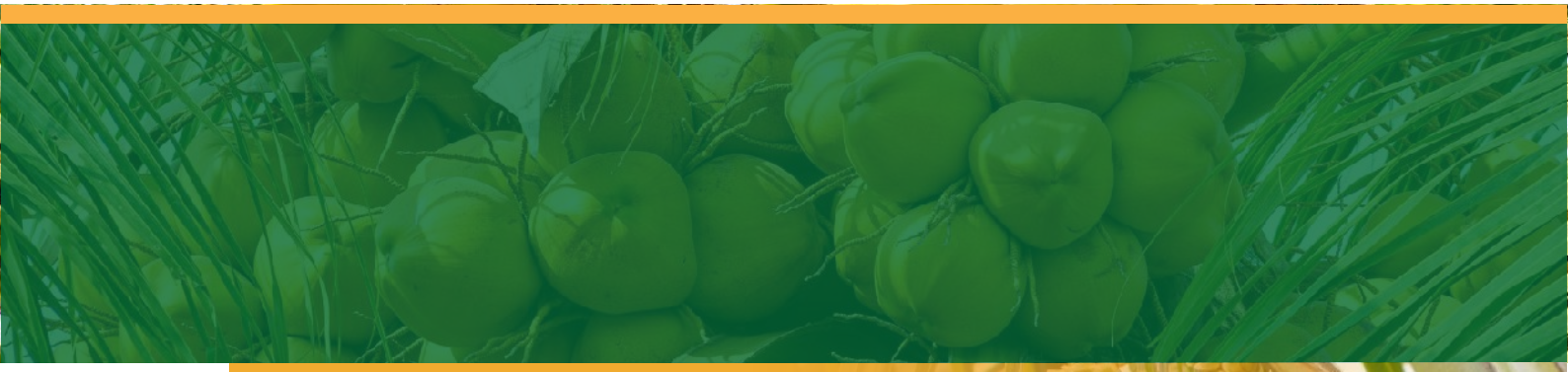
COGENT

Newsletter | Issue 2021



PREFACE
COGENT 2020-2021

In this second COGENT newsletter, we remind readers of COGENT's mandate to **re-enforce international collaboration for conserving and using coconut genetic resources**, ultimately improving sustainable coconut production, as laid out in its *Global Strategy for the Conservation and Use of Coconut Genetic Resources* (The *Global Strategy* hereafter)[1] published in 2018. Coconut is recognized as a functional food and climate-resilient livelihood crop. As a key component of sustainable food and other production systems, coconut is increasingly relevant in boosting environmental and climate resilience, rural livelihoods, and global dietary health.

Over 2020-2021, COGENT has continued its outreach, to heighten visibility. Each section of the newsletter articulates different elements of how COGENT is helping to add value to national and international coconut value chains through:

1. Overall ACIAR-grant activities.
2. More effective International Coconut Genebanks (ICGs): improving the **multilateral system** for exchanging coconut germplasm. This will allow easier, more affordable access to the coconut diversity needed to develop early-bearing, productive genotypes that also offer the added value of high-value production and tolerance to priority abiotic and biotic stresses.
3. Dynamic International Thematic Action Groups **(ITAGs)**: developing a coherent set of research projects that address the highest priorities in effective coconut genetic resources conservation, breeding, genomics, and safe and healthy germplasm movement and sources of clean, cheap planting material.
4. A more dynamic and dedicated **COGENT coordination**: ensuring that COGENT has lift-off and leverage, with a Roadmap in place for its sustained future. A **new Coordinator** will start in October 2021.
5. Strengthening **collaboration**: ensuring that more locally relevant, regionally and globally coordinated efforts for conservation and use of coconut genetic resources have greater impact on coconut-dependent livelihoods and communities. Going forwards this will include developing a coherent **partnership strategy**, as part of resource mobilisation, strategy implementation and the COGENT Roadmap.
6. An active **Steering Committee** that provides timely and effective policy and technical oversight. An SC meeting is scheduled for October 2021.
7. A full calendar of events that assist COGENT in carrying out its mandate.
8. An up-to-date website and other **communications** tools that promote greater visibility and information transfer for COGENT, also articulated within a **communications strategy**.

Jelfina C. Alouw (Executive Director, ICC)
& Vincent Johnson (COGENT Coordinator)

1 https://www.bioversityinternational.org/fileadmin/user_upload/Cogent_bourdeix_2017-new.pdf

ACIAR-GRANT PROGRESS SUMMARY

The ACIAR-DFAT grant 'Supporting an international initiative to maintain the international coconut genetic resources network (COGENT)' has four key objectives as follows:

1. Effecting a smooth transfer of the COGENT Secretariat from (ex-) Bioversity International to the International Coconut Community (ICC).
2. Establishing technical support necessary for implementing COGENT's Global Strategy.
3. Completing the International Coconut Genebanks' (ICGs') appraisals and establishing support for capacity upgrades.
4. Developing and begin implementing an ICG and COGENT sustainability plan.

Despite the ongoing Covid-19 pandemic, during the reporting period, considerable progress has been made towards achieving all four objectives as follows:

Section 2 of the newsletter highlights the ICG appraisals. Extensive interactions have occurred with two of the five ICGs, including an appraisal visit to the ICG for Africa and the Indian Ocean (AIO) in Côte d'Ivoire, in January 2021,and pre-appraisal virtual exchanges with the ICG for South East Asia (SEA) Indonesia March to June 2021. The ICG-SEA appraisal visit scheduled for September 2021 has been postponed until early 2022, pending the Covid-19 situation, but the ICG team is now compiling documents and data needed for the assessment.

The first two ICG appraisals confirm what we already know that much coconut germplasm is greatly underused and at risk. They also highlight the following main threats: i) constraining social dynamics, and a concomitant low-level of commitment to effective conservation; ii) emerging diseases (esp. LYD) and pests; iii) climate change and extremes; iii) severe financial constraints, accompanied by little or no sustainability planning; iv) a lack of technical and other capacity, infrastructure, funding, human resources and, equipment; v) incomplete rejuvenation, backup and new accessions; vi) poor overall management; vi) very many senile, unproductive palms; vii) weak germplasm data management; viii) a lack of harmonised standard operating procedures; and ix) weak biosecurity.

Section 3 details International Thematic Action Group (ITAG) activities and status. The team has continued to flesh out the four ITAGs, in terms of leadership, membership and interactions This includes developing a set of research projects that address the highest priorities in effective coconut genetic resources conservation, breeding, genomics,

and safe and healthy germplasm movement and sources of clean, cheap planting material, including submitting six proposals during the reporting period.

Section 4 outlines the recruitment process for a new COGENT coordinator. As candidates for coordinator were discouraged by the ever-changing Covid-19 pandemic, Vincent Johnson continued in his role as the interim COGENT coordinator during the reporting period. The recruitment drive for a COGENT coordinator was renewed, and Erlene Manohar, the outgoing Deputy Administrator of the Philippines Coconut Authority (PCA) has assumed the position from 4 October 2021 to help ensure that COGENT has some lift-off and leverage, with a Roadmap in place for its sustained future.

COGENT has continued its outreach to heighten visibility as described in section 5, with the team continuing to strengthen collaborative links, ensuring that more locally relevant, regionally and globally coordinated efforts for conservation and use of coconut genetic resources have greater impact on coconut-dependent livelihoods and communities. Going forwards this will include developing a coherent partnership strategy, as part of resource mobilization, strategy implementation and the COGENT Roadmap (see section 8). Outreach includes having worked more closely with ICC, drafting this second newsletter and completing website migration to promote greater visibility and information transfer for COGENT. A COGENT communications strategy will be developed as part of the above-mentioned roadmap, in line with ICC policy. In interacting with ICC, we have secured a 30,000 Euro grant to build capacity for producing high-value coconut products for Caribbean stakeholders as a part of an International Trade Centre EU-funded programme. The spin-off for COGENT is strengthened collaboration and opening avenues for more concerted LAC regional conservation.

ASSESSING THE STATE OF THE WORLD'S COCONUT GENETIC RESOURCES

The world's 5 international and 19 national coconut collections currently conserve a comprehensive coconut diversity of around 420 genotypes, in more than 1 000 distinct accessions. More than 730 of these are held in the international coconut genebanks (ICGs), and we need to better understand their current status. Within the last year COGENT has continued its work **assessing the status of these five ICGs**, visiting the collection for Africa and the Indian Ocean (ICG-AIO) in Côte d'Ivoire, and requesting pre-visit information from the south-east Asian collection (ICG-SEA) in Indonesia. This is in addition to an assessment of the South Pacific collection (ICG-SP) made in late 2019. Due to the Covid-19 pandemic, assessment visits to the remaining three ICGs have been re-scheduled: Indonesia in January 2022; India in April 2022 and Brazil in May 2022. COGENT's additional on-line survey of the national collections' status will be completed within the next 6-9 months.

Coconut breeders, researchers, producers and processors are already aware of the increasing global supply shortfall, and that germplasm held in the genebanks is greatly underused and at risk. Our emerging findings highlight previously identified, or suspected threats, and outline some new challenges. Together these include:

1. A need to improve overall genebank management, especially with regard to: i) implementing globally-harmonized **standard operating procedures** (SOPS); ii) more effective germplasm data management, including viable germplasm data-sharing agreements that address intellectual property concerns; iii) stronger biosecurity planning, linked to national biosecurity plans, and iv) genebank sustainability planning
2. Low commitment worldwide for more effective conservation and use, where any collaborations are mostly fragmented.
3. Increasing threats from virulent diseases (especially lethal-yellowing diseases (LYD)) and key pests such as coconut rhino beetle
4. Increasingly serious threats from climate change and extremes, especially those of sea-level rise, drought and typhoons
5. A need for more effective technical capacity, genebank infrastructure, sustainable funding mechanisms, human resources, and equipment for genebank operations
6. Incomplete rejuvenation, backup and collecting of new accessions;
7. The mounting inventory of increasingly senile, unproductive palms, and the poor

condition of many accessions. Indeed some listed accessions are no longer active.

8. Inhibiting local social dynamics, land-tenure and political tensions.

ICG public-domain status is underpinned by a tri-partite international agreement between the ICG host-country government, the International Treaty for Plant Genetic Resources for Food and Agriculture (ITPGRFA-FAO- hereafter called 'the Treaty') and the ICC as COGENT's host. These agreements are currently being amended or updated so that all five will comply with Article 15[1] of the Treaty by June 2022.

Furnished with the complete assessment findings, ICC will then publish a report on *the State of the World's Coconut Genetic Resources*, along with recommendations in the form of a **global sustainability plan**, as a special issue of its peer-reviewed Coconut Research and Development Journal (CORD)[2] . This is one of the deliverables of the ACIAR/DFAT grant.

1 see http://www.fao.org/3/i0510e/i0510e.pdf

2 https://journal.coconutcommunity.org/index.php/journalicc

COGENT INTERNATIONAL THEMATIC ACTION GROUPS

Current ITAG Status

Over 2020-2021 COGENT has (re-)established four International Thematic Action Groups (ITAGs)[1] to lead in the identification and coordination of **priority projects** for germplasm conservation and use, linked to implementing COGENT's Global Strategy. Nominated ITAG leaders are listed in table 1. Each leader is a recognized expert in the respective thematic area.

Each ITAG is tasked with developing priority research projects pertinent to their respective research area, and aligned to implementing COGENT's Global Strategy. Collectively, the four leaders will also be invited to contribute to developing a workable **budget and workplan for implementing COGENT's Global Strategy**. When developing the Strategy, Dr Bourdeix articulated a draft workplan and budget that can be used as a starting point. This will be a key activity in developing an overall roadmap for a sustainable COGENT (see section 7).

1 see link to COGENT website

	ITAG	Leader	Institute	Country	Email
1	*Ex-* & *in-situ* conservation	Dr Ehsan Dulloo	CGIAR Alliance of Bioversity and CIAT	Mauritius	e.dulloo@cgiar.org
2	Genomics & breeding	Dr Yaodong Yang	Chinese Academy of Tropical Agricultural Sciences (CATAS)	China	yyang8@qq.com; yyang@catas.cn
3	Phytopathology, entomology & germplasm movement	Dr Myrie Wayne	Coconut Industry Board	Jamaica	cocindbrd@cwjamaica.com; waynemyrie@hotmail.com
4	In vitro tissue culture & cryo-preservation	Dr Anitha Karun	Central Plantation Crops Research Institute (CPCRI)	India	anitha.karun@icar.gov; anithakarun2008@gmail.com

Table 1. COGENT ITAG Leaders

The original aim was for ITAG leaders to convene bi-monthly virtual meetings, but leaders' competing professional demands have constrained this proposed frequency. Each group has met at least once during 2020-2021 by virtual conference, and some ITAG members have participated in other ITAG meetings or other international virtual meetings. Due to the Covid-19 pandemic, ITAGs are yet to meet face-to-face. COGENT is planning a virtual Steering Committee meeting in October 2021 (see section 15), and a key agenda item will be to review ITAG leadership and modus operandi, to promote greater proactivity and ownership, and to develop a coherent resource mobilization strategy. Prior to the SC meeting we aim to solicit ITAG leaders and members ideas on how the groups could be more effective.

ITAG recent activities and priority areas

ITAG 1 *Ex-* and *in-situ* conservation: Leader **Dr. Ehsan Dulloo**, is professionally stretched but has nonetheless been active. Top priorities include: 1) Backing up priority threatened accessions (at least in ICG-AIO); 2) Increasing effective germplasm exchange (in all ICGs) and 3) germplasm database development and management. COGENT is planning how best to build ICG data management capacity, in upgrading the Coconut Genetic Resources Database (CGRD), along with Cirad.

Other priorities include: 4) Diversifying coconut genebanks; 5) Improving genebank management (especially SOPs) and developing a **genebank sustainability plan** aiming to re-invest genebank income; 6) strengthening ICG partnerships, including links with Treaties and Conventions (Plant Treaty; and CBD-post 2020 Global Biodiversity framework), and leveraging international resources to support coconut GR conservation; and 7) mobilizing public opinion on strengthening agroecological intensification, including integrating biodiversity. The group has not developed a proposal in 2020/21, but developed two proposals on integrating biodiversity modelling into food systems in 2019/20. Other identified capacity-building needs include training in i) Controlled Hand Pollination; iii) Molecular and morphological characterization, and iii) Germplasm prospecting and collecting.

An SPC-led, FAO-Benefit-Sharing Fund supported coconut conservation project had its inception meeting in June 2021: *Safeguarding Threatened Coconut Diversity Within the Upgraded International Coconut Genebank for the South Pacific*, which is a follow-up to the partially aborted Darwin-Initiative-funded project with the same conservation aims to protect threatened Pacific coconut diversity. This work will apply both the Stantech manual of coconut descriptors and the draft updated characterization guidelines developed within

the Darwin project. The new guidelines will be published subject to SC endorsement.

Another important ITAG1 project will be to complete the video-guidelines for controlled hand pollination, where all the video-footage is available, but requiring CNRA, Côte d'Ivoire endorsement, then final editing.

To articulate the main findings from the ICG appraisals, ITAG1 submitted an abstract for participation in the 2nd International Agrobiodiversity Congress (*#EatGrowSave*)[2]. The virtual congress was held from 12-15 November 2021.

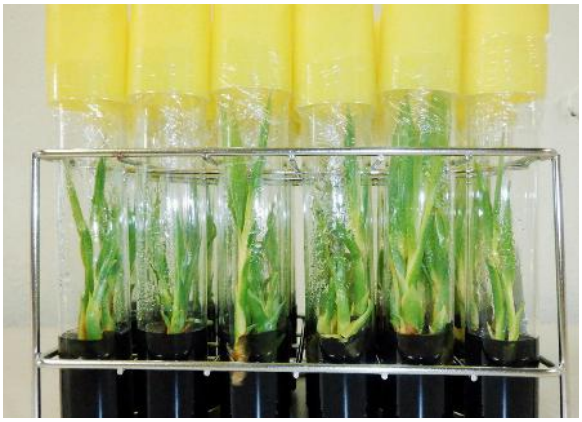
ITAG2 *Genomics and breeding:* The originally-nominated leader **Professor Sudarsono** of Indonesia has been in great professional demand, so unable to dedicate time to ITAG 2 matters. **Dr Yaodong Yang** agreed to co-lead the group although he is also very busy. A top ITAG2 priority is to establish a new set of molecular markers for better characterization of coconut germplasm. The Chinese funded pan-genomics proposal for *Cooperative Research on Pan-tropical Population Genetic Diversity of Coconut Based on Pan-genome Analysis*, submitted originally in 2020, has been re-submitted in April 2021. A critical coconut genomics paper: *Coconut genome assembly enables evolutionary analysis of palms and highlights signalling pathways involved in salt tolerance*, was published in the

journal Communications Biology[3], authored by Dr Yang and some members of ITAG2, including from CATAS and Cirad.

ITAG3- *Phytopathology, entomology and germplasm movement:* Group leader **Dr Wayne Myrie** has also been in great professional demand, but has continued to represent the group in international meetings. Top priorities are for more (cost-) effective lethal-yellowing phytoplasma diagnostics and genebank and national biosecurity planning. During 2020-21 the group submitted two proposals: i) *DIGICOCO: Smart Pest-Control Innovations for Small-Scale Coconut Producers* (Gates Foundation, US$1.5 million) and ii) led by CABI, Ghana, *HOLISTICOCO: Increasing yields for small-scale coconut producers in Africa through an integrated crop health, production and extension systems* (GIZ Innovation Challenge; US$150,000). Neither was endorsed (we discovered that CABI had also submitted a second GIZ proposal in India, and bidding rules only allowed institutional involvement in a single proposal, so we had to withdraw). However, developing both proposals significantly strengthened our collaborative relationships in Africa, Australia and elsewhere, and the concepts well-enough articulated to be useful for future bids.

2 https://alliancebioversityciat.org/stories/call-abstracts-2nd-international-agrobiodiversity-congress

3 http://publications.cirad.fr/une_notice.php?dk=597851



SPC hosted an international webinar on Lethal Yellowing Disease (LYD), successfully raising awareness and updating the international community on latest developments, and ways to contain the disease (see section 4.1 on SPC activities).

COGENT-ICC participated in a recent Mozambiquan Forum on Coconut LYD, encouraging the member-country to revitalize its long-standing COGENT membership along with ICC membership.

ITAG4- *In vitro* tissue culture (TC) and cryo-preservation: Leader **Dr. Anitha Karun**, although professionally stretched has nonetheless been active. She has begun martialling ITAG4 contributions to develop the first draft proposal for a ***review of current tissue-culture protocols*** tested on a range of tall- dwarf -and hybrid-types. This will serve the ITAG's top priority of recommending the most effective TC protocol for coconut plantlet macropropagation.

Other ITAG4 priorities include: i) Large-scale selection of priority varieties linked to effective nursery management and replanting programmes; ii) Hybridization of priority varieties for precocity, productivity, HVP, tolerance to priority abiotic and biotic stresses; and iii) Supporting national replanting programmes and planting expansion in coastal areas.

Under **Dr Bart Panis**, the CGIAR Bioversity-CIAT Alliance has almost finalized filing an international patent to protect (for smallholders) a user-friendly, cheap coconut-cloning protocol based on axillary shoot formation[4]. The team is liaising with key private-sector and other stakeholders to support final evaluations in key producing countries, and may also include with SPC-CePaCT in Fiji. This technology would eliminate the need for costly, and technically demanding controlled hand pollination for hybrid production.

Part of COGENT's conservation strategy concerns cryo-backup, and a recent cryo-feasibility study[5] made recommendations regarding establishing a global cryo-preservation facility for hard-to-conserve PGRFA collections, such as coconut. Cryo-preservation (freezing genotypes in liquid nitrogen) offers a reliable and cost-effective complementary conservation method, where relatively high initial investment costs are offset over the medium to long-term. Sponsored by the Belgium Government, on June 25, 2021, the Treaty and the Global Crop Diversity Trust hosted an **International Expert Panel on Cryopreservation**, to discuss a long-term strategy for hard-to-conserve PGRFA collections.[6] We urge you to consult the discussion and presentations

4 https://www.bioversityinternational.org/research-portfolio/fruit-tree-and-tree-crop-diversity/coconut-patent-application/

5 https://www.bioversityinternational.org/e-library/publications/detail/feasibility-study-for-a-safety-back-up-cryopreservation-facility-independent-expert-report-july-20/

6 http://www.fao.org/plant-treaty/overview/partnerships/international-expert-panel/en/

which can be accessed here[7], as a useful cryoconservation learning resource, and global status snapshot. Of particular interest is Dr Hugh Pritchard's (Kew Gardens, UK) overview.

Invited by the Leibniz Institute for Plant Genetics and Crop Plant Research (IPK)[8], in June, four speakers from COGENT ITAG4 delivered a webinar entitled *Coconut – needed by millions, conserved by few. How relevant are in vitro and cryopreservation strategies for these important crops?*[9] The 35 participants included botanic gardens, plant genebanks, collection curators, policy makers, and lab practitioners. This was under the auspices of the European, Middle Eastern & African Society for Bio-preservation & Biobanking (ESBB)[10].

Under the ACIAR grant, COGENT-ICC is planning for virtual **tissue-culture symposium** to be hosted by the Centro de Investigación Científica de Yucatán A.C (CICY[11]), Mexico in May 2022. CICY is currently finalizing its hosting arrangements.

COGENT is also planning series of linked TC workshops, with a central workshop planned at the CPCRI in India in April 2022, back-to-back with the ICG appraisal visit. ITAG4 members have also proposed a series of TC workshops, with both physical and virtual participants, possibly linked to developing video-guidelines. These could be rotated amongst the six or seven TC laboratories operating within the COGENT network. The proposed schedule will be finalized by end September 2021.

See table 2 for the full pipeline of proposals.

It is hoped that ITAG leaders can take responsibility for reporting ITAG interactions and initiatives in the future.

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7 https://www.fao.org/plant-treaty/overview/partnerships/international-expert-panel/en/

8 https://www.ipk-gatersleben.de/institut/ueber-uns/

9 see webinar recording here https://esbb.org/page/Coconutwebinar

10 see https://www.isber.org/ and https://esbb.org/

11 https://www.cicy.mx/

Proposal Type	ITAG	Donor	Lead Applicant	Deadline	Date Submitted	Amount (US$'000)	Title
Phase 1	Genomics & Breeding	China	CATAS	30-Apr-20	30-Apr-20	285	Cooperative Research on Pan-tropical Population Genetic Diversity of Coconut Based on Pan-genome Analysis
EOI Phase 1	Conservation	USAID	ICC	03-Apr-20	02-Apr-20	not specified	Piloting & mainstreaming broader genetic diversity, with sustainable climate-change adaptation, coconut-linked food-system and poverty-reduction interventions, Côte d'Ivoire, Kenya, & Tanzania
CN-Phase 1	Conservation	Science for Nature and people partnership (SNAPP)	ICC	10-Jun-20	08-Jun20	200	Biodiversity conservation modeling to promote sustainable development in poor coconut-growing communities
Bespoke	Phytopathology/ Germplasm Movement	CABI	ICC or CNRA Cote d'Ivoire	n/a	n/a	not specified	Biosecurity planning for ICGs
Bespoke	Phytopathology/ Germplasm Movement	??	ICC or Cirad	n/a	n/a	not specified	Thermotherapy treatments to disinfect coconut germplasm
Bespoke	ICC health & Nutrition	multi-donor	ICC	n/a	n/a	300	Randomized Clinical Trial on the Use of Virgin Coconut Oil (VCO) and Monolaurin Taken Orally Against COVID-19
EOI phase 1	ICC health & Nutrition	Canada, IDRC	TARI/KALRI	26-Jun-20	26-Jun-20	650	Coconut to increase food systems resilience to pandemic shocks, + ensuring increased market competitiveness/ demand for healthy & sustainable food. Kenya, & Tanzania
Phase 1	ICC health & Nutrition/ COGENT Conservation	SDC_	ICC-Bioversity-CIAT	28-Aug-20	n/a	10,000.0	Biodiversity in support to nutrition
Phase 1	TC & Cryo	EU	ICC-Bioversity-CIAT	28-Aug-20	n/a	TBD	Cryoperserving backup priority coconut accessios for the global collection
Invited MoA	ICC	ITC	ICC	ASAP	12-Nov-20	30.0	Capacity building webinars and support for COCOTECH, CRI training

Proposal Type	ITAG	Donor	Lead Applicant	Deadline	Date Submitted	Amount (US$'000)	Title
Phase 1	ICC	German Gov/ BMU	ICC-Bioversity-CIAT	10-Mar-21	n/a	5-20 million	International Climate Initiative (IKI) BMU): *From pilot to application: expanding climate-conscious & biodiversity-friendly land use & production*
Phase 1	ICC	EU, Horizon 2020	ICC-Bioversity-CIAT	26-Jan-21	n/a	3- 5 million €	Developing end-user products and services for all stakeholders and citizens supporting climate adaptation and mitigation.
Phase 1	ICC	EU, Horizon 2020	ICC-Bioversity-CIAT	26-Jan-21	n/a	16-25 million €	Restoring biodiversity and ecosystem services.
Phase 1	ICC	EU, Horizon 2020	ICC-Bioversity-CIAT	26-Jan-21	n/a	6-12 million €	Testing and demonstrating systemic innovations in support of the Farm-to-Fork Strategy
Phase 1	ICC	London School of Hygiene & Tropical Medicine (LSHTM), IMMANA	ICC-Bioversity-CIAT	21-Jan-21	n/a	1.4	Develop and Validate Innovative Methods and Metrics for Agriculture and Nutrition Actions (IMMANA).
EOI phase 1	Phytopathology/ Germplasm Movement	Gates Foundation, , Global Grand Challenges: Smart Farming Innovations for Small-Scale Producers	ICC	25-Feb-21	44252.00	1,500.0	DIGICOCO: Smart Pest-Control Innovations for Small-Scale Coconut Producers
Phase 1	Genomics & Breeding	CHINA	CATAS	30-Apr-20	30-Apr-20	285.0	Cooperative Research on Pan-tropical Population Genetic Diversity of Coconut Based on Pan-genome Analysis (resubmission of 2020 CN)
Phase 1	Phytopathology/ Germplasm Movement	GIZ Innovation Challenge 2021 - Advisory for Agroecology: Integrating agroecological approaches into agricultural advisory services	CABI	31/05/2021	31/05/2021	150.0	HOLISTICOCO: Increasing yields for small-scale coconut producers in Africa through an integrated crop health, production and extension system

Table 2. COGENT Proposal Pipeline 2021

A NEW COGENT COORDINATOR

Current Status

The key to an effective COGENT is an effective network coordinator. COGENT has been leading the drive to recruit a Coordinator since 2018, when Vincent Johnson stepped in as a part-time interim Coordinator (see newsletter 1). ICC-COGENT is delighted to formally announce that **Ms Erlene Manohar** has accepted our offer of the post, subject to her being able to work remotely from Manila in the Philippines, at least until international movements are no longer restricted by Covid-19.

Erlene will be known to many members of the international coconut community in her role as Deputy Administrator for research and development at the Philippines Coconut Authority (PCA). She has retired from this role in September 2021, and has now assumed her responsibilities as Coordinator on 4th October. Most recently in her long and successful career, Erlene has been overseeing the development of a compendium of data-driven studies culminating in the completion of the *Philippines Coconut Farmers and Industry Roadmap (2021-2040)*. This will guide implementing the new Philippines *Coconut Farmers and Industry Development Plan* (CFIDP) with the support of the PHP multi-billion *Coconut Farmers and Industry Trust Fund*.

Her experience will be invaluable for formulating a similar kind of **Roadmap for COGENT** in the months and years ahead.

Regional Assistance

Another element for promoting more effective COGENT coordination could be the installation of five **regional Assisting Coordinators**, that may be hosted by the ICGs. This will promote more equitable representation of regional needs. Currently COGENT activities are skewed in favour of the Asia-Pacific region (which currently produces more than 80% global output)

Dr Carmel Pilotti, who coordinates the coconut research programme for the Pacific Community (SPC), has been nominated as the assisting coordinator for the Pacific region, but ICC COGENT now wishes to nominate individuals in the other COGENT regions to fulfil similar regional support roles. Carmel has provided a short report on SPC activities in section 4.1.

COLLABORATION

General Collaboration Status

COGENT relies heavily on collaboration with a range of stakeholders (see figure in Newsletter 1).

A key Pacific-region collaborator is the Pacific Community[1] (SPC), which has specific expertise in coconuts. Another long-term collaborator is CIRAD[2] (the *French Centre de coopération internationale en recherche agronomique pour le développement*), which has probably contributed more to COGENT than any other partner. Hence below we publish a short report from SPC, and a rogues' gallery of CIRAD research personnel who contribute to coconut research.

Apart from our current sponsors ACIAR and DFAT, and interactions with donors (see pipeline) other significant direct interactions during 2020-2021 have included: the Bioversity-CIAT Alliance; CABI, Ghana; CATAS, China; CIB, Jamaica; CICY, Mexico; CNRA, Côte d'Ivoire; the Colombian Government; the Costa Rican Government; CRI, Sri Lanka; CPCRI, India; the CropTrust, Germany; Embrapa, Brazil; the European, Middle Eastern and African Society for Biobanking (ESBB), France; the Integrated Breeding Platform (IBP), Global; Intracen-ITC, Switzerland (+ the Caribbean); ITPGRFA-FAO; Italy; KALRI Kenya; PCA, the Philippines TARI, Tanzania; University of Queensland, Australia; and Zambezia Province Mozambique.

Some of the interactions have arisen as a result of COGENT's links to the more downstream activities its host ICC, which is helping to also link COGENT's conservation mandate more closely to use of coconut diversity.

To facilitate connections between the Alliance and the coconut industry for validating the axillary shoot TC protocol, we have also interacted with a range of public and private-sector stakeholders most notably: Brazilian industry advisors; Deejay farms, India; Doug Hawkins Associates Ltd, UK; and Vitacoco, USA. As previously highlighted, the technology will be freely available for smallholders and non-profit institutions.

Despite all this activity, COGENT plans to formulate a **partnership strategy** that will draw together the threads of its relationships in a more coherent manner that better addresses the implementation of its Global Strategy, and mobilises the appropriate resources to this end. This will be a part of the COGENT roadmap.

COGENT will feature one or more key partners in each newsletter going forwards.

1 https://www.spc.int/

2 https://www.cirad.fr/en

News from the Pacific Community (SPC)

The Pacific Community (SPC) is an international development, scientific and technical organisation owned and governed by its 26 country and territory members that works for the well-being of Pacific people through applying science and knowledge. SPC envisions the Pacific as a region of peace, harmony, security, social inclusion and prosperity, so that all Pacific people can lead free, healthy and productive lives. It covers more than 20 sectors and is renowned for knowledge and innovation in fisheries science, public health surveillance, geoscience and conservation of plant genetic resources for food security. SPC focuses on major cross-cutting issues, such as climate change, disaster risk management, food security, gender equality, human rights, non-communicable diseases and youth employment. Dr Carmel Pilotti is the main COGENT contact point.

a. SPC Coconut Projects

The Pacific Community (SPC) recently finalized an agreement with the Food and Agriculture Organisation of the United Nations (FAO) to implement the project: "Safeguarding threatened coconut diversity within the upgraded International Coconut Genebank for the South Pacific" that has been approved for funding in the Fourth Call for Proposals of the Benefit-sharing Fund (BSF) of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).

Funding has been provided to assist in the duplication of a selection of priority accessions from the International Coconut Genebank for the South Pacific (ICG-SP) hosted by Papua New Guinea at three sites in Fiji, Samoa and PNG provided biosecurity constraints can be addressed. The genebank which consists of national collections from around PNG is currently under threat from a phytoplasma disease. Accessions are being collected from the original prospecting locations which are outside of PNG's Madang Province where the Bogia Coconut Syndrome (BCS) is affecting and killing coconut palms. The original collection sites do not have BCS and hence coconuts are safe to transfer to a new genebank site within PNG. It is anticipated that additional, prioritized national collections from Fiji and Samoa will also be conserved in the new genebanks and in situ in farmer's fields or secured land areas. These collections will be identified by their importance and/or cultural significance to local communities and perceived or known traits that address climate resilience or impact.

Photo 1 Coconuts collected from different cultivars at Taveuni Research and Development Centre, Taveuni Island, Fiji, awaiting processing to extract embryos for tissue culture research. Photo C. Pilotti.

This FAO-ITPGRFA Project is an extension of a preceding project funded under the DARWIN Initiative and will complement the activities

on another project concerning coconut genetic resources entitled "Safeguarding and Deploying coconut diversity for improving livelihoods in Pacific Islands (Coconuts for Livelihoods)" which is supported by the Australian Centre for International Agricultural Research (ACIAR). The aims of both projects are to strengthen and safeguard the conservation of the Pacific's diverse coconut genetic resources through in vitro methodologies and field planting.

Partners in the FAO-ITPGRFA are Fiji, Papua New Guinea (PNG) and Samoa with support in expertise from CIAT-Bioversity Alliance.

ACIAR Project Partners include the University of Queensland and Pacific Island countries Fiji, Papua New Guinea, Samoa, Solomon Islands and Vanuatu.

Under the ACIAR "Coconuts for Livelihoods" Project, equipment will be procured for a cryopreservation facility at the SPC-Centre for Pacific Crops and Trees (CePaCT) to conserve coconut embryos and meristems. The research on cryopreservation is being supported by Professor Steve Adkins and his team at the University of Queensland (UQ) and expectations are that preliminary research on coconut cryopreservation will begin at CePaCT in early 2022. Facility upgrades to house the cryopreservation laboratory at CePaCT are funded under an existing grant from the Government of Australia through the Australian Aid Identifier and implemented by CePaCT.

Two visits by Project staff to Taveuni Research and Development Centre (TRDC) in Fiji to collect coconut embryos for the research into cryopreservation and somatic embryogenesis at UQ were made in 2020 and further visits are planned this year. The support of staff of TRDC and CePaCT in this work is acknowledged.

b. Coconut Phytoplasma Webinar

SPC LRD in collaboration with the ACIAR "Coconut for Livelihoods" Project hosted a webinar from January 20-21, 2021 on phytoplasmas causing lethal yellowing type diseases in coconut, with a focus on Bogia Coconut Syndrome (BCS) a relatively recent phytoplasma disease affecting coconuts in the Madang Province, PNG. Coconut germplasm exchange to and from countries hosting international genebanks presents biosecurity risks given the presence of phytoplasma diseases in several coconut-growing countries that are host to International Coconut Genebanks (ICGs). The webinar was convened to address risks associated with exchange of coconut germplasm through consultation with scientists actively involved in research in this area and specifically to seek views on appropriate molecular diagnostic methods and review the evidence for transmission of these bacteria through coconut embryos.

The webinar was attended by participants from Australia, Fiji, India, Indonesia, Jamaica, Mexico, Papua New Guinea and Reunion. Twelve reports were presented outlining important LY diseases in different countries, their occurrence, epidemiology and field control. Some recommendations from the Webinar include the need to source coconut germplasm from LY disease-free areas and early interventions in disease control through the application of rapid field diagnostic tests for phytoplasmas. A conference report is currently being compiled and recommendations will be discussed with ICC/COGENT and other partners to update biosecurity guidelines for facilitating coconut germplasm exchange between countries.

c. Coconut Integrated Programme 2020-2021

In recognition of the multi-faceted nature of challenges and issues hindering progress and development of coconut in the Pacific region, SPC LRD is developing a Coconut Integrated Programme with the key aim of streamlining multiple coconut projects within LRD for improved implementation and impact. The programme sets out a roadmap through a Theory of Change for coconut research and development in Pacific Island Countries and Territories and will identify and resource knowledge and capacity gaps.

The LRD coconut programme recognizes the strong links and support from ICC and COGENT and continues its work towards achieving mutually beneficial outcomes and sustainable livelihoods for coconut farmers and producers in Pacific Island countries. A Factsheet has been produced for this programme which outlines the concept and evolution of the Coconut Integrated Programme and is available on request.

CIRAD

The *French Centre pour la recherche agronomique pour le développement* (CIRAD www.cirad.fr). has collaborated with COGENT since the network's formation in 1992. CIRAD co-coordinated COGENT in collaboration with Bioversity International between 2012 and 2017. CIRAD scientists continue to provide technical assistance, focusing on coconut breeding and genomics; genetic resources characterization; evaluation and data management; phytopathology; agronomy, and valorisation. They developed the coconut genetic resources database for COGENT and trained staff coconut genebank-staff to use the software. CIRAD also developed a set of coconut microsatellite genetic markers. Resulting genotypic data are stored in CIRAD's TropGENE database. They also collaboratively developed widely-used genetic software Geneclass 2, to assign individuals to populations. In April 2015, CIRAD participated in a workshop organized by the Global Crop Diversity Trust (GCDT), COGENT, and the SPC and funded by the Australian centre for international agricultural research (ACIAR) in PNG to prepare for transfer of the ICG-SP.

Until now the institution has regarded its coconut research as supplementary to more mainstream crop research, such as coffee or banana. CIRAD is now considering a strategic shift in developing a *feuille de route* (roadmap) to mainstream its coconut research activities in a standalone programme, possibly from 2024 onwards. CIRAD is very keen to expand its technical assistance role within COGENT.

Dr Alex Augusto Armero Villanueva has a bioinformatics background and developed a pipeline allowing for genome reconstructions of the last common ancestor of most flowering plants. At CIRAD, he developed a bioinformatics pipeline to improve de novo transcriptomes of non-model organisms with translational genomics and applied it to coconut. He also contributed to the coconut genome sequencing project, studying the evolution of the coconut and oil palm genomes. He also carried out a differential gene expression analysis of two coconut genotypes under salt stress. Postdoc experience in HIV and clinical identification of drug resistance. Currently, Alex is a research assistant at the Institute Pasteur of Shanghai. He worked on virus diversity at different biological levels. In addition, he applies machine learning techniques to model 'omics data in both basic and applied research.

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Dr Luc Baudouin is a plant breeder and geneticist. After devoting more than 10 years to oil palm breeding in Ivory Coast, in Indonesia and in France, he moved to coconut. His research topics include coconut breeding, genetic resources assessment, preservation and data management, and population genetics. He applied Bayesian statistics to uncover the main features of the genetic diversity of coconut. More recently, he devoted most of his time to the study of the coconut genome and to the reconstruction of part of palm evolution while preparing genomic resources for coconut genome assisted breeding. As Luc will retire at the end of 2021, COGENT would like to formally acknowledge his tremendous contributions to the Coconut sector, especially with regard to germplasm characterisation and improvement.

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Dr Stéphanie Bocs holds a PhD in microbial genetics. In June 2006, she has been employed, as a bioinformatician, at CIRAD in the Joint Research Unit Genetic Improvement and Adaptation of Mediterranean and Tropical Plants (UMR AGAP). Since, she is involved in genome-sequencing projects on several crops: including banana, cocoa, coconut, coffee, and oil palm. In April 2019, she gained certification to supervise research (HDR) in annotation and comparative genomics. She is also involved in developing web-based information systems, such as the Genome Hubs of the South Green bioinformatics platform.

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Dr Roland Bourdeix is a well-known coconut breeder from CIRAD involved in ethnobotany. He devoted much work to characterizing and conserving coconut genetic diversity. He has published several books on coconut traditional and improved varieties, and shared his expertise with researchers of many producing countries. As COGENT coordinator 2011-2014, he contributed to the coconut genome sequencing effort by funding the production of a mapping population in Côte d'Ivoire. He is also the main driving force behind COGENT's new Global Strategy. He is currently on sabbatical leave.

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Dr Andrea Garavito-Guyot has a BSc. in Microbiology, an MSc. in Biology and a PhD. in Plant Integrative Biology. She has used different NGS technologies i to explore the genetic diversity and evolution of rice and coffee using wild and cultivated species, and the identification of new resistance genes in wheat. She has a significant experience in genome assembly and annotation. Andrea joined the team in September 2020. She is currently working on the improvement of the Hainan Tall genome assembly, in collaboration with the CRI-CATAS, and in the establishment of a Crop Ontology for Coconut.

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Dr Chantal Hamelin is a database scientist at CIRAD BIOS Department (UMR AGAP). She has been involved in: development and maintenance of the CGRD (Coconut Genetic Resources Database) for COGENT 1993 to 2004, involving annual addition of new data from the COGENT collections; data management and periodic addition of new data into the CDM (Coconut Database Management) which contains the production data of two research institutes (CNRA Station Marc Delorme in Ivory Coast and Saraoutou research station in Vanuatu). She is currently participating in the development of a coconut ontology based on the Crop Ontology project. As Chantal will retire at the end of 2021, COGENT would like to formally acknowledge her tremendous contributions to coconut germplasm data management.

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With a background in agronomy, **Jean-Pierre Labouisse** is a senior researcher at CIRAD with extensive experience in plant breeding and genetic resource management. From 1994 to 2004, he was seconded to the Vanuatu Agricultural Research and Technical Centre as head of the coconut division. He was involved in various projects of research and R&D, and in training activities in several Pacific countries and in the framework of COGENT. Coconut breeding, hybrid seeds production, genebank management, genetic diversity assessment and ethnobotany are his main areas of expertise. He has similar experience in coffee (Robusta and Arabica) and breadfruit.

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Dr. Laurence Beaudoin-Ollivier (PhD, Hdr), is a senior entomologist at CIRAD (UMR ABSys) specialized in insect pests affecting coconut and oil palm for 26 years. She has field experience in South Pacific (8 years), Vanuatu and PNG, South East Asia, South America and Africa. She conducts research, expertise and training on insects affecting coconut tree. She has published several papers and chapters of books. Her scientific activities focus on sustainable methods to control pests and research work for pollination improvement. She aims to establish agricultural practices encouraging biological interactions and at optimizing agro system performance and wellbeing. She is currently Cirad's coconut supply-chain acting correspondent.

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Dr Fabian Pilet is a permanent research scientist at the Agricultural Research Center for International Development (CIRAD). From university training on molecular and cellular biochemistry, he did a PhD thesis on the model pathogen Phythophtora infestans at the French National Institute of Research for Agriculture (INRA). Then, he joined CIRAD in 2004 to pursue research activities on Coconut Lethal-Yellowing Disease in Ghana and neighboring countries for 4 years. After a decade in France from where he carried out numerous consultancies on lethal-yellowing-type diseases, in 2014 he transferred to Cirad in La Réunion, to cover a range of research projects in East Africa and countries from the South West Indian Ocean. His main interests are molecular epidemiology, patho-genomics, and bacteria-insect interactions.

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Dr Alexia Prades is a senior researcher at Cirad, being also the focal point for coconut sector for this research organization. Since 1999, she has been acting as a researcher and expert in tropical food technology, especially small-scale coconut processing. She has been working on several research projects with partners from Ghana, Côte d'Ivoire, Brazil, Vanuatu, Sri Lanka, Indonesia, and Pacific Islands. Many of these projects developed tools for assessing the coconut products' quality, such as coconut water's aroma or rapid composition analysis of copra thanks to NIRS (Near Infra-red Spectroscopy). More recently, she supervised a consultancy on the coconut value chain analysis in Côte d'Ivoire, at the national level, which highlighted the great diversity of the coconut uses in the country. Between 2014 and 2016, Alexia coordinated COGENT, the International Coconut Genetic Resources Network on behalf of Bioversity International, one of the CGIAR research centres. As coordinator, she initiated the transfer of COGENT from Bioversity International to ICC and she contributed to the implementation of several projects such as the planting of the mapping population for genome sequencing at CNRA in Côte d'Ivoire.

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Ronan Rivallan is a technician at the Regional genotyping technology platform run by the AGAP Institute. Involved in multiple plant genomics projects, he extracted DNA from the mapping population and developed the DNA bank for genotyping by sequencing (GBS).

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Jean-Marc Roda is Cirad's newly-appointed Jakarta-based, Resident Regional Director for South East Asian Island Countries (Indonesia, Malaysia, the Philippines, Singapore, Timor Leste and Brunei). He is an economist (PhD in comparative dynamics of developing societies, MScs in Biology of Organisms and Populations and in Geography). He will coordinate Cirad's collaborative R&D and training programs with various partners in the region. His career embraces the Indian timber industry and European forestry, developing biometric and quantitative models for wood and biomass supply competitiveness of the pulp & paper sector. He returned to the tropics in 1999, with Cirad in Africa, Latin America, Asia and the Pacific, focusing on the value chains, the industrial organization, sustainability and geopolitics of forests, oil palm, biomass and biorefineries, and other plantation commodities. This included six years at the Forest Research Institute of Malaysia on the quantification of formal and informal markets, and nine years at Universiti Putra Malaysia, focused on biomass valorization, working on haze and peatland issues, bioenergy and bioeconomy, and on the analysis of agribusiness corporations' strategies through their ownership structures.

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STEERING COMMITTEE

Steering Committee Meeting 2020

a. Meeting Outline

ICC's COGENT programme held its first virtual online SC meeting (20th SC meeting altogether) between 22 and 25 June 2020. Over four 2-hour daily sessions, a total of more than 50 coconut expert delegates (40% female) attended from 29 institutions spread across 26 countries spanning 12 time-zones from Mexico/ Brazil to Fiji/Australia (see annex 1). This meant westernmost delegates had to attend at 5:00 - 07:00 and easternmost delegates at 22:00 - 24:00, so COGENT acknowledges their sacrifices. Almost 40 delegates attended each day, indicating high levels of engagement.

The meeting had originally been scheduled as a face-to-face meeting in March 2020, to be hosted by the Indonesian Palm Research Institute, Balit Palma, Manado, back-to-back with a planned appraisal of the International Coconut Genebank for South East Asia (ICG-SEA) housed at Balit Palma. The COVID-19 pandemic prevented the physical visit, so a virtual meeting was organized.

The main meeting objectives were to:

1. 'Reboot' COGENT as a viable network, and provide a forum for the global coconut community to understand the scope of work scheduled within the new ACIAR/DFAT grant GP/2018/193: *Supporting an international initiative to maintain the international coconut genetic resources network (COGENT)*,
2. Begin developing a strong, collaborative and sustainable network from within the International Coconut Community (ICC),
3. Formally agree on the Steering Committee (SC) membership,
4. Address COGENT's global strategy implementation,
5. Discuss next steps and articulate action points/ recommendations.

The face-to-face meeting agenda was participatorily articulated during the January planning meeting, and for 7-hour daily sessions over four days (see annex 2). When it was evident that we needed to hold a virtual meeting, the agenda was adjusted to accommodate only 2-hour sessions on account of the attendees' time-zoning. There was a trade-off between gains made on not having to travel, and keeping a sharp focus, versus losses of the amount of time available for each topic presentation and discussion. Delegates opted for a single shorter meeting across all time-zones rather than longer meetings split into a western and an eastern time-zone cluster. This was mainly to ensure discussion momentum was maintained and all delegates received and shared the same information. Requesting delegates to log-on early allowed us to minimize audio and other problems, and allowed people to greet in the virtual foyer.

Delegates were welcomed by Dr Syafaruddin, Director ICECRD, Dr Jelfina Alouw, Executive Director of ICC, and Irene Kernot Horticultural Research Programme Manager ACIAR (also representing Christine Pahlman, Assistant Director, Agricultural Development and Food Security Section, Australian Department of Foreign Affairs and Trade (DFAT). ACIAR/DFAT are supporting COGENT's revitalization, and their grant has made this meeting possible. ACIAR's director of Multilateral Engagement, Dr Julianne Biddle who is an SC observer member was also present.

Day 1 linked to ICC Strategic plan and set the scene, explaining the new context, which is articulated in greater detail in COGENT's newsletter 1[1]. Day 2 provided space for International and National Coconut Genebank (ICG/NCG) representatives to briefly report on status (genebank appraisals pending) and flag important issues in discussion. Day 3 provided a forum for discussions linked to COGENT's four re-forming International Thematic Action Groups (ITAGs) in i) *Ex Situ & In Situ* Conservation ii) Genomics & Breeding iii) Phytopathology, Entomology & Germplasm movement and iv) In vitro culture & cryo-conservation. These groups will spearhead the implementation of COGENT's Global Strategy. Day 4 provided an update on the status of coconut germplasm data management and needs, and references to developing a sustainability plan for COGENT and the ICGs.

SC members endorsed suggested slight changes to the membership of just one representative per region, and after discussing the areas as listed above and in Annex 2, helped articulate the recommendations arising during the meeting for next steps, as articulated below.

b. Steering Committee (Draft) Recommendations 2020

Arising from the meeting the COGENT SC recommended that:

I. Membership

1. COGENT adds an alternative member representative for each of the 5 ICGs as follows: i) LAC- Brazil, **Dr Semíramis RAMOS**; II) AIO- Côte d'Ivoire, **Dr Tra Serges DOUBI** or **Dr Thierry THAKRA LEKADOU**; iii) SAME, India, **Dr Anitha KARUN**; iv) SEA-Indonesia, **Dr Stevie KAROUW**; v) SP-PNG, **Dr Carmel PILOTTI**.
2. COGENT adds Dr Matija OBREZA, as an OBSERVER member representing the CropTrust.

II. Planning Meetings

3. ICC formalizes monthly COGENT programme meetings – third Wednesday of month (7 to 8 am CET) to include Mr. Vincent Johnson, Dr. Jelfina Alouw, Ms. Mridula Kottekate, Dr. Ponciano Batugal, Dr. Carmel Pilotti, plus occasional presence of other regional reps (as potential assisting coordinators. Draft repeating agenda: proposals, ICGs, ITAG status, progress of ACIAR workplan, events (trainings conf workshops etc.), sustainability plan.

III. Coconut Genebanks

4. In consultation with FAO-ITPGRFA, COGENT assists in **reviewing and renewing the Article 15- ICG hosting agreements** for all 5 ICGs. ITPGRFA will develop first draft letters to amend existing agreements (ICG-AIO and ICG-SP), or to develop new agreements (ICG-SAME, LAC and SEA).

1 https://coconutcommunity.org/regular/cogent_newsletter

An agreed draft will be shared with each host government contact in preparation for signature, along with FAO and ICC.

5. COGENT formalizes an **alternative representative for each ICGs** (see recommendation 1) to be responsible for transferring interesting accessions into ICG (all accessions available in one request).
6. COGENT facilitates **national coconut genebanks to develop international status** (e.g. the Philippines, Malaysia, Sri Lanka, Jamaica).
7. COGENT **finalizes the ICG pre-appraisal visit questionnaire** in preparation for the remaining four ICG appraisal visits, and agrees visit dates, within the constraints of the COVID-19 pandemic, and COGENT finalises the ICG-SP appraisal report.
8. ICG Curators and COGENT develop an **ICG and COGENT Sustainability Plan** that allows them to sustain themselves.
9. In conjunction with host country governments, ICG curators and COGENT develop a Genebank **Biosecurity Plan** that links to national biosecurity plans (if existing), and if not COGENT will liaise with the host to develop such a plan. Part of the plan will include a section on quarantine and phytosanitary responsibility and measures when receiving or donating germplasm and involving national quarantine agencies and certification mechanisms (ICC-COGENT can provide support but not certification, plus recipient country risk analysis). Special attention will be paid to auditing for lethal yellowing-like phytoplasma infestation, linked to effective diagnosis.

IV. International Thematic Action Groups (ITAGs)

10. Nominated ITAG leaders confirm their willingness to participate and review membership , including settling the issue of leaders coming from COGENT member countries.
11. ITAG leaders convene and report on monthly virtual meetings (and ad hoc physical meetings when events allow) to update on any progress in their field.
12. ITAG leaders begin formulating / developing their list of prioritised research idea/ projects linked to the Strategy, to include support for ICC's coordinating role. ITAG1 will focus on ICG-related conservation management matters; ITAG 2 consolidating genomics and breeding links; ITAG 3 considering Biosecurity planning and conducting a survey/ review of (proven) diagnostic tools; ITAG 4 compile links to all TC and cryo protocols, provide snapshot of validation status to begin preparing for TC symposium and India Workshop. These priority projects will form the basis of renewed resource mobilisation/ proposal development.
13. Together, ITAG leaders contribute to developing the COGENT Strategy implementation plan and budget.

V. Germplasm Data Management

COGENT takes steps to improve germplasm data management, including:

14. Reviewing data-sharing restrictions, agreements, including soliciting advice from relevant bodies like ITPGRFA, CIRAD and Bioversity-CIAT Alliance.
15. review current status of ICG and CGRD germplasm data, and decide what needs updating/ re-collecting.

16. organising a timeframe and support for CGRD data migration.
17. organising statistics and data-management capacity building for member countries- linked to COGENT germplasm data-management training. This will be a possible collaboration with the Alliance of Bioversity and CIAT, Cirad, the CropTrust and the Integrated Breeding Management Platform for the Breeding Management System (https://bmspro.io/) (back-to-back with Malaysia COCOTECH meeting or other).
18. developing a COGENT germplasm data management strategy

These recommendations will be reviewed in the 2021 SC Meeting.

Steering Committee Meeting 2021

COGENT normally holds biennial SC meetings back-to-back with the ICC COCOTECH meeting. However, due to Covid-19, this year's COCTECH will be on-line and thus more challenging, and less appropriate to hold a COGENT SC meeting at the same time. Also as the new coordinator assumed her post in the week beginning on 4th October, it made sense to hold a virtual SC meeting soon after her arrival 13 to 15 October 2021.

COGENT's Steering Committee is composed of:

Voting members: country-member representatives from each of the five COGENT regions and the ICC. Originally, COGENT SC listed both the regional representative and the alternative regional representative, so that at least one would be present for voting. We have informally suggested restricting this to one vote per region, but this needs to be endorsed by the SC.

The current list of voting members can be found on the COGENT website[2], but we will need to update this list with new nominations. I will be sending round a suggested list of nominations which can be agreed and then voted on at the upcoming SC meeting.

Non-voting observer representatives from: ACIAR, the CGIAR Bioversity-CIAT Alliance, CIRAD, the Global Crop Diversity Trust; the UN Food and Agriculture Organisation (FAO), the Treaty (ITPGRFA), and the Pacific Community (SPC). Last year we voted on a list of included observers which will be shared with the nominations for new SC voting members.

The 2021 SC meeting agenda is along similar lines to previous meetings. Meeting objectives include: i) welcoming Erlene Manohar as the new COGENT Coordinator; ii) setting the wheels in motion for finalizing a Roadmap towards a self-sustaining COGENT; and iii) discussing COGENT's activities to date and its agenda until the end of the ACIAR grant period (30 June 2022), and beyond.

A meeting report will be included in the next newsletter.

18 https://www.cogentnetwork.org/halaman/detail/steering-commitee-members

COGENT EVENTS

Table 3 lays out the main events on the horizon. (planned before Covid 19 forced further changes in October 2021).

Event	THEMATIC AREA					PERIOD										COMMENTS ON INDICATIVE DATES
	ITAG 1	ITAG 2	ITAG 3	ITAG 4	ICC	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	
Tissue culture workshops																rotating in different countries, monthly between Oct-21 & May-22. Tis will include a big international workshop around April 2022... may need to fuse this event with the Symposium below
Tissue culture symposium																depending on CICY or PCA availability between Nov-21 & Jan-22
Germplasm data management																need to start ASAP depending on Cirad and BMP availability. Was scheduled back-to-back with COCOTECH but now virtual.
Pan-genomics ITAG 2 workshop (China)																depending on proposal endorsement possibly sometime between Jan & June 22
ICG appraisal visit dates																Indonesia, Nov-21; India, Dec-21; Brazil Feb/Mar-22
National Collection surveys																will begin Oct-21
COGENT Steering Committee Meeting																First half Oct 2021 and then with Final project meeting in June 2022
Biodiversity Congress 12-15 Nov 2021																abstract submitted
Biosecurity planning																to be done with ICG curators
Planning COGENT's 30th Anniversary in 2022																2022 will be 30th Anniversary so need to plan when is best date for celebrating
COGENT Roadmap finalisation																as soon as Erlene starts after Oct-4 2021
ACIAR/DFAT final project meeting																
ICC 57th ministerial session																26-28 Oct 2021
49th International COCOTECH Conference Exhibition																30 Aug to 2 Sep 2021
ITC-ICC capacity building interactions																Aug-21 to Jan/Feb 2022

TOWARDS A SUSTAINABLE COGENT: A ROAD MAP

Unless decisive planning and actions are taken to shore up the future of COGENT, it will not survive over the medium to long-term. In July the 'core' COGENT group discussed elements to be integrated into a COGENT Roadmap for a sustainable network. COGENT needs to clearly articulate its value-proposition.

The discussion focussed on five main areas:

1. Learn from other similar networks, and compare how are apparently successful examples are managed (e.g. MusaNet[1], EUFORGEN[2], ECPGR[3], CacaoNet[4], SPC/CePaCT[5], TFNet[6]). This could inform a realistic budget embracing operating costs based on the COGENT strategy implementation budget and workplan. COGENT could consider commissioning an Intern or M.Sc student to do such a network review.
2. Irene Kernot (ACIAR Horticultural Programme Manager) shared an interesting paper on M&E for Networks. Any COGENT review should consider its network vibrancy, connectivity and effects, using M&E tools and methods- Network surveys and social network analysis (see INTRAC paper[7]).
3. How best to move forwards with the ITAGs? Does COGENT need them? Should COGENT provide realistic incentives to secure ITAG leaders' commitments. Renewed commitment is also required from COGENT country representatives and ITAG members. COGENT should secure up-to-date, committed national contact points for each member country.
4. Develop COGENT's **resource mobilization strategy** (within ICC?), especially with regard to ITAG activities/ proposal development developing self-sustaining mechanisms and projects. This should be linked to strong **communications** (to raise visibility) and **partnership engagement** strategies (articulating what COGENT can offer), that align with the ICC, and capitalise on ICC membership- dual / two tier memberships, and link to the ICGs' developing a new business model/ sustainability plans.
5. An effective, committed network coordinator is critical and Erlene Manohar coming on board from the PCA in October is now providing the necessary impetus. Erlene worked on a *Roadmap for the Philippines Coconut Industry*. Under her leadership, COGENT has begin drafting its Roadmap towards a sustainable future, to ensure it is fully articulated by March 2022. Her experience in this area, in addition to many others offers a beacon for the future.

1 https://musanet.org/
2 http://www.euforgen.org/
3 https://www.ecpgr.cgiar.org/
4 https://www.cacaonet.org/
5 https://www.spc.int/
6 https://www.itfnet.org/v1/
7 https://www.intrac.org/wpcms/wp-content/uploads/2021/01/ME-of-network-development.pdf

RIP MR CLAUDE ANDRÉAS (1956-2021), MADAGASCAR COGENT REPRESENTATIVE

Antananarivo, April 6, 2021, 3:10 P.M. – *The Malgache business world is in mourning, and the Sava region has lost one of the biggest defenders of its economy. Mr Claude Andréas, general manager of the coconut palm oil production company, Soavoanio, and owner-manager of the Las Palmas hotel, passed away on Tuesday, April 6 at the age of 74. He succumbed to a week-long illness and was evacuated from Sambava to Tana in an emergency, where he passed away.*

Mr Andréas, founder and director of the largest coconut plantation in Madagascar, ran the Soavoanio company since 2011. A committed entrepreneur, Claude Andréas worked assiduously for the development of the private sector in the Sava region. Founder of the Sava Business Group, he

was also previously Secretary General of the National Vanilla Exporters Group, and also chaired the destinies of the Sava Regional Tourist Office. His adopted region owes him the Sava tourist guide, *A la découverte du triangle vert de Madagascar* (Discovering

the green triangle of Madagascar). He graduated in agricultural engineering from the National School of Agronomic Sciences of the University of Antananarivo, and specialized in coconut agronomy from the Research Institute for Oils and Oilseeds in France and Côte d'Ivoire. He also made a foray into politics as Minister of Agriculture under Guy Willy Razanamasy's government from 1991-1993. Claude Andréas will also be remembered for his social and humanitarian commitments in his adopted region. Founder of the Sambava Lions Club, he was past governor of District 403B of Lions Club International. In his memory, along with his family and friends, the Soavoanio Society and other well-wishers within and beyond Madagascar observed a day of mourning[1].

COGENT remembers his interactions, and especially the warm hospitality he extended in a personal trip by Vincent Johnson in 2015, to re-vitalize COGENT relations and visit the 5000ha plantation efficiently producing hybrid seed nuts and high-value coconut products. The International Coconut Community mourns the loss of this dynamic and eloquent power-house, Claude Andréas. May you rest in peace.

1 (translated and adapted from sources: https://lexpress.mg/07/04/2021/necrologie-deces-de-claude-andreas/ https://www.newsmada.com/2021/04/07/necrologie-deces-de-claude-andreas/ https://2424.mg/necrologie-deces-de-claude-andreas-ancien-ministre-de-lagriculture-et-directeur-general-de-soavoanio/ https://tanikomadagascar.wordpress.com/2021/04/07/necrologie-deces-de-claude-andreas/)