

Nadi, Fiji 2nd November 2017

Official Recommendation Letters 2017 1 to 10

The International Coconut Genetic Resources Network

***COGENT's goal
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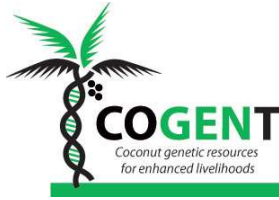
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From 31st October to 4th November 2017, the International Coconut Genetic Resources Network (COGENT) organized its 18th Steering Committee Meeting and workshop hosted by the Pacific Community, in Nadi, Fiji. The Steering Committee and representatives from various stakeholders of the global coconut sector attending the meeting have endorsed the following listed international recommendations, which are thereafter featured as individual formal recommendations:

1. Interim coordination of COGENT
2. New Hosting arrangement for COGENT Secretariat
3. New COGENT Secretariat and Coordinator recruitment
4. Global Coconut GR Conservation and Use Strategy Implementation (plus annex 4.1)
5. Coconut Genebanks Audit
6. Securing Coconut Genebanks' land tenure for the long term
7. Managing Key Biotic stresses threatening coconut
8. Accessing Coconut Genomics Mapping Populations (in Côte d'Ivoire)
9. Safe coconut germplasm exchange- via *in vitro* zygotic embryos
10. Towards an upgraded Coconut Genetic Resources Database



Nadi, Fiji 2nd November 2017

Official Recommendation Letter n°2017-1 Interim coordination of COGENT

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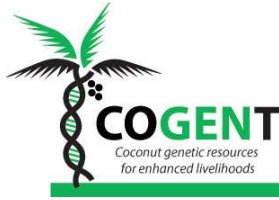
- The possibility of a new Secretariat hosting arrangement being established
- The importance of the existing MoAs between Bioversity International (Bioversity hereafter), FAO (the Treaty) and the host governments of the 5 ICGs
- The importance safeguarding and preserving the data stored within the CGRD
- The importance of implementing the Global Strategy for the conservation and use of coconut genetic resources

COGENT recommends that, until a new hosting arrangement has been established:

1. Bioversity will consider continuing fulfilling its role for up to 12 months as interim COGENT Secretariat Host, until the new hosting arrangement under APCC is established and a new coordinator is appointed, provided that funding can be made available
2. A dedicated staff member from Bioversity continues to fulfil the role of interim coordinator
3. Financial partners (donors) provide Bioversity with funding to support an ongoing interim COGENT Coordination, in the absence of Bioversity having sufficient resources to fund such an interim hosting
4. In addition to point 3, Bioversity considering providing a proportion of in-kind hosting support
5. CIRAD will continue, and SPC and other regional organisations begin to provide technical assistance in accordance with any MoAs that are bilaterally signed.
6. Even when a new hosting arrangement is established, Bioversity will separately consider how to transfer its ICG obligations under the CBD and Treaty.

The COGENT Interim Coordinator,
Vincent Johnson
Bioversity International, France

COGENT Chairman (2014-2017)
Dr Lalith Perera,
CRI, Sri Lanka



Nadi, Fiji 2nd November 2017

Official Recommendation Letter n°2017-2

New Hosting arrangement for COGENT Secretariat

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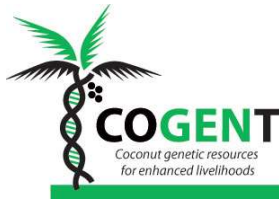
- Bioversity no longer has sufficient resources to continue hosting the COGENT Secretariat
- Recent CGIAR and Bioversity strategic realignments
- Bioversity does not possess the required core competences in coconut research

COGENT recommends that:

1. APCC provides hosting for the COGENT Secretariat, according to agreed contractual conditions in the attached annex
2. The new hosting arrangement embraces the global reach required to equitably embrace all five of the COGENT subnetworks
3. The ICGs' mandate will become the responsibility of the COGENT hosting organisation as soon as the transfer from Bioversity is complete
4. CIRAD will continue, and SPC and other regional organisations begin to provide technical assistance in accordance with any MoAs that are bilaterally signed.
5. Even when a new hosting arrangement is established, Bioversity will separately consider how to transfer its ICG obligations under the CBD and Treaty.

The COGENT Interim Coordinator,
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COGENT Chairman (2014-2017)
Dr Lalith Perera,
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Nadi, Fiji 2nd November 2017

Official Recommendation Letter n°2017-3 New COGENT Secretariat and Coordinator recruitment

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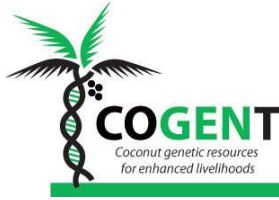
- that a new Global Strategy for the effective conservation and better use of coconut genetic resources (the Strategy) has just been released,
- the need to implement the Strategy at the global level over the next 10 years,
- the need to reinforce the capacity of the COGENT Secretariat to support the Network in implementing the Strategy
- that a new COGENT hosting arrangement has been identified and agreed upon by the proposed host and the COGENT SC

COGENT recommends that:

1. The new hosting arrangement for COGENT secretariat follows the agreed 2014 recommendation 1, regarding strengthening COGENT
2. The new Coordinator's position be recruited by an open advertisement, jointly drafted by the new Host and the COGENT chair, and hired within the Hosting arrangement by the COGENT Chair and a senior host representative.
3. The new Secretariat host involves the COGENT Steering Committee in the choice of the COGENT coordinator. The COGENT coordinator should be a senior researcher preferably working in the field of genetic resources conservation and breeding. The Coordinator should be appointed as a full time position, ideally should be supported by a full time assistant and a full time research officer
4. A fundraising strategy and process be developed by the Secretariat and the country-members, via a fundraising taskforce to increase capacity for securing funds from the CGIAR research programs (CRPs) through the new Host and from other donors, funding agencies and governments
5. COGENT promotes more collaboration between research institutes from member-countries
6. The new host representative and the Global Crop Diversity Trust to systematically participate in the crucial biennial SC Meeting
7. Annual work plan and budget with financial reporting be prepared during SC meetings

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Nadi, Fiji 2nd November 2017

Official Recommendation Letter n°2017-4 Strategy Implementation

The International Coconut Genetic Resources Network

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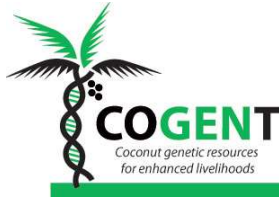
8. that a new Global Strategy for the effective conservation and better use of coconut genetic resources (the Strategy) has just been released
9. the need to implement the Strategy at the global level over the next 10 years
10. the need for resources to implement the Strategy

COGENT recommends:

1. revising the ITAGs' composition (teams and leaders) and nature (adding ITAGs if a new thematic area is deemed appropriate), and agreed by due process
2. A COGENT Strategy Implementation taskforce (SIT) is established, by remote voting, composed of the ITAG leaders, the COGENT Coordinator, Chair and Vice-chair, along with representatives of the ICGs and external observers
3. ITAG teams will develop appropriate sections of the strategy implementation timeline and budget for those activities relevant to their thematic area, and with reference to the work plan developed by Dr Bourdeix (see annex 4.1), and updating this in the process within the next 3-6 months after the ITAGs leaders have been appointed
4. A fundraising task force is established and proposals developed via the ITAG team task force (essentially ITAG team members and COGENT Secretariat)
5. Implementing the Strategy according to finalised timeline and budget (point 3 above) over the next 10 years and beyond
6. SIT managing the monitoring and evaluation of Strategy implementation, including mid-term review and 10- year evaluation with external evaluators
7. Planning for Strategy implementation beyond the 10-year time frame
8. In implementing the strategy, ITAG and their leaders will be interlinked where appropriate

The COGENT Interim Coordinator,
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COGENT Chairman (2014-2017)
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Nadi, Fiji 2nd November 2017

Official Recommendation Letter n°2017-5 Genebanks Audit

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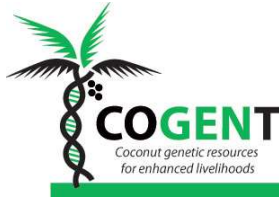
11. that a new Global Strategy for the effective conservation and better use of coconut genetic resources (the Strategy) has just been released,
12. the need to implement the Strategy at the global level over the next 10 years
13. the need to share good or best practices for benchmarking
14. the need to develop effective genebank management guidelines and standards
15. The need to ensure effective and meaningful levels of germplasm exchange

COGENT recommends:

9. Elaborating the Terms of Reference for a genebanks audit
10. Establishing an audit team composed of external conservation and breeding experts
11. The audit team implementing a comprehensive audit of international and targeted national genebanks, within the first two years from signing the COGENT Secretariat hosting agreement

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Nadi, Fiji 2nd November 2017

Official Recommendation Letter n°2017-6 Securing Genebanks' land tenure for the long term

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Considering:

16. The increasing threats from urbanisation, industrialisation, changes in land-use, and land-grabbing
17. The need for coconut genetic resources to be conserved in perpetuity

COGENT recommends:

12. Reviewing the land-tenure status of all the existing coconut genebanks, and giving priority to the ICGs
13. That land ownership should remain in the hands of the genebank's host government, and is protected in law

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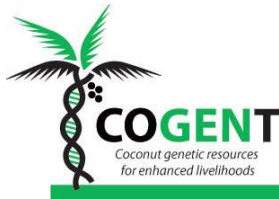
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Nadi, Fiji 2nd November 2017

Official Recommendation Letter n°2017-7 Biotic stress management

The International Coconut Genetic Resources Network

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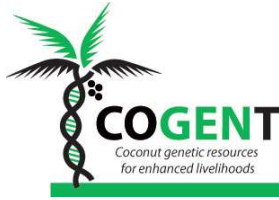
- That coconut germplasm and diversity is increasingly threatened by a range of biotic stresses, especially key pest and diseases, such as Rhinoceros beetle and phytoplasmas
- The increasing demand for coconut and the senility and declining productivity of coconut stands worldwide

COGENT recommends that:

18. Gene banks monitor their collections for pest and diseases
19. The Phytopathology ITAG develops an action plan for addressing the threats from phytoplasmas, Lethal Yellowing Disease (LYD) and other regionally important pathogens, including Coconut Rhinoceros Beetle (CRB), linked to coconut germplasm exchange and use

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Nadi, Fiji 2nd November 2017

Official Recommendation Letter n°2017-8 Accessing Mapping Populations

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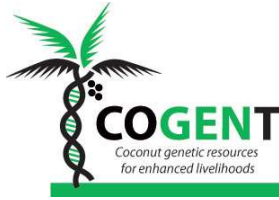
14. Many research teams from member-countries have shown interest in coconut genomics, ranging from coconut genome *de novo* sequencing and marker-assisted selection through to transcriptomics.
15. The progress in conventional breeding is hindered by the relatively low nut production and the long generation time in coconut.
16. Genomics studies will help to more effectively address crucial aspects of coconut breeding, such as disease resistance, genetic inheritance of the two kinds of dwarfism existing within the species, and the genetic components for high yielding varieties.

COGENT recommends:

1. Encouraging efforts in genomics research for the benefit of the whole coconut community
2. Delivering genomics tools and scientific advances as a public good to maximize the benefits for the coconut community
3. Considering as a main actor the COGENT international thematic group on coconut genomics. This group will develop a work plan gathering new initiatives in genome sequencing and the design of new coconut genomics tools
4. More collaborative projects between Côte d'Ivoire and other COGENT member countries are needed to make the best use of the mapping population

The COGENT Interim Coordinator,
Vincent Johnson
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COGENT Chairman (2014-2017)
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CRI, Sri Lanka



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Official Recommendation Letter n°2017-9

Safe germplasm exchange- *in vitro* zygotic embryos

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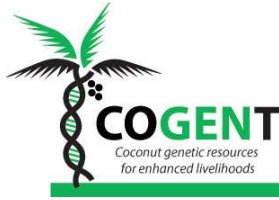
1. The relevance of germplasm exchange as one of the priorities of ICGs and the importance of this activity for research, increasing diversity and genetic improvement in the receiving countries
2. The low success rate of exchanging germplasm as zygotic embryos experienced so far
3. The increasing phytosanitary restrictions due to the pests and diseases that affect different countries in the world including where the ICGs are located

COGENT recommends:

1. Evaluating the exchange of germplasm from ICGs as plantlets (derived from *in vitro* zygotic embryo germination) in containers subject *in vitro* conditions throughout shipment and the corresponding survival of the plantlets during and beyond acclimatization in the receiving country.
2. To evaluate the possibility of cryopreservation of embryogenic callus as a basis for the establishment of an alternative of *in vitro*-cryo-ICG

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Nadi, Fiji 2nd November 2017

Official Recommendation Letter n°2017-10 Towards an upgraded Coconut Genetic Resources Database

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Considering that:

1. The present Coconut Genetic Resources Database (CGRD) software was created in 1992 and is becoming obsolete
2. Sharing Passport and Characterisation data between COGENT countries is the only way to have a global appraisal of the Status of *Ex situ* coconut conservation and make visible COGENT conservation efforts
3. The database is an important communication tool, which may help to develop large international project and obtain funding

COGENT recommends:

1. CGRD Software be upgraded and linked with national genebanks' and web-based databases
2. The communications ITAG develop proposals for a) upgrading software in point 1, and b) developing a farmers' planting material and variety database that has the potential to link to the upgraded CGRD
3. The international coconut descriptors to be revised
4. The wider use of the most modern survey and mapping tools to assist in the above initiatives

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Annex 4.1 « our plans »
Table of actions to be undertaken
according to recommendations for implementing the Global Strategy

COGENT Secretariat, R. Bourdeix, 7st December 2013, Appended by VB Johnson to COGENT SC recommendation 4 during 18th SC meeting, Fiji, November 2017

(CONFIDENTIAL- draft version, just to start thinking with COGENT representatives and contributors of the strategy)

Note: it is proposed to the international system to devote a yearly endowment fund of \$US 500,000 to global coconut conservation. This fund is included in the column “recurrent indicative budget”. Many projects, the budget of which also appears in “one time executive budget” could also be developed using this yearly endowment fund, depending on its amount.

Colours codes	
Feasibility studies	Geographical Information Systems
Field studies and plantings in ex situ genebanks (with part of breeding trials in farmer's fields)	Germplasm Information system
Laboratory studies	Genomics
Socio-economic and ethno-biology studies	
Communication actions	
Other	

Section	Priority	Project title	Project description	Time scale	One time indicative executive Budget	Recurrent Indicative budget KUSD	
3.1.3	1	Equipment and training for video making in COGENT genebanks	15 genebanks, a video camera and a microphone in each, and short training on video making for a curator or a communication officer.	2015-2016	52	0	1
3.1.3	2	Video making at COGENT Secretariat	See proposed list of videos in section 3.1.3 – Will try to make Media channels cover part of this budget.	2014-2018	30	0	2
3.1.3	1	Communication assistant for COGENT	Cost will depend on the location of the COGENT Secretariat, from 20 to 50 KUSD per year.	Recurrent	0	50	3
3.1.3	1	Develop a communication strategy for encouraging local stakeholders to be more involved in supplying quality germplasm.	3.7.2 Posters and videos, in link with section	2016-2018	10	0	4
3.1.3	2	Socioeconomic study how to integrate coconut conservation in landscaping of public places and tourism locations	10 countries, 10 internships	2015-2020	100	0	6
3.1.3.	2	Socioeconomic study on branding coconut products by varieties	3 countries, 3 products, 3 studies with internships	2017, 2019, 2021	15	0	5
3.2.3	1	Report on implementation of the Strategy	Once every year, always before COGENT SC meetings, on leadership of COGENT Secretariat.	Recurrent	0	3	7
3.2.3	1	Updating the Strategy	Once every 2 years, before COGENT SC meeting, on leadership of COGENT Chairman, 4 \$KUS each time.	2016, 2018, 2020,2022,2023	0	2	8
3.2.3	1	Face to face COGENT SC meeting	One every 2 years, piggy-backing with APCC meeting, 26 K\$US/meeting	2014, 2016, 2018, 2020, 2022,2023	0	15	9

Section	Priority	Project title	Project description	Time scale	One time indicative executive Budget	Recurrent Indicative budget KUSD	
3.2.3	1	Face to face meeting of one of the seven COGENT ITAGs per year	Choice of the ITAG will be done by COGENT during SC meetings.	2015-2023	0	25	10
3.2.3	1	Feasibility study on creating additional International genebanks in SAM and SEA regions	Visit 4 countries	2015	10	0	11
3.2.3	1	Feasibility study on creating another field International genebank in LAC and PAC region.	Visit 6 countries	2015	15	0	12
3.2.3	1	Feasibility study of creating an International field coconut genebank in AIO region	2 Visits in Madagascar	2015	10	0	13
3.2.3	2	Creating an additional International field genebanks in SAM and SEA regions	Convert two national genebanks into international genebanks	2015-2017	200	0	14
3.2.3	2	Creating an additional International field genebanks in LAC and PAC regions	Pacific Region: convert one or two national genebanks into international genebanks LAC Region: create a new International genebank	2016-2018	300	0	15
3.2.3	2	Creating an additional International field genebanks in AIO regions	Create a new international genebank, putatively in Madagascar	2016-2018	200	0	16
3.2.4	2	Study on sharing international resources between genebanks (accession level sharing)	Once every year, could be done by COGENT secretariat and submitted to the approval of COGENT SC and all COGENT representatives	Recurrent from 2015	0	3	17

Section	Priority	Project title	Project description	Time scale	One time indicative executive Budget	Recurrent Indicative budget KUSD	
3.3.1	2	ISO certification of a laboratory for controlled pollination	1 country (India, Côte d'Ivoire, Philippines or Sri Lanka?)	2015-2018	100	0	19
3.4.2	1	Socioeconomic study and internships to enhance diversification and self-funding of genebanks and estimate cost of conservation	20 countries, MsC internship, 6 months at 1000 USD per month) 5 countries , Phd Internships (3 years at 1000 USD per month)	2014-2023	192	0	18
3.3.2	1	Study on climbing techniques for securing workers and extending the lifespan of accessions in the field.	20 countries. Selection of 2 climbing techniques adapted to making hand-controlled pollination, Video guidelines, and equipment for 3 climbers in each country.	2016-2019	150	0	20
3.3.2	1	Improvement of the controlled pollination technique	2 countries. Improvement of pollination bags and pollen processing.	2015	30	0	21
3.3.2	1	Capacity building for controlled pollination	20 countries. "Pollination kits" delivered to 20 countries including all the equipment necessary for making reliable controlled pollination	2015	500	0	22
3.3.2		Research to reduce the vertical growth of Tall types.	Vietnam. 1 PhD internship	2015-2018	36	0	23
3.3.3		Upgrade country capacity and resources in order to successfully implement the embryo transfer protocol	10 countries Countries must be able to receive embryos or plantlets in the tubes and to grow them successively in the fields.	2015-2017	100	0	24
3.3.3		250 international transfers of coconut cultivars and accessions	20 countries. Those who accept to place the received germplasm on public domain and which have consistent facilities for hand-	2017-2023	250	0	25

Section	Priority	Project title	Project description	Time scale	One time indicative executive Budget	Recurrent Indicative budget KUSD	
			controlled pollination programmes will be favoured.				
3.3.4	1	Feasibility study on small cryoconservation units in national and international genebanks	20 countries Create small Cryopreservation facilities in each genebank or use the cryopreservation facilities already existing in the hosting country	2015	10	0	27
3.3.4	1	Research on pollen conditioning, packaging, conservation and cryopreservation.	Lyophilisator vs Cryopreservation; drying process using saline solutions, possibility of pollen to be sorted out several times from Cryo for international transfer.	2014-2015	5	0	26
3.3.4	2	Research on embryo conditioning, packaging, conservation and cryopreservation.	Vitrification, etc... How to transfer the method to small units managed by genebanks? Procedure to receive frozen embryos from genebanks.	2014-2016	50	0	26
3.3.4	1	Feasibility study on creating an international cryo-genebank for pollen and embryos.	Very probably from already existing facilities		5	30	28
3.3.4	1	Creation of an International cryo genebank for pollen	Very probably from already existing facilities		20	30	29
3.3.4	2	Creation of an International cryo genebank for embryos	Very probably from already existing facilities		20	30	30
3.3.4	2	Cryoconservation facilities for conserving pollen and embryos in countries hosting genebank	10 countries, 6000 \$US per country, for keeping embryos and pollen before transferring them to the Cryogenebank. Will use already existing facilities when available.	2015-2023	60	0	31

Section	Priority	Project title	Project description	Time scale	One time indicative executive Budget	Recurrent Indicative budget KUSD	
3.3.4	2	Research on Cryoconservation of embryogenic calluses	3 countries, 10000 \$US per country	2015-2017	30	0	32
3.3.1	2	Study on planting design for accessions and of possible reduction of accession size linked to pollen cryopreservation.	2 countries, \$US3000 per country Pollen cryopreservation could offer the possibility of reducing by a third or half the size of accessions in the fields. It could be also interesting to consider conserving palms of different ages in the same "accession". This will need to re-visit the concept of what is an accession.	2015-2017	6	0	33
3.4.4	3	Study of coconut reproduction patterns, pollination distance and designs for genebanks and Polymotu	1 country	2016-2018	15	0	34
1.1.2	3	PhD internship on archaeological data regarding coconut palm	Enhance understanding of genetic diversity for optimizing collecting activities. One country, 36 months, 2000 USD per month	2015-2017	72	0	35
1.1.2	3	PhD internship on germplasm transfers conducted during the colonial period	Enhanced understanding of genetic diversity for optimizing collecting activities. One country, 36 months, 2000 usd per month	2017-2019	72	0	36
3.5.1	1	Studies on identifying coconut palms, cultivation systems and coconut varieties by using satellite images and GIS systems.	Global level. Better appraisal of the real coconut cultivation zone, and optimization of collecting missions in farmer's fields	2014-2016	10	0	37
3.5.1	2	Studies on coconut palms in small house-gardens and cities	3 Countries. Global estimation of the number of palms planted in garden and cities. Optimization of collecting missions, and revision	2014-2016	6	0	38

Section	Priority	Project title	Project description	Time scale	One time indicative executive Budget	Recurrent Indicative budget KUSD	
		by using satellite images and GIS systems.	of the number of coconut palms existing at global level.				
3.5.1	2	Studies of zones where phytoplasma diseases are spreading by using satellite images and GIS systems.	5 Countries. Global estimation of the spreading of phytoplasma diseases, Optimization of collecting missions, and estimation of economic losses due to phytoplasma diseases.	2014-2016	15	0	39
3.5.1	1	Feasibility study and methodology for collecting pollen in farmer's fields	How to process the pollen during collecting mission?	2014-2018	3	0	40
3.5.1	2	Feasibility study on collecting on most isolated and endangered islands.	Find partners to collect other germplasm than coconut in the same collecting mission and reduce the cost for coconut research; make proposal for the islands to be collected in accordance with local policies; assess the possibility to ship a boat with small cryopreservation and lab facilities	2014-2018	7	0	41
3.5.1	1	Collecting compact Dwarfs and other special varieties	100 accessions introduced in genebanks with final average size of 40 palms (4000 palms planted, 30 \$US/palms; about 30 ha, 3 ha in 10 genebanks). Pollen collecting for cryo and direct use (50 g per accession, total 5 kg).	2014-2018	120	0	42
3.5.2	1	Collecting for pest and disease	100 accessions to collect and introduce locally in genebank with average size of 60 palms (6000 palms planted, 30 \$US per palm, about 50 ha, 5 ha in 10 genebanks). Pollen collecting for Cryo and direct use (50 g per accession, total 5 kg)	2014-2023	180	0	43
3.5.2	2	Collecting for filling geographical gaps	100 accessions to collect and introduce in genebank with average final size of 60 palms (6000 palms planted, 30 \$US per palm, about 50 ha, 5 ha in 10 genebanks). Pollen collecting for	2016-2020	150	0	44

Section	Priority	Project title	Project description	Time scale	One time indicative executive Budget	Recurrent Indicative budget KUSD	
			cryo and direct use.(50 g per accession, total 5 kg)				
3.5.2	3	Collecting on most isolated and endangered islands	100-200 accessions to collect, of which: - 40 accessions introduced in genebanks with average final size of 60 palms per accession (2400 palm planted, 30 \$US per palm, about 50 ha , 5 ha in 10 genebanks) ; - The remaining to be conserved only under cryo with final average size of 400 embryos and 50 g of pollen per accession (Maximum total of	2020-2023	200	0	45
3.5.4 2.5.8	3	Study on role of the coconut palm to mitigate coastal erosion	2 countries. Also during surveys of Islands endangered by climate change- Try to link with other partners such as CGIAR	2016-2023	12	0	46
3.6.3	1	Feasibility study on creating quarantine centres for pest and disease indexing	Objective: 2-3 quarantine centre worldwide	2015	6	0	47
3.6.3	1	First quarantine centre for coconut pest and disease indexing	Probably using already existing facilities with additional equipment.	2016	50	30	48
3.6.3	1	Second quarantine centre for coconut pest and disease indexing	Probably using already existing facilities with additional equipment	2018	50	30	49
3.7.2	1	Study and Internships in ethnology to assess farmer's knowledge on coconut reproduction mode and coconut germplasm	20 countries, MsC internships (6 months at 1300 USD per month) 5 countries , Phd Internships (3 years at 1300 USD per month)	2014-2019	192	0	50
3.7.2	1	Study and Internships in ethnology to	5 countries, MsC internship (6 months at 1300 USD per month)	2022-2023	0	0	51

Section	Priority	Project title	Project description	Time scale	One time indicative executive Budget	Recurrent Indicative budget KUSD	
		evaluate impact on previous study and communication strategy on farmer's knowledge on coconut reproduction mode and coconut germplasm					
3.7.3	2	Research on additional descriptors (morphology of flowers, roots, pollen, quality traits of kernel and water)	See research idea : http://www.cogentnetwork.org/research-ideas/new-coconut-descriptors Plus quality traits off kernel and water	2015-2017	40	0	53
3.7.3	2	Revision of the coconut descriptor list	2 countries	2018	5	0	52
3.7.3	1	Evaluation of the manpower, equipment and costing the observation of standard descriptors	In Sri Lanka and Côte d'Ivoire	2014-2015	3	0	54
3.7.4	1	Establishing fields experiments on Dwarfisms inheritances	5 countries, 800 palms per country, (4000 palms planted, 30 \$US per palm) .	2016-2023	120	0	55
3.7.4	2	Establishing fields experiments of Dwarf x Dwarf complex hybrids for tolerance to LYD and productivity	10 countries, 800 palms per country (8000 palms, 20 \$US per palm because part from open or assisted pollination).	2015-2023	160	0	56
3.7.4	3	Drought resistance tests conducted in vitro and in the field	1 country, 400 palms, \$US30 per palm including lab studies	2017-2004	12	0	57
3.8.1	1	Efficient data duplication system in genebanks	Expertises and visits of genebanks	2016-2018	10	0	58

Section	Priority	Project title	Project description	Time scale	One time indicative executive Budget	Recurrent Indicative budget KUSD	
3.8.1	2	Develop the "COCObank" software	For managing palm by palm data and controlled pollinations in genebanks	2015-2016	25	0	59
3.8.1	3	Feasibility study - Assessment of the interest of GRIN-GLOBAL software for COGENT	Expertise and exchange with s and visits of genebanks	2014	2	0	60
3.8.1	3	Research and equipment for numbering and identifying the palms in the field, and gathering the data in the field.	2 countries. GIS localisation of the palms, electronic devices to identify palms and collect data, carving numbers of the stems...	2015-2016	5	0	61
3.8.2	1	Develop the "COCOgis" software in replacement of CGRD	For international visibility of coconut conservation and use	2015-2017	20	0	62
3.8.2	1	Global management of data in CGRD and COCOgis.	For international visibility of coconut conservation and use. Preferably located in a COGENT country	Recurrent	0	5	63
3.8.2	2	Link COCObank to COCOGIS software	For easier information access	2015	5	0	64
3.8.2	2	Training 20 curators to COCObank and COCOgis systems	Meeting of 6-7 curators and trainers in a genebank	2016-2018	20	0	65
3.8.3	2	Database on and for farmers	Section "Planting material for farmers" and link to websites of 10 institutions of COGENT member-countries.	2014-2018	10	0	66
3.9.1	1	high-quality whole genome sequence	Two Dwarf-type varieties (complete draft genome 50 x coverage). Transcriptome	2014-2018	750	0	67
3.9.1	2	Internships in genomics applied to breeding	5 PhD internships, 36 monthes, 1000 USD/months	2015-2023	180	0	68
3.9.1	3	Core set of genotypes to be planted by the breeders interested	4 countries, 8 cultivars and 200 palms per country (800 palm planted, 30 \$US per palm, about 5.3 ha, 1.5 ha per genebank)	2015-2016	24	0	69

Section	Priority	Project title	Project description	Time scale	One time indicative executive Budget	Recurrent Indicative budget KUSD	
		by developing a genomic approach					
3.9.2	1	Field experiments for measuring associated trait data	3 countries. Planting of 3 experiments of 1000 palms each (3000 palms planted, 30 \$US per palm, about 21 ha, 7 ha per genebank).	2014-2016	90	0	70
3.9.2	3	Sample existing old genetic trials for future molecular analysis	3000 palms sampled for leaflets	2014,2016	6	0	71
3.9.2	3	Metagenomics analysis conducted on soils samples	100 soils samples in 10 COGENT genebanks	2015-2016?	10	0	72
3.9.3	1	Evolution of the molecular marker Kit and updating existing database	Change in DNA analyze technique, Analysis to be re-done on part of the database	2016-2018	30	0	73
3.9.3	2	DNA study of Sri Lankan accessions	900 analysis of 15 SRR markers (34 USD per palm)	2015-2016	31	0	74
3.9.3	2	DNA study of accessions of another genebank	900 analysis of 15 SRR markers	2016-2017	31	0	75
3.9.3	1	Checking the reliability of the controlled pollination process	600 analysis in 3 genebanks	2015-2022	20	0	76
3.9.4	1	Developing DNA analysis from pollen	DNA extraction from pollen for SSR analysis	2014	3	0	77
3.9.4	2	DNA analysis in farmer's fields	1200 palms from 200 populations	2015-2023	41	0	78
3.10	2	Cogent Coordination	Full time	2015-2023	0	72	79
3.10	2	Scientific assistant for COGENT	Full time – will depends on the location of COGENT Secretariat	2015-2023	0	0	80
4.0	1	Contribution of the CGIAR system to	The funding will be shared on an accession basis on the proposition of COGENT	2015-2023	0	500	81

Section	Priority	Project title	Project description	Time scale	One time indicative executive Budget	Recurrent Indicative budget KUSD	
		global conservation of the coconut palm	based on well-defined quality criteria, at the maximum rate of 300 USD per accession per year. During the first years, only some accessions will meet the criteria to be eligible to this funding. The remaining of this funding will be used for capacity building and implementing the projects listed in this table. It is expected that within the decade, the number of accessions reaching the quality standards and eligible to this fund will be at least tripled.				
4.1		Total			5319	825	