These included 10 tissue culture specialists, five genebank managers (Brazil, Cote d'Ivoire, Fiji, India, Indonesia, Papua New Guinea and Sri Lanka in addition to the Philippines), and resource persons from eight countries. Dr. Carpio kindly gave the welcome address on behalf of the SC. The last part of the workshop was a consultation and planning for the third grant, which is the further optimization and application of embryo culture to collect the embryos from Cote d'Ivoire and bring them to other genebanks.
13. The main output of the workshop was a compilation of the protocols that are being used in various laboratories, an understanding of the reasons for successes and failure in the past, and recommended steps on how to overcome the technique's weaknesses. Other outputs are:
 - a proceedings book (in preparation)
 - a new accession of a local Tall variety (Tutupaen), currently in the PCA-ZRC tissue culture laboratory. This was collected by the PCA team to show the application of the technique in field collection as part of the workshop
 - a video of the embryo culture technique produced by the PCA-ZRC team

- at least two publications. We submitted an abstract entitled Application of Coconut Embryo Culture Technique: Field Collection of the Variety Tutupaen Tall for presentation at the Federation of Crop Science Society of the Philippines conference in May 2009.
14. The next step is to consolidate the country proposals for receiving germplasm into a single one (as grant #3) for submission by Bioversity to the Trust. Based on the timetable of grant #2, the seednuts should be ready for collection late this year or early next year and this would mark the beginning of grant #3.

Germplasm Characterization

15. We completed the characterization (minimum descriptors) of the parents of the regenerated accessions at the ICG-AIO with funds from the Trust regeneration project. The work was done with the collaboration of Dr. Roland Bourdeix and the Cote d'Ivoire team of Dr. Konan. The data were inputted in the new online tool (based on the Musa Germplasm Information System) which was developed by the Commodities for Livelihoods program.
16. The next step is to organize a small workshop of genebank managers who have generated data on the minimum set of descriptors on their viable accessions, in late 2009.
17. We engaged a consultant to compile the COGENT microsatellite protocol for coconut and merge available coconut microsatellite data into a CD. This will enable anyone using the same SSR protocol, markers, and controls to merge their data with the global dataset and gain additional knowledge on the genetic relationship of their accessions with others in the global dataset.

Germplasm Evaluation

18. We prepared a multi-country proposal for the evaluation of accessions from seven genebanks for resistance or tolerance to biotic and abiotic stresses. The proposal was well received by the Trust, and they requested us to revise the proposal to accommodate a smaller budget and to involve only two countries. This project will involve the evaluation of already existing palms in the genebanks (viable accessions only) by measuring drought tolerance-associated traits whose cumulative effects contribute to the adaptation to drought tolerance, such as anatomical features like leaf thickness, cuticle thickness, size of hypodermal cells, etc. These data will be analyzed with the documented yield performance and climatic (rainfall) data through the years.

Sustainable livelihoods (Poverty reduction research)

19. We successfully completed the IFAD-funded project entitled *Overcoming Poverty in Coconut-growing Communities: Coconut Genetic Resources for Sustainable Livelihoods*, a project that involved the development and testing income-generating strategies for improving income, food security and nutrition status of farming households. This year, we accomplished the following:
- Conducted a data analysis workshop and project completion meeting in May 2008 in the Philippines (20 participants from 10 countries)
 - Compiled the socio-economic, food security and nutrition data from 10 countries, stored the data in the COGENT website and made the dataset to all project partners
 - Produced 4 policy briefs on the interventions in the COGENT 4-pronged strategy for poverty reduction and disseminated them to the project collaborating agencies and all contacts of the 38 COGENT member countries
 - Prepared and submitted the project completion report to the Donor.
 - Produced video documentation of livelihood interventions implemented in their participating project countries

20. One project on sustainable livelihoods, supported by the Government of the Philippines through the Bureau of Agricultural Research, is on-going. The Philippines is a prime example of the mainstreaming of the COGENT sustainable livelihoods approach, as new sites continue to be established with national support.

Publications

21. We have the following pending publications, which remain pending due to time and personnel constraints, :
- Catalog of conserved coconut varieties (we have made substantial progress on this and our target deadline is May 2009).
 - Coconut recipes (optimistic target is August 2009)
 - Catalogue of high value products (optimistic target is August 2009)

Funding Opportunities

22. We currently have these opportunities, however, since Bioversity has to submit the proposal, some institutional issues need to be resolved before we can know how to proceed to secure these:

For proposal development

- Phase 2 Poverty Reduction Research (IFAD, \$1.4 M, 3 years)
 - Optimization and Validation of the Embryo Culture Protocol (Trust, \$320K, 2 years)
 - Evaluation of Drought-Related Traits (Trust, \$50K, 2 years)
 - Coconut micropropagation (Malaysia contribution to the CGIAR, amount not known yet)
- Awaiting decision by donor
- Coconut cryopreservation (Korea, 500K for 5 years)

II. COGENT

Steering Committee

23. During the SC meeting in the Philippines in Dec 2007, we agreed to hold a meeting as a side event during the 2008 COCOTECH conference in Bogor with Bioversity and APCC support. Dr. Arancon committed to request the APCC member countries so that SC members will be included in the country delegations. Dr. Chitra and Dr. Carpio were invited but the rest were not and our 2008 budget from Bioversity was not enough to cover the needed amount. I, myself, could not participate due to budget constraints, among other reasons.

COGENT Membership

24. French Polynesia initiated but did not complete their application for membership in COGENT. In the 2007 SC meeting, the decision was that COGENT remains a network of coconut-growing countries. However, the option to offer associate or honorary membership to non-growing but donor countries was kept open. This would be relevant, and will be tabled for discussion by the SC in the event that Korea responds positively to the cryopreservation proposal.

III. Bioversity

Changes in Bioversity

25. Coconut is one of three commodity crops in Bioversity's current agenda, and is located in the Commodities for Livelihoods Programme based in Montpellier, France. In Bioversity's Medium Term Plan for 2008, genetic resources work (conservation) was embedded in the Project F04 and sustainable livelihoods (poverty reduction research) work in the Project F03.

Dr. Richard Markham resigned as the Director of the Commodities for Livelihoods Program of Bioversity in November 2008. Since then and to the present time, Dr. Jan Engels, who is based in Rome, has been the Acting Director while the Programme continues to be based in Montpellier. The new Director of the Programme is expected to be on board in June 2009.

26. Currently, the COGENT secretariat, Bioversity's support to the Network, consists of the COGENT Coordinator and ½ Program Assistant.
27. Bioversity as a CGIAR centre is currently undergoing a 5-year External Program and Management Review. One of the panel members, Dr. Richard Hannan visited the IFAD project site in the Philippines in March 2009 to learn about the work we are doing, and specifically, to assess the role of Bioversity. The EPMR panel will release the results of their review in June 2009.

Changes in the CGIAR

28. The Consultative Group on International Agricultural Research (CGIAR) is undergoing a change process, guided by a new vision and new strategic objectives. How Bioversity's agenda will be integrated into the new CGIAR is not yet clear, but it is realistic to expect that this change will affect COGENT. The role of the SC in steering the network towards sustainability and relevance is critically important during these times. The new CGIAR is expected to be fully operational in May 2010.