

REPORT 2017

Building capacities for biodiversity and development



18-05-2018, final submitted

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Cover page

Sampling of insect diversity in tropical rain forest,

ACRONYMS

AAU	Addis Ababa University, Ethiopia
ABS	Access and Benefit Sharing
ACC	Accord-Cadre de Coopération
BES	Biodiversity and Ecosystem Services
BCCM	Belgian Coordinated Collection of Microorganisms
BGM	Botanic Garden Meise
BIP	Biodiversity Indicators Partnership
BTC	Belgian Technical Cooperation
CBD	Convention on Biological Diversity
CBD NFP	National Focal Point to the Convention on Biological Diversity
CHM	Clearing House Mechanism
CITES	Convention on International Trade in Endangered Species of wild fauna and flora
CNEDD	Conseil National de l'Environnement pour un Développement Durable, Niger
COHERENS	Coupled Hydrodynamic Ecological Model for Regional Shelf Seas
COMIFAC	Commission des Forêts d'Afrique Centrale
COORD	Programme Coordination and Management
COP	Conference of the Parties
COPBH	Belgian Community of Practice on Biodiversity & Health
CRH-U	Centre de Recherche en Hydrobiologie-Uvira, D.R.Congo
CSB	Centre de Surveillance de la Biodiversité
DDD	Direction de Développement Durable
DGD	Belgian Development Cooperation
EDIT	European Distributed Institute of Taxonomy
GAP	Ghent University Africa Platform
GBIF	Global Biodiversity Information Facility
GEO BON	Group on Earth Observations Biodiversity Observation Network
GIS	Geographic Information System
GTI	Global Taxonomy Initiative
ICCN	Institut Congolais pour la Conservation de la Nature, Kinshasa, D.R. Congo
ICT	Information and Computer Technology
IEBR	Institute of Ecology and Biological Resources, Hanoi, Viet Nam
IFS	International Foundation for Science, Sweden
IMAB	Inventories Monitoring and Assessment of Biodiversity
INECN	Institut National pour l'Environnement et la Conservation de la Nature, Bujumbura, Burundi, maintenant OBPE
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IRD	Institut de Recherche pour le Développement
ISP Mb-Ng	Institut Supérieur Pédagogique de Mbanza-Ngungu, D.R. Congo
LEGERA	Laboratoire d'Ecologie et de Gestion des Ressources Animales, D.R. Congo
LEM	Law Enforcement Monitoring
MAB	UNESCO Man and Biosphere programme
MATEE	Ministère de l'Aménagement du Territoire, de l'Eau et de l'Environnement, Morocco
MRV	Measuring, Reporting and Verification
MUMM	Management Unit of the North Sea Mathematical Models
MUNI	Masaryk University, Czech Republic
NGO	Non-Governmental Organisation

NP	Nagoya Protocol
NBSAP	National Biodiversity Strategy and Action Plan
NM-AIST	Nelson Mandela African Institution of Science and Technology, Tanzania
NWU	North-West University, South Africa
OBPE	Office Burundais pour la Protection de l'Environnement (avant : INECN)
PEET	Partnerships for Enhancing Expertise in Taxonomy
PM	Person Month
PNKB	Parc National de Kahuzi-Biega
PN	Parc National
POL	Policy Support
PTK	Portal Toolkit
RA	Regional assessment
RBINS	Royal Belgian Institute of Natural Sciences
RDC	D.R. Congo
RMCA	Royal Museum for Central Africa
RZSA	Royal Zoological Society of Antwerp
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SDSN	Sustainable Development Solutions Network
SGEDD	Secrétariat Général à l'Environnement et Développement Durable
SSC	South-South Cooperation
TCT	Target cross-linking tool
TST	Trans Sectorial Team
UAC	Université d'Abomey- Calavi, Benin
UA	Universiteit van Antwerpen, Belgium
UB	Université du Burundi
UL	University of Limpopo, South Africa
ULB	Université Libre de Bruxelles, Belgium
ULg-GxABT	Université de Liège – Gembloux Agro-Bio Tech
UNIGOM	Université de Goma
UNIKIS	Université de Kisangani, D.R. Congo
UNILU	Université de Lubumbashi, D.R. Congo
UNZI	University of Zimbabwe
UOB	Université Officielle de Bukavu, D.R. Congo
UWC	University of the Western Cape, South Africa
VLIR-IUC	VLIR Inter-university Cooperation
VLIR-NSS	VLIR North-South-South cooperation programme
VLIR-SI	VLIR South Initiative
VLIR-STI	VLIR Short Training Initiative
VLIR-UOS	Flemish Interuniversity Council, Development Cooperation, Belgium
VUB	Vrije Universiteit Brussel
WVOB	Vlaamse Vereniging voor Ontwikkelingssamenwerking en technische Bijstand, Belgium
WCMC	UNEP World Conservation Monitoring Centre

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The year 2017, 4th year of the five-year programme, was a very intensive year, with a culmination of interventions in the Belgian partners countries to better support the CBD strategy 2020 and the SDGs, especially SDG 13-15 related to SDG 1 in particular, and a high production of outputs to translate science into policy and decision support. One important milestone was the midterm evaluation (MTE) carried out by 3 independent international experts commissioned by BELSPO. The MTE evaluated CEBioS and all strategic objectives positively and recommended financing the next phase of five years (2019-2023). Recommendations were addressed towards CEBioS, RBINS, DGD and BELSPO and a management response was prepared towards the end of 2017. The MTE was approved in February 2018 by the strategic committee. Some of the recommendations were e.g. to integrate the Theory of Change into the programme formulation for phase II by means of externally moderated workshops (e.g.: 26-28 February 2018), to work on a more lean and readable reporting and planning (we already implemented with the present report) or, in a mid- or long term perspective, to work more on a results and outcome base rather than activities and output, and to increase the capacities in North and South on the methodologies of raising awareness and having impact.

SO1 (knowledge, science)



Created by Neveesh Khattar
from Noun Project

Global taxonomy Initiative (GTI) and AbcTaxa

The 14th *external* GTI call for individual grants for taxonomic training was launched early 2017. 19 grantees from Benin (4), Burundi (1), Cambodia (1), Côte d'Ivoire (1), D. R. Congo (4), Morocco (1), Rwanda (2), Senegal (1), Uganda (1) and Vietnam (3) came for a one month stay in Belgium to work on topics related to taxonomy as well as ecosystem services related to development. Under the 14th

internal GTI call for training in the South, researchers from the RBINS carried out capacity-building projects in Benin (Oligochaetes), and in Vietnam & Cambodia (entomo-diversity). In 2017, we organised our first GTI uptake meeting workshop in Vietnam to share the scientific achievements of GTI research projects and other European initiatives with the national and regional competent authorities of Vietnam. Later

on, all experts present at the uptake meeting jointly co-produced a policy brief entitled 'Vietnam, a champion for insect biodiversity: A win-win commitment'.

AbcTaxa volume 16 on diatoms from the Congo and Zambezi Basins and volume 17 on edible mushrooms of Haut-Katanga (DR Congo) were published in 2017.

Institutional Cooperation

Institutional cooperation with OBPE (Burundi) and UAC (Benin)

Both institutional cooperation with OBPE (Burundi) and UAC (Benin) were due to end by the middle of 2017. Based on positive evaluations this Institutional cooperation has been prolonged for the period 2017 – 2018. In 2017 solar panels have been installed at OBPE and inaugurated by the Ambassador for Belgium and the Minister of

Environment. Despite the political situation in Burundi, OBPE performed well for all indicators. CEBioS and OBPE published a lexicon about Kibira N.P. (144p.). Concerning UAC (Benin), the research is evolving well on the ecosystem of Penjari N.P. A lexicon (141p.) about the habitats, fauna and fire of Penjari N.P. was released.

Cooperation in R.D. Congo with ICCN, universities and CSB

In 2017, standardized criteria were used to characterize habitats according to their various dynamic stages along transects where mushroom diversity inventories and ethno-mycology were carried out during a field mission and where they will be repeated later in the Virunga National Park. Other activities included in D.R. Congo the assessment of the Ruzizi Natural Reserve for its biodiversity in view of a rehabilitation programme. Habitats, fauna and mycological component were taken into account. In the framework of promoting Ecosystem Services, we implemented the 2nd phase of the "Mycologists Network of the Great Lakes Region of Africa (RMGL), funded by BELSPO in the context of strengthening the international

networks of the Federal Scientific Establishments (ESFs), including the RBINS. The final workshop was organised at the UNIGOM in June 2017 under the RBINS coordination. The Botanic Garden Meise was involved as a northern partner while the Southern beneficiaries were: UNIGOM, UOB, OBPE, UB, UR (www.EFTA-online.org). The success of these activities became an asset of the acceptance by "ARES" of a new and more important research and development project (2018-2022), which ensure durability of the former results of the network. It will not only complete inventories and ecology of edible mushrooms throughout the Albertine rift, but also determine their nutritional qualities as well as the monetary value.

Under these criteria, the most interesting species will be tamed. A dozen representatives of local NGOs have

joined the project in order to vulgarize the results.

An 'Accord-Cadre de Coopération' (ACC) with the 'Centre de Surveillance de la Biodiversité' (CSB, R.D. Congo, Kisangani), was signed at the beginning of 2017 in order to strengthen the CSB in its role of secondary CHM for R.D. Congo. This ACC allows both institutions to cooperate more, in agreement with the Congolese Ministry in charge of Environment. Several activities have been developed with the CSB in 2017, among which the organisation of a series of workshops and specialised trainings from 25 September – 4 October as the most important one. About 100 participants from all over the country attended highly appreciated sessions on awareness building for school children, the Nagoya Protocol, Project Cycle Management, Scientific Communication, the governance of Biodiversity, Measuring Reporting and Verification of biological data, searching for funding, the importance of communication and the Clearing House Mechanism, presented by the CEBioS team members together with colleagues of VVOB-RDC, the Directorate of Sustainable Development of the National Ministry for the Environment of the DRC, ICCN and School Inspectors of the Congo Central Province, mediated by VVOB. Another highlight is the participation of the CSB with a stand and presentations at the '4^{ième} Edition de la Semaine de la Science et des Technologies' in Kinshasa in April 2017, with over 8000 attendees. The collaboration with the CSB, especially when it comes to trainees and scientific support, is strongly interwoven with the activities of the VLIR-IUC with UNIKIS.

Marine modelling in Peru, Vietnam and Benin

The institutional cooperation on marine modelling with IMARPE (Peru) has reached its end and a final workshop with closure meeting was held in March 2017 at the premises of the University of San Marcos Peru, which resulted in the co-production of a policy brief with recommendations towards decision makers. Concerning the work in Vietnam, a Belgium based training workshop

about sedimentation was held in July 2017. A three-week modelling course: "Introduction to marine modelling" was held in September 2017 in IRHOB, Benin. The projects with Peru, Vietnam and Benin are registered on the UN-website to emphasize our commitment to achieve the SDG 14 on marine life, see <https://oceanconference.un.org/commitments/>.

External project, EVAMAB



The EVAMAB project, funded in the framework of a cooperation agreement between Belspo and UNESCO-MAB, started in 2017. It will last until mid-2019. The main activities in 2017 were a literature review of ecosystem services assessment tools for MAB sites and fieldwork by MSc students in Uganda and Benin, co-supervised by CEBioS. CEBioS is the coordinator of the project and 75% of the salary of a CEBioS scientific member is funded by the project.

SO2 (information, CHM)



SO2 promotes the digital aspects of biodiversity awareness raising and information provision. A CHM call was launched, while the projects of previous call were implemented. Five countries (Benin, D.R. Congo, Morocco, Niger, and Uganda) started projects under the 2017 call for projects. A regional CHM workshop for Francophone partners to inform them about the results of COP13 was organised in Togo. CEBioS organised and/or participated in national CHM workshops in Gabon (South-South project with Morocco), Jordan (Palestinian participants), DR Congo.

CEBioS was active in the further development of the Aichi targets tool in the framework of the EU and INFORMEA, several international CBD meetings concerning the development of CHM (new software, awards...) as well as SBSTTA 21 and the 10th WG 8J meeting of the CBD. Several demands came to use the digitalised historical archives at RBINS. For Virunga N.P. Han de Koeijer as co-editor published a booklet "Virunga, archives and collections of an outstanding national Park" in collaboration with Patricia Van Schuylenbergh of RMCA.

SO3 (awareness)



A call 'public awareness' was launched for the partner countries. Five partners were granted funding: 2 in DR Congo, Benin, Niger and Togo. Burundi

continued the projects under the 2014-2016 as well as the 2017-2018 institutional framework. CSB (DRC) participated in the "4^{ième} Edition de la

Semaine de la science et des technologies”, Kinshasa. A special MRV call for raising awareness on results of MRV projects in 2016-2017 granted 14 projects funding. The cooperation with VVOB on awareness raising in pilot schools in the region of Kinshasa continued through a project on established indicators and a baseline study on biodiversity awareness in the region of the pilot schools as well as in another region near Matadi. Results

were presented during the large training session in Kisangani. It resulted a.o. in cooperation prospects in Tschopo region. CEBioS presented its activities at the European Conference for Tropical Ecology (Brussels, February). A small game for the general public was created together with the museology department of RBINS about the importance of biodiversity in developing countries. It will be tested in 2018 in some fairs and events in Belgium.

SO4 (policy mainstreaming)



CEBioS participated to several international meetings: the CHM- Informal Advisory Committee to the Secretary of the CBD meetings; SBSTTA 21 as member of the Belgian Delegation with pilot role for several agenda items, as well as 3 IPBES workshops. CEBioS continued the process with Enabel headquarters to establish an 'Accord Cadre de Coopération', stipulating the possibilities of mutual assistance in partner countries and in project development, training and sensitising of staff on biodiversity related topics, assisting with environmental impact studies and so on. Enabel's local representations at Bujumbura have been met and made familiar with CEBioS as well as with the services the CSB could offer to take environmental factors into account at local project level. There was

an active participation in the Joint Strategic frameworks for Burundi, Benin, DR Congo and more. In Burundi a meeting was organised with Belgian ANCs and Enabel to look for synergies in the different programmes. CEBioS attended several events to expand its network and to increase its visibility in the scientific and development cooperation communities (ACROPOLIS workshop - DGD, GAP networking event- UGent, Tropical Ecology Conference- VUB, The Future of University Development Cooperation seminar-KU Leuven, launch of STEDE – Leuven, lecture by Jeffrey Sachs (SDSN)- Leuven, several 'ontwikkelingsdebatten' – Brussels, the preparation of a FED-tWIN discipline, the exploration of contacts with WWF Belgium, the RZSA, ULB-Coopération...).

SO5 (MRV)



The 11 MRV projects from DR Congo – corresponding to the second MRV call – were implemented in 2017. A closing workshop was organized in Kisangani, back to back with the series of training at CSB. It gave the opportunity to all projects leaders to present their work and to produce together three thematic policy briefs (bushmeat, fisheries, charcoal). A paper is in preparation to summarize the discussions of the workshop and address suitable indicators for the three themes. The policy briefs were disseminated during a mission in DRC in December. They will

also be disseminated in the framework of awareness raising projects (under SO3.2) that aimed at disseminating the outputs of the 15 MRV projects (4 from the 1st call -2015 and 11 from the 2nd call-2016). A call for projects was launched in November for the English-speaking partner countries. Eleven projects from six countries (Ghana, Kenya, Palestine, Rwanda, Tanzania, Uganda) were selected and will be implemented until August 2018. A closing workshop is foreseen in Uganda in October 2018.

SO6 (Nagoya Protocol)



CEBioS and NFP were involved in several meetings on the Nagoya Protocol in Belgium and elsewhere. Replies to several requests on information about how to contact people in the countries to obtain PIC and MAT. OBPE in Burundi organised a participative process to reach a protocol of cooperation with the Ministry of health and the organisation of 'tradipraticiens' in order to valorise the use of traditional knowledge on medicinal plants in the spirit of the Nagoya protocol. This, a.o. was reported at the International Conference on Tropical Ecology in Brussels, Febr. '17. Policy briefs were prepared to facilitate the adaptation of laws related to the NP by policy makers. In RDC, Kisangani, CEBioS and CSB organised together with Congolese scientists and coordinated input by Belgian researchers a seminary with the Ministry of Environment on the implementation of the Nagoya protocol in RDC.

SO7 (coordination and management)

Planning of 2018 and reporting of 2017 went smoothly, albeit with some delay due to processes related to the mid-term evaluation. The functioning of CEBioS in 2017, which is the 4th year of the five-year plan 2014-2018, has reached 100 % expenses before December 2016. The programme is now at maximum speed. The enhanced visibility and connection of the CEBioS programme with external actors and projects promoted a giving dynamics of cooperation and expertise development with increasing national and international recognition. The mid-term evaluation (MTE) by three

international experts commissioned by Belspo went smoothly and was positive about all strategic objectives for the period 2014-2018. The MTE made recommendations for CEBioS, DGD and Belspo and all explained how to achieve this in a management response, validated at a strategic committee in February 2018. The MTE strongly recommended continuing funding of CEBioS for the second phase of 5 years (2019-2023).

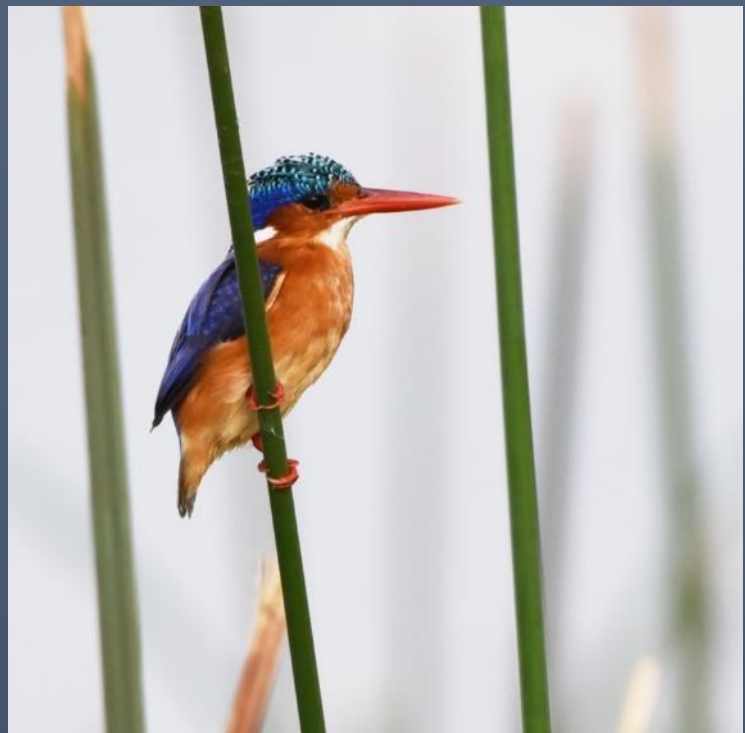
Luc Janssens de Bisthoven
and CEBioS team, 18-05-2018

Part I

Some facts and Figures



Created by Liza Prado
from School Project



PART I – SOME FACTS AND FIGURES

Background

The specific objectives of the programme are to build capacities to study and monitor biodiversity, share scientific and technical information and increase awareness (as well as understanding and ownership) of the importance of biodiversity for development.

The programme directly supports the implementation of the UN Convention on Biological Diversity in/by developing countries and of related national, regional and international biodiversity policy.

The 2014-2018 programme includes 6 strategic objectives (SO):

1. To strengthen the **scientific and technical knowledge base** on biodiversity and on its linkages with ecosystem services and poverty reduction;
2. To enhance the **information base** on these issues and on associated governance processes;
3. To **raise awareness and communicate** on the importance of biodiversity and ecosystem services for poverty reduction and sustainable development, and on associated governance processes.

The RBINS, with both its partners and DGD-D2.4. and other departments aims:

4. To improve the **mainstreaming of biodiversity and ecosystem services** in policy sectors that have a high relevance for development;
5. To improve the knowledge on the **measurement, reporting and verification (MRV)** of policy choices and activities linked to biodiversity and ecosystem services;
6. To raise awareness on, and build capacities for, the implementation of the **Nagoya Protocol (NP) on Access and Benefit Sharing (ABS)**.
7. The last programme component is the **Programme Coordination and Management (COORD)** devoted to coordination and management, as well as transversal issues such as project communication, networking and outreach.

The Convention on Biological Diversity (CBD)

The objectives of the CBD are:

- the conservation of biodiversity
- the sustainable use of the components of biodiversity
- the fair and equitable sharing of the benefits arising from the use of genetic resources.

Our programme of work contributes to these objectives and to the following articles of the Convention:

- identification and monitoring of biodiversity (Article 7)
- research and training (Article 12)

MAIN MILESTONES IN 2017

1 JANUARY TO 31 DECEMBER 2017

Table 1: milestones of the CEBioS programme in 2017.

Date	Milestones	SO
23.01	Han de Koeijer participated at '30 Years Bananas Transit Center', Leuven, Belgium	SO4
7.02	CEBioS staff gave several presentations at the European Conference of Tropical Ecology, Brussels, Belgium	SO1 /3
6 – 10.03	M-L Susini Ondafe gave a national training on the use of the PTK for the contributors to the CHM in Libreville, Gabon	SO2
19-27.03	Mission Burundi planning 2017-2018 by Han de Koeijer	SO1-6
15-17.03	Training on the Bioland Tool at RBINS, for CEBioS staff	SO2 + coord
March	Katrijn Baetens and Luc Janssens de Bisthoven at closing workshop, IMARPE and San Marcos University, Peru.	SO1
3 – 6.04	M-L Susini Ondafe and L Janssens de Bisthoven (along with RBINS scientists) organised and took part in the GTI uptake meeting in Vietnam	SO1
8-15.04	IGAD CHM meeting Horn of Africa by Han de Koeijer	SO2
16-18.04	Participation of CSB at the Semaine de la Science et des Technologies à Kinshasa : mainstreaming of biodiversity awareness in DRC with CEBioS support	SO3
26 – 28.04	M-L Susini Ondafe participated in the 5 th meeting of the IPBES task force on Capacity-building, in Trondheim, Norway (funded by BELSPO)	SO4
18-04 – 1-05	F. Muhashy Habiyaremye. Mission in Benin: Follow-up of the activities of the partnership between the RBINS and the UAC in the Pendjari National Park. 2017 Program Update	SO1
2 – 5.05	M-L Susini Ondafe and Han De Koeijer organised and took part in the regional CHM workshop for the French speaking African countries partner of the Belgian Cooperation, Lomé, Togo	SO2
24.05	E. Biringanine Mugoli et C. Masumbuko Ndabaga (UOB). Mission in the Itombwe Natural Reserve on the ecology of edible mushroom species.	SO1
15.05	Bee-Day with National Focal point CBD, RBINS, Brussels	SO3
22.05	Presentation at SUEZ/GDF on actual situation of Biodiversity in Belgium by Han de Koeijer	SO3.3
30-05- 13-06	F. Muhashy Habiyaremye. Mission in DRC: coordination of the implementation of the 2 nd phase of the project funded by BELSPO to promote the mycologists networking in the Great Lakes Region of Africa	SO1
12 – 14.06	M-L Susini Ondafe participated as a facilitator in the 4 th Pan-European IPBES Stakeholder Consultation (PESC4) (funded by the Belgian Biodiversity Platform) in Vácrátót, Hungary	SO4
19-20.06	Participation by CEBioS at the 'Mission Economique pour le développement du tourisme durable en RDC' at RMCA	SO3

29.06	Seminar at DGD: The Nagoya Protocol and its application in the context of development cooperation	SO6
15.06-4.07	Field work in Tanzania, Lake Manyara, in the framework of the EVAMAB project- part Lake Manyara + Participation to the NGA meeting 15-16 June by Anne-Julie Rochette	Ext. - EVAM AB
24-27.07	CHM training Jordan/Palestine State by Han de Koeijer	SO2
21-23.08	MEA INFORMEA meeting, Montreux, Switzerland	SO2/4
30.08	Meeting with French CHM focal point	SO2/4
18-19.09	EU meeting on 6 th national report	SO2/4
20-09	CEBioS staff, DGD, Belspo: Participation in the workshop of mid term evaluation of the implementation of the DGD / CEBIOS program (2014-2018)	SO1
18.08 -6.09	Mission by Anne-Julie Rochette in Benin to supervise a KUL MSc student in the framework of EVAMAB project – part Pendjari	Ext. - EVAM AB
4-8.09	CHM training at RBINS	SO2
18-19.09	Mid-term Evaluation interviews of CEBioS staff	SO7
25.09-4.10	Series of workshops and specialised trainings at the CSB, Kisangani	SO1-7
8-16.10	Official inauguration of solar panels at OBPE, CSC Burundi	SO1-6
18-19.10	M-L Susini Ondafe participated in 19 th meeting of the DAC Network on Environment and Development Co-operation (ENVIRONET), Paris, France	SO4
26.10	Training scientific writing for trainees (GTI, FISHBASE, Kisangani trainees, ABIC, MEISE...	SO1
October- November	Production of Policy Briefs on Bushmeat, Charcoal and Fisheries in DRC	SO5
28-30.11	M-L Susini Ondafe participated, as a facilitator and member of the IPBES Capacity-building task-force, in the 1 st WABES regional expert workshop in Abidjan, Côte d'Ivoire (funded by BELSPO)	SO4
15.11	EU expert group on WG8J, Brussels, Belgium	SO2/4
5.12	M-L Susini Ondafe gave a presentation on the taxonomy and the Belgian GTI to Master students from the University of Ghent	SO1
11-14.12	M-L Susini Ondafe and Han de Koeijer participated in the 21 st meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA21)	SO4
November- December	Participation at the Strategic Dialogues for Vietnam, DRC, Uganda	SO7
6-7.12	CHM-IAC, Montreal, Canada, Han de Koeijer	SO2-3
12-16-12	WG8J 10 th meeting, Montreal, Canada, Han de Koeijer	SO2/4
20.12	Publication "Virunga, Archives and collections of an outstanding National Park" Han de Koeijer co-editor	SO2
08 -12 – 14 01 2018	J. C. Rizinde Hakizimana (UNIGOM). Mission in the Northern sector of the PNVi to establish transects where to carry out inventories of diversity of edible mushroom and perform ethno-mycology	SO1

WHERE WE WORK

In 2017, we worked with many countries around the world, implementing capacity building activities ranging from individual and group training to supporting partner institutions manage their day-to-day activities.

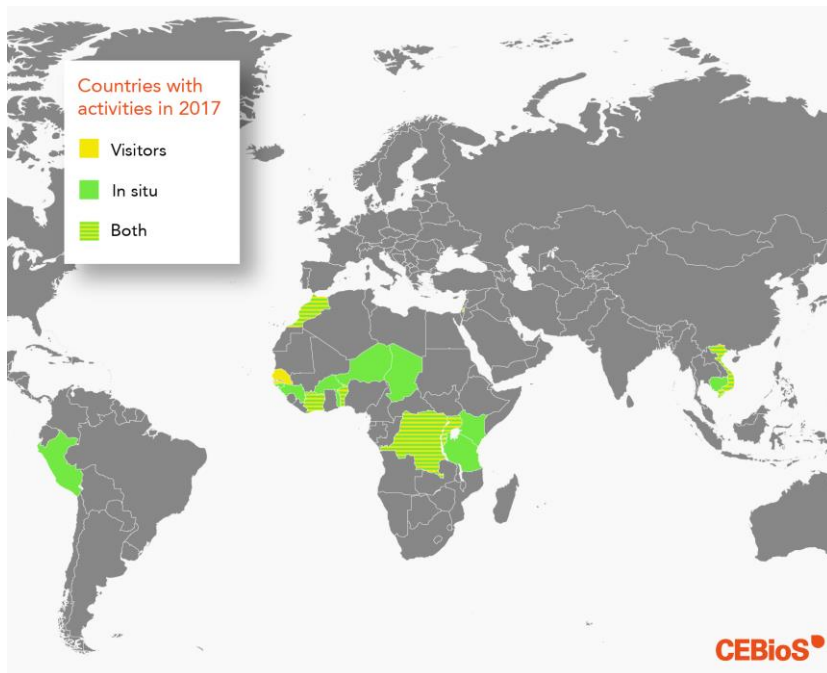


Fig. 1. World maps showing places of interventions of the CEBioS programme (above) and projects with external funding (under).



Projects per country

Table 2: projects per country, implemented in 2017.

Country	Project/activity	Strategic Objective
Benin	Institutional cooperation with Université Abomey-Calavi (UAC)	1, 2, 3, 5
	GTI external, 4 researchers hosted in Belgium	1
	GTI internal: Taxinomie, systématique et biodiversité des oligochètes des eaux souterraines du Bénin by P. Martin	1
	Entry level course "Introduction to marine modeling" in IRHOB	1
	LABEF, UAC (Bénin): Accueil et encadrement d'un étudiant de master belge dans le cadre du mémoire de master intitulé « Payments for ecosystem services: an assessment of existing and possible reward mechanisms for ecosystem services in the Pendjari Biosphere Reserve, Benin »	Ext-EVAMAB
	Sensibilisation à la lutte contre la déforestation et la pollution autour du parc transfrontalier du W (Nord-Est) République du Bénin	3
Burundi	Institutional cooperation with Office Burundais pour la Protection de l'Environnement (OBPE)	1, 2, 3, 5, 6
	GTI external, 1 researcher hosted in Belgium	1
R.D. Congo	GTI external, 4 researchers hosted in Belgium	1
	Signature of an Accord-Cadre de Coopération avec le Centre de Surveillance de la Biodiversité (CSB), Kisangani, R.D. Congo	1, 2, 3, 5
	Vers la valorisation des connaissances traditionnelles des communautés locales et autochtones à Kinshasa (LBE-UNIKIN)	3
	Exploration mycologique du secteur Nord du Parc National de Virunga (UOB)	1
	Collecte des données sur la diversité des champignons comestibles et leur écologie dans la Réserve Naturelle de l'Itombwe (RNI) (UNIGOM)	1
	Sensibiliser les jeunes à la sauvegarde de la biodiversité et mener des actions dans une perspective de développement durable dans 4 écoles secondaires en RDC (IDAY)	3

Sensibilisation et éducation sur la protection de la forêt claire de type Miombo à travers la distribution de bandes dessinées intitulées : « Miombo, richesse méconnue », et d'un guide d'éducation environnemental (MIKEMBO)	3
Etude de référence sur les effets de la sensibilisation dans les écoles techniques agricoles de Kongo Central et leur milieu environnant sur les apports de l'agriculture durable à la biodiversité. (VVOB-DDD)	3
Organisation de formations et d'ateliers dans le cadre des activités CHM, MRV et le Protocole de Nagoya en RD Congo, 25 sept - 4 oct. 2017 (CSB)	2-3-5-6
Préfinancement des voyages domestiques d'Anaclét Lisiko Boyemba (CSB - UNIKIS) pour stage GTI en Belgique en novembre 2017 (CSB)	1
Participation à 4ième édition de la Semaine de la Sciences et des Technologies, Kinshasa 16,17 & 18 avril 2017 (CSB)	3
Compléter l'état des lieux des connaissances de la "Réserve Transfrontalière de la Ruzizi" (UOB)	1
2e phase du projet "Réseau des Mycologues de la Région des Grands Lacs d'Afrique (RMGL) (UNIGOM)	2
Préfinancement des voyages domestiques de quatre stagiaires du CSB et de l'UNIKIS en vue de leurs stages en Belgique (CSB)	1,2
Réactivation de l'intranet au CSB et UNIKIS (CSB)	2
Sensibiliser les jeunes à la sauvegarde de la biodiversité et mener des actions dans une perspective de développement durable dans 4 écoles secondaires en RDC	3
Sensibilisation et éducation sur la protection de la forêt claire de type Miombo à travers la distribution de bandes dessinées intitulées : Miombo, richesse méconnue, et d'un guide d'éducation environnementale	3
Exploitation des poissons à Kisangani et ses environs en République Démocratique du Congo (RDC) (C.S.B)	5
Les pêches durables dans l'hinterland marécageux et fluvio-lacustre le long du fleuve Congo, rivière Ikelemba et du lac Tumba de 2013 à 2016 (NODRI ONGD/ASBL + ISP/Mbandaka)	5

	Renforcement des Capacités de l'Administration locale (Ministère de l'Agriculture, Pêche et Elevage, Ministère de l'Environnement et la police lacustre) en matière de suivi de la gestion de la pêche. (C.R.H / Uvira)	5
	Suivi et caractérisation de la pêche au Lac Kivu (UOB + Coordination Provinciale de l'Environnement)	5
	Diversité ichthyologique des espèces capturées dans les rivières du Grand Kasai en RD. Congo - Cas des rivières Lubilanji, Lokenye et Lomami (SCRID-AGRI/ASBL + UOM)	5
	Projet de valorisation des données et de mise au point d'indicateurs de suivi de la Biodiversité en RDC: cas de la Viande de brousse (C.S.B + Ministère de l'Environnement, Direction de Développement Durable)	5
	Exploitation de la viande de brousse dans la région forestière de Kisangani (RD Congo, Kisangani) (C.S.B + Coordination Provinciale de l'Environnement)	5
	Les menaces des crocodiles (<i>Crocodylus niloticus</i> et <i>Mecistops cataphractus</i>) et les stratégies de leur conservation durable sur le littoral congolais du lac Tanganyika, République Démocratique du Congo (RDC) (CRH Uvira + Makerere University Kampala (MUK), Uganda)	5
	Contribution à l'étude floristique des espèces végétales utilisées dans la production de charbon de bois (UNIKIN + ICCN)	5
	Contribution à l'étude de la filière bois énergie au Kasai Oriental, RD. Congo. Cas du bassin d'approvisionnement de la Lubi (UOM + SCRID-AGRI/ASBL)	5
	Le développement d'agroforêts comme alternative pour valoriser la production durable du charbon de bois autour de la ville de Boma dans le territoire de MUANDA (ICCN + Supervision de l'Environnement et Développement Durable de Muanda)	5
Ivory Coast	GTI external, 1 researcher hosted in Belgium	1
Uganda	GTI external, 1 researcher hosted in Belgium	1
	Strengthening the Uganda National Clearing House Mechanism	2
Vietnam	GTI external, 3 researchers hosted in Belgium	1
	GTI internal: 'A step further in the Entomodiversity of Vietnam (part VIII)' by Jérôme Constant and Frederik Hendrickx	1
Cambodia	GTI internal : 'A step further in the Entomodiversity of Cambodia (part I)' by Jérôme Constant and Frederik Hendrickx	1

	GTI external, 1 researcher hosted in Belgium	1
Peru	A final workshop on marine modelling (7 students) at University of San Marcos and a closure workshop with stakeholders	1
Niger	Création d'une section Aire protégée sur le site CHM-Niger ; Collecte, acquisition et mise en ligne des données et informations	2
	Projet de réalisation d'une étude sur la perception de la biodiversité par les communautés locales à travers l'utilisation alimentaire et médicinales des espèces végétales	3
Morocco	GTI external, 1 researcher hosted in Belgium	1
	Collecte des données et renforcement des capacités des parties prenantes à la mise en œuvre du CHM Tchad	2
Rwanda	GTI external, 2 researchers hosted in Belgium	1
Senegal	GTI external, 1 researcher hosted in Belgium	1

Expenditure

Table 3: expenses for all strategic objectives in 2017 (stand: 13 May 2018).

	Budget 2017	engaged	Realised	open	Balance for 2017	% used
SO 1						
ER 1.1 – Scientific and technical expertise is built	72,000.00 €	87,850.14 €	87,385.14 €	465.00 €	-15,850.14 €	122.01
ER 1.2 – Quality scientific knowledge is produced	226,050.00 €	196,262.52 €	180,687.90 €	15,574.62 €	29,787.48 €	86.82
ER 1.3 – Monitoring data yield indicators	20,000.00 €	11.00 €	11.00 €	0.00 €	19,989.00 €	0.06
ER 1.4 – Scientific outputs accessible	40,000.00 €	29,092.21 €	28,792.21 €	300.00 €	10,907.79 €	72.73
Salaries M.-L. Susini, F. Muhashy, M. Vanhove, K. Baetens, K. Vrancken (6+12+2+6+3 pm)	156,684.00 €	161,043.73 €	161,043.73 €	0.00 €	-4,359.73 €	102.78
Total	514,734.00 €	474,259.60 €	457,919.98 €	16,339.62 €	40,474.40 €	92.14
SO2						
ER 2.1 – Expertise in information management is built	50,000.00 €	48,845.56 €	47,694.46 €	1,151.10 €	1,154.44 €	97.69
ER 2.2 – Information flows are improved	62,500.00 €	66,481.93 €	53,597.93 €	12,884.00 €	-3,981.93 €	106.37
ER 2.3 – Information used in governance	25,000.00 €	36,299.18 €	36,299.18 €	0.00 €	-11,299.18 €	145.20
Equipment ICT & technical development	3,000.00 €	0.00 €	0.00 €	0.00 €	3,000.00 €	0.00
Salaries M.-L. Susini, H. Koeijer, K. Vrancken (5 pm)	70,612.00 €	68,742.41 €	68,742.41 €	0.00 €	1,869.59 €	97.35
Total	211,112.00 €	220,369.08 €	206,333.98 €	14,035.10 €	-9,257.08 €	104.38
SO3						
ER 3.1 – Baselines provide insight on awareness level	30,000.00 €	15,928.47 €	12,758.47 €	3,170.00 €	14,071.53 €	53.09
ER 3.2 - Awareness and engagement are raised	60,000.00 €	87,623.76 €	74,847.58 €	12,776.18 €	-27,623.76 €	146.04

ER 3.3 – Communication and awareness raising in Belgium	15,000.00 €	2,544.49 €	2,544.49 €	0.00 €	12,455.51 €	16.96
Salaries M.-L. Susini, H. de Koeijer, M. Vanhove, K. Vrancken (1+4+4+6 pm)	52,154.00 €	55,820.34 €	55,820.34 €	0.00 €	-3,666.34 €	107.03
Total	157,154.00 €	161,917.06 €	145,970.88 €	15,946.18 €	-4,763.06 €	103.03
SO4						
ER 4.1 – Expertise of Belgian Dev. Coop. built	8,000.00 €	0.00 €	0.00 €	0.00 €	8,000.00 €	0.00
ER 4.2 – Biodiversity is mainstreamed in BDC activities	12,000.00 €	6,389.56 €	6,389.56 €	0.00 €	5,610.44 €	53.25
Salaries L. Janssens de Bisthoven + H. de Koeijer (6+2 pm)	52,393.00 €	54,638.61 €	54,638.61 €	0.00 €	-2,245.61 €	104.29
Total	72,393.00 €	61,028.17 €	61,028.17 €	0.00 €	11,364.83 €	84.30
SO5						
ER 5.1 – Expertise of DGD and RBINS built	3,000.00 €	186.30 €	186.30 €	0.00 €	2,813.70 €	6.21
ER 5.2 – Methodologies are available	30,500.00 €	34,342.78 €	32,059.91 €	2,282.87 €	-3,842.78 €	112.60
Salaries M. Vanhove, A.-J. Rochette (3+12pm)	39,766.00 €	88,530.94 €	88,530.94 €	0.00 €	-48,764.94 €	222.63
Total	73,766.00 €	123,060.02 €	120,777.15 €	2,282.87 €	-49,794.02 €	167.96
SO 6						
ER 6.1 – DGD and RBINS familiar with Nagoya Protocol	1,000.00 €	0.00 €	0.00 €	0.00 €	1,000.00 €	0.00
ER 6.2 – Awareness is raised	15,000.00 €	10,398.76 €	9,217.76 €	1,181.00 €	4,601.24 €	69.33
Salaries M. Vanhove (3 pm)	17,849.00 €	21,631.59 €	21,631.59 €	0.00 €	-3,782.59 €	121.19
Total	33,849.00 €	32,030.35 €	30,849.35 €	1,181.00 €	1,818.65 €	94.63
SO 7						
ER – Programme is efficiently, effectively managed	22,000.00 €	3,226.22 €	3,226.22 €	0.00 €	18,773.78 €	14.66
Salaries L. Janssens de Bisthoven, V. Pinton,	118,174.00 €	123,579.84 €	123,579.84 €	0.00 €	-5,405.84 €	104.57

M. Agarad (6+12+12pm)						
Total	140,174.00 €	126,806.06 €	126,806.06 €	0.00 €	13,367.94 €	90.46
TOTAL GENERAL	1,202,682.00 €	1,199,470.34 €	1,199,685.57 €	49,784.77 €	3,211.66 €	99.73
Calculated with TMA of 7,75%	90,900.00 €	90,900.00 €	90,900.00 €	0.00 €	0.00 €	100.00
TOTAL GENERAL WITH STRUCTURAL COSTS	1,293,582.00 €	1,290,370.34 €	1,290,585.57 €	49,784.77 €	3,211.66 €	99.75

Expenditure analysis

For all large posts (representing 1,199,685.57 Euro or 99.73 % of total budget without structural costs), the maximum 15% deviation rule was respected. Some smaller posts saw larger deviations, which will be compensated in the next years of the multi-annual scheme. The implementation of the year plan 2017 started on 1 January 2017 and ended on 31 December 2017. By December 2017, we attained a budget execution rate of nearly 100%. Due to the multi-year format of the programme, the remaining annual balances will be added to the 2018 budget (see annual plan 2018).

The distribution of expenses per type of activity

Table 4: Expenses for salaries, operations and equipment in 2017 (stand March 2018).

2017	Budget	Engaged	Realised	Open	Balance	% used
Salaries	507,632.00 €	573,987.46 €	573,987.46 €	0.00 €	-66,355.46 €	113.07
Operations	692,050.00 €	625,482.88 €	575,698.11 €	49,784.77 €	66,567.12 €	90.38
Equipment	3,000.00 €	0.00 €	0.00 €	0.00 €	3,000.00 €	0.00
Total without structural costs	1,202,682.00 €	1,199,470.34 €	1,149,685.57 €	59,493.00 €	3,211.66 €	99.73
Structural costs	86,500.00 €	86,500.00 €	86,500.00 €	0.00 €	0.00 €	100.00
Total with structural costs	1,289,182.00 €	1,285,970.34 €	1,236,185.57 €	49,784.77 €	3,211.66 €	99.75

Points of comments:

- All justifications of expenses and the detailed expenditure tables are available for consultation at the RBINS. The RBINS certifies that these supporting documents,

including those corresponding to expenses incurred outside Belgium (made by our local partners), correspond to the amounts reported in the financial tables.

- Equipment: nothing spent in 2017, in the multi-annual budget, it compensates for the over expenditure of 2015.

SO 1 – Strengthen the scientific and technical knowledge base

Points of comment:

- No particular issue, budget is relatively balanced (ER1.1. and 1.2. compensate for each other, related to GTI).
- ER 1.3 : expenses less than 50% of (relatively small budget). This budget is related to SO5 where there was some over expenditure, so it compensates.
- ER 1.4: a volume of AbcTaxa has been published in 2017, as well as a lexicon and several policy briefs.

SO 2 – Enhance the information base

Points of comment:

- SO2 and SO3 are linked, as the same partners are involved in CHM and awareness. In some years CHM calls have more success, in other years awareness calls. Overall, SO2 and 3 attain \pm 100% expenditure. Within each SO, sub-SOs compensate for each other.

SO 3 – Contribute to awareness raising

Points of comment:

- Same comment as in SO2

SO 4 – Improve the mainstreaming of biodiversity

Points of comment:

- The 15% under expenditure is explained by many activities or consultancies for DGD and others (see Tables 26 & 35) at zero cost as it often involves attendance to meetings in Belgium and reviews of documents in the office.
- No special requests from embassies have been received nor specialised training at the DGD headquarters. Travels were quite often booked on other SOs.

SO 5 – Improve knowledge on MRV (& indicators)

Points of comment:

- SO5 is over its budget, in a movement to compensate for under-expenditure in 2014-2015 and of ER1.3.

SO 6 – Raise awareness & built capacities on ABS NP

Points of comment:

- Same comments as in SO4.

SO 7 – Coordination and management

Points of comment:

- The planned expense caused by the midterm evaluation was still not billed by BELSPO at the time of completion of this report, explaining the 14,7 % spent from 22000 Euro. It will be accounted for in 2018.

External projects 2017

Table 5: external projects and origin of funding.

Project/activity	South partners	North/global partners	Total Budget	CEBioS contribution
Evamab: Economic valuation of ecosystem services in Man and Biosphere reserves: testing effective rapid assessment methods in selected African MABs (EVAMAB)	LABEF-Université d'Abomey-Calavi (Bénin), NM-AIST, Tanzania, Busitema University, Uganda, Bahir dar University, Ethiopia	VUB KULeuven UAntwerpen Belspo/UNESCO-MAB	250 000€	Coordination of the project, co-supervising an MSc student and implementation in Benin and Tanzania (interviews, workshops, data collection).
Belspo / International networking of federal scientific institutions	Mycologists Network of the Great Lakes Region of Africa (RMGL): Institutions: UOB, UNIGOM (RDC), OBPE (Burundi), UR-Ce (Rwanda)	Botanic Garden Meise	39940, 2016-2017	Implementation of the 2nd phase of the project: a workshop was organized in Goma (DRC) and in the PNVi from 30 May to 13 June 2017. 55 participants from Burundi, D.R. Congo and Rwanda were involved.
VLIR-UOS VLADOC: Towards sustainable fisheries in Lake Tanganyika: integration of genetics, environmental data and stakeholder involvement (CEBioS is involved)	CRH-Uvira	KU Leuven	€ 145 000, 2016-2020	Co-supervision PhD student and capacity building and extension activities; formulation mission in August 2016
VLIR-UOS South Initiative on sardines	CRH-Uvira	KU Leuven	€ 69 975, 2018-2019	Co-supervision PhD student and capacity building and extension
VLIR-UOS South Initiative: Renforcement des capacités locales pour une meilleure évaluation biologique des impacts miniers au Katanga (D.R. Congo) sur les poissons et leurs milieux aquatiques (CEBioS is involved)	Unilu University of Limpopo (South Africa)	KU Leuven University of Antwerp	€ 74 960, 2014-2016	Capacity building mission and initiation of South-South collaboration in March 2016; MSc student supervision and reporting in 2017
IFS grants	CSB: « Capacity Building and Biodiversity data mobilisation to address amphibian		11.885 USD 2018-2021	Coaching by CEBioS

Leopold 3 grant : Perception des gestionnaires et communautés riveraines de la réserve de biosphère de la Pendjari (Bénin) vis-à-vis des services écosystémiques qu'elle fournit.
GBIF + BID

conservation in DR Congo »				
CSB: Validité fonctionnelle des Chiroptères Afro-tropicaux comme indicateur d'impact des perturbations anthropiques sur les services écosystémiques			10.895 USD 2018-2021	Coaching by CEBioS
Dr. Hamed Odountan (UAC, Benin) : macroinvertébrés and biomonitoring in Benin			±11.000 USD	Coaching by CEBioS
LABEF (Université d'Abomey-Calavi, Benin)	KULeuven	€ 2200		Field mission to supervise a master student from KULeuven and a student from Université d'Abomey-Calavi in the framework of the EVAMAB project
CSB: « Capacity Building and Biodiversity data mobilisation to address amphibian conservation in DR Congo »			20.000	Coaching by CEBioS

CEBioS is the coordinator of the EVAMAB project (“Economic valuation of ecosystem services in Man and Biosphere reserves: testing effective rapid assessment methods in selected African MABs”, www.biodiv.be/evamab). It is funded in the framework of a cooperation agreement between Belspo and UNESCO-MAB (total budget: 250 000€). 75% of the salary of Anne-Julie Rochette is financed by the project.

Duration: 2017-mid 2019

General objective: to test and/or develop methods and tools for rapid assessment of ecosystem services (ES) in a selection of African UNESCO-MAB sites.

Partners

- Royal Belgian Institute of Natural Sciences- CEBioS (promoter)
- KU Leuven
- Université Libre de Bruxelles
- Universiteit Antwerpen

Geographical focus: 4 Biosphere Reserves in Africa



CEBioS activities and outputs in EVAMAB

Table 6: CEBioS activities and outputs in Evamab.

Activity	Partners	Period	Role of CEBioS	Outputs
Opening meeting in UNESCO HQ, Paris	UNESCO-MAB, KULEuven	March 2017	Coordination	Meeting report with recommendations for the implementation of the project
Review of existing ES assessment tools	VUB	May-June 2017	Co-guiding the master student	A student internship report gathering the results of the review
Submitting a JOINT proposal to VLIR-UOS to strengthen EVAMAB implementation	KULEuven, UAntwerpen VUB + South partners in UG, TZ, ET, SA	May 2017	Coordinating the submission	None - proposal not selected, will be re-submitted in 2018
Interviews and partner meetings in Lake Manyara, Tanzania	NMAIST, Tanzania	June 2017	Field work and meeting the partners	Content to be integrated in a paper about Lake Manyara to be submitted early 2018.
Analysis and review of existing ES assessment tools	VUB, KULEuven	April-December 2017	Coordinating the analysis and the writing of the review paper	Review paper to be submitted to the "Ecosystem Services" Journal early 2018. Policy brief to be developed in 2018.
Master thesis in Pendjari, Benin (+applying for a Leopold 3 grant to fund CEBioS mission)	KULEuven, LABEF (UAC, Benin)	Supervision: May-October Field: August-September	Co-supervising the student and starting the field work with him.	Leopold III grant received + Master thesis entitled "Payments for ecosystem services: an assessment of existing and possible reward mechanisms for ecosystem services in the Pendjari Biosphere Reserve, Benin". (June 2018)
AfriMAB conference + Delphi survey	VUB, KULEuven	September 2017	Presentation + Delphi preparation	Results will be integrated in the review paper
1 st Steering Committee	EVAMAB partners + SC (Belspo, UA, ICRAF, CEEAC)	December 2017	Coordination	Meeting report with recommendations for the implementation of the project

TRAINING ACTIVITIES



Fig. 2. Zerubabeeli Naturinda (foreground) and Venuste Nsengimana (background) respectively from Uganda and Rwanda during their GTI training at the RBINS in November 2017

Training constitutes the core of the CEBioS programme. While formal academic education is provided by universities, the RBINS offers hands-on experience and advanced professional training. It takes the form of field and lab work for individuals or groups, workshops and distance learning.

AWARENESS RAISING

Awareness raising is a strategic objective (SO3). However also in other SOs there are activities whose main activity is geared towards awareness raising or as a side-activity. One can think about the awareness raising of scientists on the Nagoya Protocol, interviews given for national television, radio or articles in newspapers, stands and more. The effect of these activities is not always tangible however it can have a big impact in the partner countries as well as in Belgium.

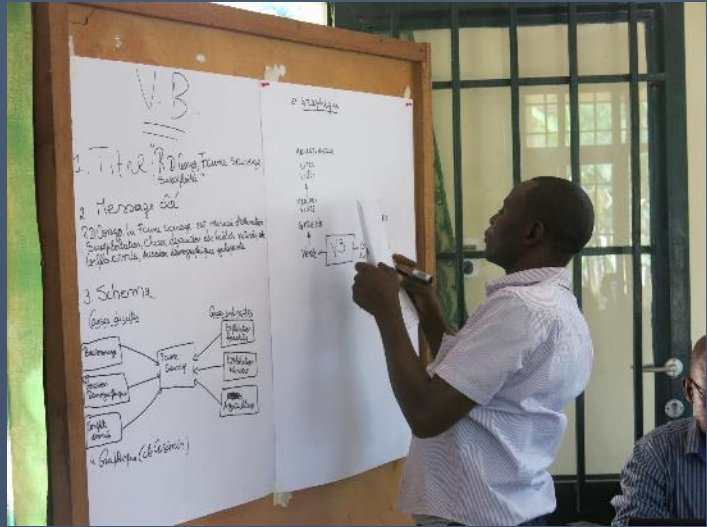
Some examples of awareness interventions in 2017:

- Eight oral presentations at the European Conference of Tropical Ecology, Brussels, February. E.g. M-L Susini Ondafe gave a presentation entitled 'Communicating on taxonomic research to achieve better conservation and management of biodiversity' at the European Conference of Tropical Ecology, Brussels, Belgium, 07/02/2017
- Guest lectures at U Hasselt and at DGD on biodiversity governance by Luc Janssens de Bisthoven & Panel 'discutant' role by Luc JdB at Acropolis seminar on fragile states
- Large distribution of the 3 Policy briefs (bushmeat, charcoal and fisheries) in the DR Congo & presentations by the CSB at the conference sessions of the '4ième Edition de la Semaine de la Science', Kinshasa, April 2017
- Stand of the CSB at the "4ième Edition de la Semaine de la Science et des Technologies, Kinshasa", April 2017

Table 7: overview of **training efforts in 2017** (number of trainees per programme component, activity and country) (lectures not included).

Strategic Objective	INDIVIDUAL TRAINING IN BELGIUM	INDIVIDUAL TRAINING IN SITU	GROUP TRAINING IN BELGIUM	GROUP TRAINING IN SITU
SO 1.1- Scientific and technical expertise is built				
1.1.1 Visits in Belgium	Benin (4 people), Burundi (1), Côte d'Ivoire (1), D. R. Congo (4), Morocco (1), Rwanda (2), Senegal (1), Uganda (1) and Vietnam (3)			
SO 1.2- Quality scientific knowledge is produced				
1.2.1.(A) Taxonomic research is strengthened – in situ workshops				Benin (7), Vietnam (20), Cambodia (50)
1.2.2. Cooperation with ICCN/PNVi - UNIGOM	Mushroom inventories ethnomycology (1) 2017			
1.2.2. Cooperation with UAC, Benin				Drafting of a lexicon on habitats, wildlife and the impact of fire in the Pendjari Biosphere Reserve (8) 2017
1.2.3. (C) Cooperation with UNIKIS, RDC	3			
1.2.4 Marine modeling			Vietnam (1)	Introductory workshop of 3 weeks in IRHOB, Benin (4) Mixed level workshop in UNMSM, Peru (7)
SO2.1 Expertise in information management is built/ training workshops			DR Congo (2), Palestine State (2), Jordan (2), Belgium (3), NI (1)	D.R. Congo (>40), Jordan (20), Gabon (15), Togo (15), Burundi (12), Ethiopia (20)
SO2.3. Information used in governance				Togo (20)
SO3.2				DR Congo (>40)
SO5.2. Closing workshop of MRV projects				DR Congo (40-50)

PART II INSTITUTIONAL COOPERATION



Introduction

The institutional cooperation concentrates principally on OBPE (Burundi, previously INECN), UAC (Benin) and, in a start-up phase since 2017, on the CSB (DR Congo). Both OBPE and UAC started a three-year programme in 2014 until 2017, with an extension in 2018. For the institutional cooperation on marine modelling with IMER (Vietnam), IMARPE (Peru), and IRHOB (Benin), we refer to the specific chapter under SO1, 1.2.4. (D). For the CSB, no summarising reporting has been done so far, though reports have been produced for individual projects. The summary report for the period covered by the current ACC (2017-2018) will be generated at the end of 2018. We also collaborated in the framework on the GTI (SO1), CHM (SO2), awareness (SO3) and MRV (SO5) calls with many other institutions. We refer to the respective chapters.



Institutional cooperation with Université Abomey-Calavi (UAC)

For interventions by CEBioS staff, see Activity 1.2.2. (B). Supporting the monitoring of habitats for the management of ecosystems as well as SO2 (information) and SO3 (awareness)

The full 2017 narrative and financial reports can be delivered on demand.

Conclusions by UAC (in French)

Les activités programmées pour être exécutées suivant le chronogramme 2017, se présentent comme suit :

Les numéros se réfèrent aux résultats attendus du cadre logique du MoU entre CEBioS et UAC. (PNP=Parc National de Pendjari)

✓ **2.1. Atelier d'échange, d'actualisation et de formation à l'usage de la fiche de collecte des données sur l'évolution des habitats ;**

La fiche de collecte de données sur la végétation du PNP a été soumise à travers cette activité à un toilettage afin d'atteindre les objectifs visés. Deux séances plénières et deux sessions en groupes ont permis aux participants à cet atelier d'apporter les éléments de réponses aux préoccupations des uns et des autres.

Toutes les modifications proposées par les intervenants ont été directement prises en compte dans la fiche lors de l'atelier et ce rapport consacre donc la version finale de la fiche de collecte de données sur la végétation du PNP. La mise en application effective de toutes les recommandations a été assurée par les gestionnaires du PNP et cela a abouti à l'élaboration de la nouvelle fiche de collecte de données présentée

- ✓ La méthode appliquée à la collecte des données sur les habitats et au suivi des impacts des feux et parcours est utilisée pour analyser l'occurrence des plantes dominantes et des habitats ; voir 3.1.

- ✓ **3.1. La recherche sur les feux et parcours est effectuée;**
Des collectes récentes de phytomasse et des relevés phytosociologiques ont été effectués. D'autre part des enquêtes auprès des populations riveraines sont effectuées pour évaluer leur perception sur les feux dans la gestion de la réserve. Ces données ont permis à la réalisation d'un mémoire de master sur le thème « Fonctionnement des communautés végétales sous l'influence des feux d'aménagement et la perception des populations riveraines dans la réserve de biosphère de la pendjari » par l'étudiant Elodiade HOUINDOTE sous la supervision du professeur Marcel HOUINATO et l'équipe de recherche du projet.
Un autre travail de recherche a été conduit par l'étudiant EFIO Sylvain dans le cadre de son mémoire de DEA en Socio-économie. Les recherches ont porté sur les mesures de gestion des conflits homme-faune autour de la Réserve de Biosphère de la Pendjari. Ce mémoire a été défendu avec succès le 31 Juillet 2017. Les travaux se sont poursuivis et ont abouti à un protocole de thèse.

- ✓ **3.2. Les résultats des recherches sont transférés ou restitués aux gestionnaires du PN de la Pendjari et du W (CENAGREF, DPNP, AVIGREFs) ;**
Les activités ont été exécutées suivant le programme prévu. Les 23 et 24 Janvier 2018 s'est tenu dans la salle de conférence de African Park Pendjari à Tanguiéta, l'atelier de restitution des résultats de recherche du projet « Renforcer les capacités des acteurs de la conservation pour une mise en pratique des acquis de la recherche scientifique dans le Parc National de la Pendjari » aux gestionnaires du parc W et de la Réserve de Biosphère de la Pendjari. Il y a eu environ une vingtaine de participants
L'objectif était de restituer les résultats et les livrables disponibles à l'étape actuelle de la mise en œuvre du projet. Spécifiquement il faut présenter : les résultats concernant les services éco-systémiques et l'écologie des parcours et enfin les perspectives futures de recherche.

- ✓ Les gestionnaires sont capables de faire le suivi des habitats du PN de la Pendjari ; voir 4.2.
- ✓ **4.2. Les gestionnaires appliquent les critères pertinents pour la collecte des données sur la dynamique des habitats et tiennent compte des résultats dans les plans de gestion du PNP ;**
 Cette activité n'a pas pu se dérouler car depuis le 25 septembre 2017, le gouvernement béninois a confié la gestion de la Réserve de Biosphère de la Pendjari au groupe African Park. Du fait, tous les éco-gardes sont remis à la disposition du CENAGREF. Nous avons signé un accord de partenariat avec le nouveau gestionnaire pour la poursuite de nos activités. Mais les éco-gardes ne sont pas acceptés du nouveau gestionnaire.
 Nous avons utilisé une partie de ce budget pour assurer l'activité d'allumage des feux tardifs qui devrait être exécutée avec les éco-gardes. Une autre partie sera employée pour compléter cette activité lors la mission de coordination belge dans le parc en avril 2018.
- ✓ Une base de données sur le suivi de la dynamique des habitats est établie et utilisée à l'UAC par les chercheurs et étudiants. La base de données est partagée avec les gestionnaires pour la finalisation du lexique ; Pas encore opérationnelle.
- ✓ Atelier de sensibilisation des décideurs et élus locaux riverains au PNP sur la biodiversité et les acquis du projet ; à continuer en 2018, voir activités du Ministère de l'Environnement et le CHM (SO2+SO3))
- ✓ Campagnes de sensibilisation dans chaque village riverain sur la biodiversité, les acquis du projet et leurs implications pour la conservation. ; à continuer en 2018, voir activités du Ministère de l'Environnement et le CHM (SO2+SO3))

De façon globale, les activités budgétisées prévues en 2017 ont été quasi exécutées. Deux étudiants master ont défendu leur mémoire et les deux derniers le feront en mars 2018.

Les gestionnaires du parc de la Pendjari et les Avigref sont informés des résultats des chercheurs et ont contribué fortement aux travaux de recherche. Un Guide & lexique pour le suivi des parcours naturels dans la Réserve de Biosphère de la

Pendjari: Habitats, Faune et Feux est disponible. Les gestionnaires ont la compétence de gestion du dispositif de suivi de la dynamique des habitats.

En revanche, les activités liées à la sensibilisation sur la conservation de la biodiversité, les connaissances scientifiques sur les feux et les parcours doivent donc être poursuivies jusqu'en 2018.



INSTITUTIONAL COOPERATION WITH OFFICE BURUNDAIS POUR LA PROTECTION DE L'ENVIRONNEMENT (OBPE)

For interventions by CEBioS staff, see Activity 1.2.2. (B). Supporting the monitoring of habitats for the management of ecosystems as well as SO₂ (information) and SO₃ (awareness)

Rapport de OBPE (Benoit Nzigidahera †)

(Les annexes mentionnées, ainsi que les rapports narratifs et financiers sont disponibles sur demande à CEBioS)

Résultats attendu 1: La dynamique des habitats et la biodiversité des aires protégées du Burundi sont mieux connues et comprises

1.2.1. Etablir un système fonctionnel de collecte des données sur les types d'habitats et leur évolution

Des activités de suivi de la dynamique des habitats sont menées trimestriellement. Les rapports y relatifs sont en annexe 1.

1.2.2. Mettre en place et à jour une base de données et transférer continuellement les données

Des données sont collectées trimestriellement sur des sentiers écologiques et enregistrées dans une base de données en Excel. Monsieur Masabo Onesphore est le Responsable de cette tâche.

1.2.3. Renforcer la gestion des collections de flore, en particulier celle des plantes dominantes qui, en tant que telles, servent de référence pour la reconnaissance des habitats

En plus du matériel qui était en stock, l'herbarium de l'OBPE a été renforcé par l'acquisition de 1500 papiers couche et 400 papiers fardes. Deux armoires sont en commande et on attend des activités de finissage pour la réception. Des activités d'étiquetage et de rangement des herbiers dans l'herbarium sont menées par Madame Ntawuyankira Régine et Monsieur Nyabenda Mathias. Compte tenu de l'immensité de ce travail, Monsieur Nduwarugira Oscar a été engagé momentanément pour renforcer l'équipe et contribue à faire avancer le travail d'étiquetage.

Résultats attendu 2: Les services écosystémiques (SE) dans les aires protégées du Burundi sont mieux compris et valorisés.

Mener une recherche sur la restauration des zones déforestées sur base des essences autochtones en symbiose avec les champignons

Cette activité est menée par NIYONGABO Elias, les résultats des actions déjà menées sont synthétisés.

2.3 Recherche sur les pollinisateurs

2.3.2 Mener une recherche sur l'apiculture écologique avec des espèces autochtones (Melipoculture)

Avec les changements qui ont eu lieu dans l'organisation académique de l'Université du Burundi (les étudiants bacheliers n'ont qu'un mois de stage pour présenter leur rapport de fin d'étude universitaire. On a eu un problème de mise en œuvre de cette activité et sur votre permission, c'est Monsieur Longin NDAYIKEZA qui va s'occuper de l'activité et une note du protocole de recherche est déjà élaborée (Annexe 3) et un contrat y relatif est développé pour signature.

Résultat attendu 3 : Des publics cibles sont sensibilisés

2.4 Recherche sur les services écosystémiques des plantes

2.4.1 Mener une recherche sur le rotin (palmier rotang) (sensibilisation et développer un projet pour la restauration

MVABUHA David a été recruté pour développer le protocole et monter un projet de restauration de cette espèce en danger. Le travail est en cours.

Résultats attendu 4 : Le CHM et le MRV sont renforcés

4.1.2 Inauguration officielle de l'approvisionnement continu en électricité avec panneaux solaires

Cette inauguration a connu la participation des hautes autorités dont le Ministre de l'Eau, de l'Environnement, de l'Aménagement du Territoire et de l'Urbanisme et l'Ambassadeur du Royaume de Belgique au Burundi (Annexe 4: Rapport des activités cérémoniales).

L'approvisionnement continu en électricité avec des panneaux solaires aux bureaux du Centre de Recherche en Biodiversité de l'OBPE a permis d'assurer de manière illimitée le courant nécessaire pour assurer de façon permanente les activités du service (travail du personnel et conservation des échantillons).



Fig. 4. Inauguration of the Solar Panels by the Minister of Environment and the Belgian Ambassador, October 2017 (by Han de Koeijer).

4.1.3 Rendre fonctionnel le CHM et mettre régulièrement et à jour le site web

4.1.3.2 Alimenter régulièrement et mettre à jour le site web

Dans le cadre du Centre d'Echange d'Information du Burundi sur la Convention de la Diversité Biologique (CDB) différentes activités ont été réalisées à savoir :

- *Le postage régulier des informations en rapport avec la biodiversité sur le site du CHM* : Au cours de l'année 2017, informations ont été postées et ces dernières incluent les pages web (79), les actualités (65), les événements (35), les répertoires (6), les notifications (14), les fichiers (106) et les liens vers les organisations tant nationales qu'internationales (99) ont été postés.
- *Des réunions des Points Focaux Interinstitutionnels* : Des réunions ont été organisées en l'endroit des Points Focaux Interinstitutionnels (PFIs) et consistaient au postage intensif des informations sur le site web du CHM-Burundais. Les Procès-Verbaux de ces réunions sont repris en annexe 5.

Pour élargir le champ d'action et enregistrer le plus d'informations, de nouveaux Points Focaux Interinstitutionnels (PFIs) du Centre d'Echange d'Information du Burundi ont été nommés. Ils proviennent du Ministère de l'Energie et des Mines, du Ministère de l'Intérieur et de la Formation Patriotique et du Ministère du Commerce, de l'Industrie et du Tourisme.

4.1.4 Recruter un consultant chargé d'appuyer la Point Focal du CHM dans la collecte et le postage des informations sur le site web du CHM

C'est M. Liévin NDAYIZEYE qui a été recruté pour appuyer les actions du Point Focale du CHM Burundi dans la collecte et le postage des informations au site web : <https://absch.cbd.int>.

4.3.3 Numériser la cartothèque et la mettre en ligne

Un consultant a été recruté pour cette tâche. Le rapport y relatif est repris en annexe 7.

4.4.2 Adopter l'approche MRV sur les résultats de la recherche au point 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3

4.4.2.1 Former des indicateurs sur base des résultats de recherche sur les services écosystémiques (2.1, 2.2, 2.3, 2.4)

Les indicateurs :

- sur les valeurs économiques de 3 services écosystémiques (Les eaux de la Kibira, Tourisme à base des buffles à la Ruvubu et les Phragmites en bordure du lac Tangayika);
- sur la productivité des champignons sauvages suivant l'évolution de leurs habitats forestiers à Gisagara et à Rumonge (les cartes, données à l'ouest et à l'est et graphiques sur la productivité);
- sur l'abondance des espèces clés d'abeilles suivant l'évolution de leurs habitats forestiers (Quelles sont les espèces dont l'abondance est connue, à la Rusizi par ex, leur évolution, quelles sont les espèces végétales);
- sur l'évolution des bambous de montagne (identifier les facteurs à la base et tracer des graphiques ex : la croissance de la population, les maisons construites, les demandes et l'évolution dans les années à venir);
- sur l'évolution des plantations forestières et agroforestières (Données disponibles dans les DPAE et dans d'autres institutions) ont été formulés et les résultats ont été présentés dans un document sous forme d'une étude qui a été validée au cours d'un mini-atelier.

Le document sur ces indicateurs des valeurs et services écosystémiques a été validé au cours d'un muni-atelier moyennant quelques corrections (Document en cours de correction, voir le rapport de l'atelier en annexe 6).



Institutional cooperation with the Centre de Surveillance de la Biodiversité (CSB)

An 'Accord-Cadre de Coopération' with the CSB has been signed in April 2017. The period covered by the current ACC (2017-2018), is considered a start-up phase as a preparation for further development in phase II of the CEBioS programme.

An overview of the objectives and the expected results of this ACC is available on demand. During this start-up phase, several 'Accord Spécifique de Coopération' (individual projects) have been realised or initiated.

Activity highlights

When the CSB was built (2011-2014) at the campus of the Faculty of Science of UNIKIS, much effort and means have been put into its ICT-installation and its alignment with other programs providing for ICT and Internet-connections for the entire campus: computers, a server room with air-conditioning, cabling and a WIFI-network, a satellite connection via the satellite dish put in place by the REFORCO project (2012-2014), radio-connection to the Internet, an optic fibre-connection with the server room at the REFORCO premises on campus. With REFORCO no longer active on the

campus, its server room and satellite connection have no longer been properly maintained. As a result the electronic library, set up for the entire campus and hosted by both server rooms, was no longer accessible. CEBioS supported a project to reactivate the electronic library in CSB's server room and provided technical training as to ensure that the library is accessible for the entire campus, from within the CSB-building.

In the meantime a project developed in 2016 and started by the VLIR-IUC in 2012, to digitise reports, theses, memoires and so on and post them in the e-library as well as on the CHM-site of the DR Congo,

continued in 2017 and will be renewed as well in 2018. This type of project allows contributing to the Internet connection costs of the CSB, an absolute necessity since the institute does not have the means to pay for this itself.

The CSB-team responsible for the e-library, the CHM-DRC site and the maintenance of the CSB's ICT-installation now consist of two persons.

As a follow-up activity on the MRV projects carried out by the CSB in 2016 (2 on bush meat, 1 on fisheries), sensitisation activities have been

encouraged to valorise the previously collected data and indicators developed.

CEBioS supports the CSB to prepare for its upcoming (2018) 'Conseil d'Administration': annual and financial reports, strategic plans and planning. A support to the follow up of the centre's accounting and financial systems is also ensured by CEBioS.

Participation of CSB at the '4^{ième} Semaine de la Science et des Technologies'

17-18 April 2017, Kinshasa

About 8000 mainly young people visited this successful exhibition at the 'Institut de la Gombe', organised and animated by a team of volunteers of the ASBL Investing in People, the ONG Elongo Elonga and their partners in Kinshasa. Twenty one associations, societies, and research centres presented their services and products. The CSB participated with a delegation of four professors to man its stand and give presentations during the accompanying conferences. With posters, stories, pictures and flyers the visitors to the stand were informed about the importance of biodiversity for their country and how science and citizens can help to protect and conserve it. The

CSB's stand attracted the attention of the 'Primature' and several national ministers. A movie of the event is available.



Fig. 5. Semaine de la science, Kinshasa.

Series of workshops and specialised trainings 25 September-4 October, CSB



Fig. 6. CSB, workshop on awareness.

Well over 100 participants from all over the country attended highly appreciated sessions on Awareness building for school children, the Nagoya Protocol, Project Cycle Management, Scientific Communication, the Governance of Biodiversity, Measuring Reporting and Verification of biological data, searching for funding, the importance of communication and the Clearing House Mechanism, presented by the CEBioS team members together with colleagues of VVOB-RDC, the Directorate of Sustainable Development of the National Ministry for the Environment of the DRC, ICCN and School Inspectors of the Kongo Central Province. Important outcomes have been realised during this activities:

VVOB and CSB on the one hand and the Inspectors for Primary and Secondary Education of the provinces of the Tshopo and of Kongo Central met each other. A restitution of a collaborative project in Kongo Central of VVOB and the School Inspectors of Kongo Central to *sensitise school children*, as well as of the base line

indicator study of its effect (collaboration with UNIKIN) was presented to the parties of the Province of the Tshopo. Both groups discussed the possibility to set up a similar project in the province of the Tshopo.

Intensive discussions during the seminar on the *Nagoya Protocol*, with very active participation of the ICCN and DDD representatives, led to further and (still) ongoing discussions later on at the offices of the Secretary General of the national ministry in charge of the environment in Kinshasa to harmonise the points of view of the scientific community (Belgium - seminar at DGD on 29/06 and the DRC during the workshop) with eventual political intentions and implementation legislation with regards to the Protocol to be developed in the coming time.

The 11 MRV projects executed in the DRC in 2016-2017 were discussed at the back-to-back MRV closing event (25 September and 2-4 October). Substantially more participants than the 11-20 persons originally expected, made for very lively discussions, resulting in the creation of 3 *Policy Briefs (Charcoal, Bush meat and fisheries)* and, upon demand of the participants, a follow up activity by means of sensitisation projects (local populations involved in the data collection, local and provincial administrations and politicians). A *scientific paper* on the development of this MRV process will be published in the coming months.

The 3 Policy Briefs have been largely distributed (physically and as Pdf) and have been very enthusiastically received for usage during the MRV-sensitisation projects in 2018 and by DDD as *'note techniques' to help prepare legislative*

documents within the appropriate commissions of the national parliament.

Reactivation of the '*Antennes*' of the CSB (virtual teams of academic, governmental & administrative representatives as well as representatives of NGO's in each former province of the DRC).



Fig. 7. Group Photo and lecture room at CSB.

PART III
DETAILED REPORT
PER STRATEGIC OBJECTIVE
(SO)



Created by Gregor Cresnar
from Noun Project





Created by Naveesh Khattar
from Noun Project

**SO 1.
THE RBINS STRENGTHENS THE
SCIENTIFIC AND TECHNICAL
KNOWLEDGE BASE ON BIODIVERSITY
AND ON ITS LINKAGES WITH
ECOSYSTEM SERVICES AND POVERTY
REDUCTION.**

Expected results

**1.1. Scientific and technical expertise
is built**

**1.2. Quality scientific knowledge is
produced**

**1.3. Monitoring data is fed into
national indicator processes**

**1.4. Scientific outputs are made
accessible to users**

Expected results (output)	Output indicators	Report 2017
1.1 Scientific and technical expertise is built	National authorities use the information provided by SO1 in the national indicator processes	<p>18 trainees visited Belgium (see table 4)</p> <p>On 3rd July 2017, Olaniran Hamed Odoutan, GTI alumnus, successfully defended his Ph. D. thesis at Université d'Abomey-Calavi, Benin. The title of his thesis is: 'Ecologie comparée des Macroinvertébrés et Bioindication de la Qualité de l'eau des Lacs Nokoué et Ahémé au Bénin (Afrique de l'Ouest)'.</p> <p>In May 2017, Mr Bill Kasongo Wa Ngoy Kashiki, GTI alumnus, successfully defended his Ph. D. thesis, at the Faculté des Sciences Agronomiques, Université de Lubumbashi, R.D. Congo. His thesis was entitled 'Productivité et valorisation des champignons sauvages comestibles de la forêt claire de type Miombo (Haut-Katanga ; République Démocratique du Congo)'.</p> <p>Selection of scientific outputs of actual or former GTI trainees in 2017:</p> <ul style="list-style-type: none"> • Bresseel J. & Vermeersch X.H.C. The first record of the genus <i>Olcinia</i> Stål, 1877 from Cambodia and Vietnam with the description of two new species (Orthoptera: Tettigoniidae: Pseudophyllinae: Cymatomerini). Belgian Journal of Entomology, 56: 1–16 • Constant J. & Pham H.-T. Indochinese Polydictya lanternflies: Two new species from Vietnam, identification key and notes on <i>P. vietnamica</i> (Hemiptera: Fulgoromorpha: Fulgoridae). Eur. J. Entomol. 114: 279–290 • Drumont A. & Do C. New contribution to the study of the tribe Aegosomatini in Vietnam with the description of a new species of <i>Aegolipton</i> Gressitt, 1940 and a note on the identity of the female sex of <i>Aegosoma george</i> Do, 2015 (Coleoptera, Cerambycidae, Prioninae). Les Cahiers Magellanes, No25, mars 2017 - 106 • Lombart M.M. Kouakou, Kolo Yeo, Ann Vanderheyden, Mouhamadou Kone, Thibaut Delsinne, Kaly Ouattara, Henri W. Herrera and Wouter Dekoninck. First morphological and molecular confirmed report of the invasive tropical fire ant, <i>Solenopsis geminata</i> (Fabricius, 1804) (Hymenoptera: Formicidae) from Côte d'Ivoire (West Africa). BiolInvasions Records (2017) Volume 6, Issue 2: 173–179 • Taedoumg H, Sonke B, Hamon P, De Block P (2017) <i>Craterispermum capitatum</i> and <i>C. gabonicum</i> (Rubiaceae): two new species from the Lower Guinean and Congolian Domains. PhytoKeys 83: 103–118 • Yéyinou Loko L. E., Orobiyi A, Agre P, Dansi A, Tamò M and Roisin Y. (2017) Farmers' perception of termites in agriculture production and their indigenous utilization in Northwest Benin. Journal of Ethnobiology and Ethnomedicine 13:64 In 2017, GTI alumnus Héritier Milenge Kamalebo was hired as research assistant at the 'Institut Supérieur Pédagogique (ISP) of Bukavu, D.R. Congo. <p>Organisation of 2 workshops dedicated to scientific writing and publishing, aimed at GTI and MRAC trainees. The trainer was Ms Isabelle Gerard who is the head of the joint Publications Service of the MRAC and the RBINS.</p>
	<p>12-18 students trained / year will produce: 8 posters and/or oral presentations given at national or international events/ year;</p> <p>5 publications in scientific journals or general media/ year;</p> <p>3 who graduate (Master or Ph. D.)/ year;</p>	Activities
1.1.1. organise the external call, selection and mobility of 12-18 trainees per year	done	
1.1.2. follow-up of the young scientists for scientific output and graduation	done	

EXPECTED RESULT 1.1 SCIENTIFIC AND TECHNICAL EXPERTISE IS BUILT

Activities

Early 2017, the Belgian GTI NFP officially launched its 14th external call for proposals for capacity building in taxonomy and access to collections in Belgium. The call was open for new trainees or alumni who benefitted from our support less than 3 times. It was again a success: we received a total of 239 applications! 19 young taxonomists were invited in Belgium for short capacity-building trainings (4 weeks). The eligibility was based on the country and institution of origin, and the selection criteria were the scientific quality of the trainee/project, planned dissemination of the results, contribution to the conservation of biodiversity and/or ecosystem services; and how the research can participate in fighting poverty in the South.

These 19 taxonomists were students (Master/Ph. D) or young researchers/assistants in Universities. It was mandatory for them to belong to an official institution (research institution, university...). Unfortunately, one selected

trainee from Cambodia had to cancel her visit at the last minute for personal reasons (she found a job and her boss would not let her leave for 1 month), thus only 18 visitors came to Belgium.

These young taxonomists came from the following countries: Benin (4 people), Burundi (1), Côte d'Ivoire (1), D. R. Congo (4), Morocco (1), Rwanda (2), Senegal (1), Uganda (1) and Vietnam (3).

Our visitors were trained at the RBINS, Meise Botanic Garden (MBG) and Université Libre de Bruxelles (ULB). See table 8 for the full list of trainees and details.



Fig. 8. Prosper Umuntunundi from Rwanda observing land snails dissections under the supervision of his tutor Thierry Backeljau at the RBINS. (Photo@M-L Susini Ondafe)

Table 8: list of guest researchers for the taxonomic training and access to collections in Belgium in 2017 (sorted per country). Students with * received complementary funding by other institutions to extend their stay.

NAME	COUNTRY	VISIT PERIOD	RESEARCH TITLE	TAXA	RELEVANCE TO DEVELOPMENT	AFFILIATION	TRAINING LOCATION
KOUDENOUKPO Zinsou Cosme	Benin	3-30 September	Taxonomie et systématique des Gastéropodes (Mollusques) dulcicoles du Bénin	Molluscs	Assessment of drinkable water + health issues	UAC	RBINS
<i>OLODO Banigbé Itounou Isabella Yasmine</i>	Benin	1-29 October	Ecologie du phytoplancton et bioindication de la qualité de l'eau du lac Ahémé au Bénin	Phytoplancton	Assessment of drinkable water + health issues	UAC	Meise
<i>BADOU Akotchayé Sylvestre</i>	Benin	4 November – 1 December	Systématique, distribution et Écologie des Boletales d'Afrique de l'Ouest	Mushrooms	Food	UAC	Meise
<i>HOTEKPO Sourou Joseph</i>	Benin	15 January – 9 February 2018	Taxonomie, systématique et utilisation des ostracodes en pisciculture au Bénin	Macroinvertébrates	Food + aquaculture	UAC	RBINS
<i>NDAYIKEZA Longin</i>	Burundi	1 July – 26 August *	Etude de l'influence de l'anthropisation sur l'abondance et la diversité des insectes pollinisateurs du Parc National de la RUSIZI jusqu'en ville de BUJUMBURA	Bees	Pollination	OBPE	RBINS
<i>MWANGA MWANGA ITHE Jean-Claude</i>	DR Congo	3 July – 30 September *	Traitement taxonomique de la famille des Convolvulaceae dans la Flore d'Afrique centrale (R.D. Congo, Rwanda et Burundi)	Plants	Conservation	Centre de Recherche Sciences Naturelles de Lwiro (CRSN/LWIRO)	Meise en de

<i>MILENGE KAMALEBO Héritier</i>	DR Congo	5 November - 2 December	Taxonomie des Chanterelles (Cantharellus, Basidiomycètes) des forêts denses de la région de Kisangani en République Démocratique du Congo	Mushrooms	Food	Université de Meise Kisangani	de Meise
<i>BIRINGANINE MUGOLI Elisabeth</i>	DR Congo	5 November - 2 December	Diversité et écologie des champignons comestibles des forêts à <i>Michelsonia microphylla</i> , <i>Uapaca sp.</i> et <i>Gilbestiodendron dewevrei</i> dans le massif d'Itombwe	Mushrooms	Food	Centre de Recherche en Sciences Naturelles de Lwiro (CRSN/LWIRO)	de Meise
<i>LISIKO BOYEMBA Anaclet</i>	DR Congo	5 November - 2 December	Identification des Herbiers et élaboration d'un guide de terrain basé sur les Caractères végétatifs de ligneux de Kisangani RD Congo	Plants	Conservation of protected areas	Université de Meise Kisangani	de Meise
<i>KOUAKOU Lombart Mesmer Maurice</i>	Côte d'Ivoire	1-28 October	Can urban parks and forested green spaces be considered as an alternative to biodiversity conservation in Abidjan district? Ants as case study	Ants	Conservation	Université Nangui Abrogoua	RBINS
<i>BENYAHIA Yousra</i>	Morocco	1-28 October	Inventaire des Hyménoptères de la sapinière du Parc National de Talassemtane (Rif, Maroc)	Insects	Agriculture + pests	Université Chouaib Doukkali	RBINS
<i>UMUNTUNUNDI Prosper</i>	Rwanda	3-30 September	Compiling the data on land snails from Kahuzi-Biega National Park in the Royal Belgian Institute of Natural Sciences and identification of urocyclid slugs and semi-slugs (Pulmonata, Gastropoda) from the Afromontane forests of the Albertine Rift	Molluscs	Conservation of protected areas	Mbarara University of Science and Technology	RBINS

<i>NSENGIMANA Venuste</i>	Rwanda	1-28 October	Use of soil arthropods as indicators of the soil quality in southern Rwanda	Insects	Agriculture pests	+	University of Rwanda	RBINS
<i>FALL Safiétou Tooli</i>	Sénégal	19 August – 16 September	Evaluation des impacts des attaques de termites dans les plantations de manioc au Sénégal	Termites	Agriculture pests	+	Institut Sénégalais de Recherche Agricole (ISRA/LRNPA)	ULB
<i>NATURINDA Zerubabeeli</i>	Uganda	1-28 October	Sustainable land use and resilient livelihoods in the landslide-prone region of Mount Elgon, Uganda (SureLive)	Ants	Agriculture pests	+	Busitema University	RBINS
<i>DO MANH Cuong</i>	Vietnam	16 Nov.–9 December	Prioninae of Vietnam, Taxonomical Revision and Distribution	Insects	Conservation of protected areas		Vietnam National Museum of Nature	RBINS
<i>DO Van Tu</i>	Vietnam	6 August – 2 September	The biodiversity of freshwater mussels (Bivalvia: Unionoida) of Vietnam	Molluscs	Water quality assessment		Institute of Ecology and Biological Resources	RBINS
<i>HUYNH Thien</i>	Quang Vietnam	15 January – 3 February 2018	Building capacity on ichthyological research in Vietnam: creating and management of freshwater fish collection at Southern Institute of Ecology	Fish	Collection management		Southern Institute of Ecology	RBINS

The trainings were evaluated by tutors and trainees. Each trainee is asked to evaluate his visit (logistics, housing, tutoring, material he could use at the lab, etc.). A second evaluation form is sent to the Belgian tutors in order to have a feedback on the trainees. All the received reports so far give very positive replies, both from the trainees and the tutors. It encourages us keeping on doing our best to make the trips and stays in Belgium as smooth as possible and offer the best possible access to the rich knowledge and facilities offered in Belgium in the field of taxonomy.

We also ask each trainee to send a scientific report of his training at the latest one month after he returned to his home country.

An overview of projects carried out by our visitors along with their scientific reports can be found on our website (projects going on since 2014 until now) http://www.taxonomy.be/gti_calls/grants_awarded/grants-taxonomists-partner-countries-2014).

In 2017, we continued our alumni programme and maintained contact with our former visitors and trainees. We are pleased to announce that Bill KASONGO WA NGOY KASHIKI, GTI alumnus, successfully defended his Ph. D. thesis, at the Faculté des Sciences Agronomiques, Université de Lubumbashi, R.D. Congo. His thesis was entitled 'Productivité et valorisation des champignons sauvages comestibles de la forêt claire de type Miombo (Haut-Katanga ; République Démocratique du Congo)'. Mr Olaniran Hamed, another GTI alumnus, successfully defended his Ph. D. thesis on 3rd July 2017 at Université d'Abomey-Calavi, Benin. The title of his thesis is: 'Ecologie comparée des Macroinvertébrés et Bioindication de la Qualité de l'eau des Lacs Nokoué et Ahémé au Bénin (Afrique de l'Ouest)'.

We received information on other types of outcomes of our programme, such as scientific publications, popularisation communications and/or recommendations for management/action. All the relevant information is disseminated on the 'News' section of our website here <http://www.taxonomy.be/news>. For example, we were happy to learn that GTI alumnus Héritier MILENGE KAMALEBO was hired as research assistant at the 'Institut Supérieur Pédagogique (ISP) of Bukavu, D.R. Congo.

The full list of scientific outputs of actual or former GTI trainees for the year 2017 can be found online on our website here: http://www.taxonomy.be/gti_calls/grants_awarded/publis-gti/2017.



Fig. 9. Bill Kasongo Wa Ngoy Kashik with his jury at his Ph.D. defence, Faculté des Sciences Agronomiques, Université de Lubumbashi, DR Congo. (Photo@M-L Susini Ondafe)

Finally, for the first time in late 2017, the Belgian GTI team organised *2 workshops dedicated to scientific writing and publishing*, aimed at GTI and MRAC trainees. The trainer was Ms Isabelle Gerard who is the head of the joint Publications Service of the MRAC and the RBINS. The workshops took place in October and November 2017 when the highest numbers of trainees were present in Belgium. The workshops took place at the RBINS.

Indeed, writing a scientific article is a precise and often difficult task, particularly for those attempting it for the first time. Efficient submission of papers requires some familiarity with scientific publishing and its current trends, which include open access, fast track publishing, and enhanced publications. Publications play an important role in the evaluation of a researcher's work, hence the usefulness of understanding and applying the concepts of bibliometrics and impact factor. The trainer provided a quick introduction to these elements, with overviews, tips, and links to aid users who can then seek further information relevant to their respective disciplines. The workshop ended with practical exercises. All trainees received a syllabus and a CD-Rom with a lot of useful material.



Fig. 10. Trainees attending the 1st workshop on scientific publishing held on 26 October 2017 at the RBINS. (Photo@M-L Susini Ondafe).

Expected result 1.2 Quality scientific knowledge is produced and used for the better understanding and management of biodiversity in partner countries

Description

Collaborative projects will be organised with partner institutions that cover training, research support to improve small infrastructures (such as material for scientific collections, lab work, training in the use and application of models to manage ecosystem services) and networking. Such projects will be undertaken with well-established partners that have signed a partnership agreement; there are a number of selection criteria for such partnerships, such as a significant operational role and mandate in the national strategy and policies at national and international level, a positive track record of past cooperation (e.g. grants, work on archives, workshops, and trainings), requests for additional cooperation.

This expected result focuses on the generation and appropriate use of scientific knowledge related to taxonomy, ecology and ecosystems (function, services). Due to historical reasons, budget line and content reasons, it is subdivided into four parts (A to D), each dealing with one aspect and related to different partners and concepts of work (see below).

All activities undertaken to achieve this expected result, whether training workshops, research projects or equipment support, are developed in the framework of long-term partnerships. They all intend, in addition to the mentioned expected result, to consolidate partner institutions and enhance their role in their respective countries.

Log frame (partim)

Expected Results	Output Indicators	Report 2017
<p data-bbox="190 335 616 375">(4 parts: A, B, C, D)</p> <p data-bbox="190 430 616 510">1.2 Quality scientific knowledge is produced</p> <p data-bbox="190 574 616 654">1.2.1.(A) taxonomic research is strengthened</p> <p data-bbox="190 893 616 1101">1.2.2.(B). the monitoring of habitats for the management of ecosystems is strengthened</p>	<p data-bbox="616 406 1137 877"> A Number of trained students / year will produce; Publications in scientific journals and general media; graduates (Master or Ph. D.); In-country training courses as multiplier effect and additional people trained. Results will be valorised through publication in renowned science journals. They will also be used under SO1.4. A and B to produce vulgarisation tools. </p> <p data-bbox="616 957 1137 1316"> B At least one training per country is organized and is followed by two applications campaigns on the field. 30 people trained in the habitat monitoring, Syllabi produced and/or updated (see also 1.4.B) 4 articles published in peer reviewed journals, 4 lexicons will be finalized and used, see also SO1-4b. </p>	<p data-bbox="1137 406 2121 917"> A The 5 projects selected in 2017 were: Taxinomie, systématique et biodiversité des oligochètes des eaux souterraines du Bénin by P. Martin A step further in the Entomodiversity of Cambodia (part I) by J. Constant A step further in the Entomodiversity of Vietnam (part VIII) by J. Constant Increasing Marine Taxonomic Knowledge in Mozambique: the Case of Two Neglected Taxa, by Y. Samyn Training course on Hymenoptera and other pollinators in Tanzania by A. Pauly Several articles by P. Martin, J. Constant and W. Dekoninck, e.g. Thomas Parmentier & Kolo Yéo & Wouter Dekoninck & Tom Wenseleers 2017. An apparent mutualism between Afrotropical ant species sharing the same nest. Behav Ecol Sociobiol (2017) 71:46 </p> <p data-bbox="1137 957 2121 1061"> B Several field studies and workshops in RDC. </p> <p data-bbox="1137 1101 2121 1316"> Publications HOUENAHOU, T. ; ASSEDE, E. ; HABIYAREMYE MUHASHY, F.; SOGBOHOSSOU, E. ; KOUTON, M. ; ONDJE AGBANI, P. ; HOUINATO, M YAOITCHA, A. GBEFFE, A. 2017 - La Réserve de Biosphère de la Pendjari (Bénin). Guide & lexique pour le suivi des parcours naturels : Habitats, Faune et Feux. IRSNB. 142pp. </p>

1.2.3. (C). taxonomic research and the monitoring of lowland forests at the University of Kisangani is strengthened

Over 5 years: 2 PhD students, 6 master students finalised their thesis, 5 oral contributions (participation to meetings, conferences, lectures, seminars...).

5 information exchange sessions have been organised in relation with poverty reduction related subjects of the studies.

C

3 PhD students identified

3 PhD students/year followed training supervised by expert in Belgium/ elsewhere (total=15)

For 3 PhD students: 1 local visit/2years by supervisor (total=9)

1 'atelier de restitution'/year for the 3 PHD students after their training framed in the context of poverty reduction related subjects of the studies (total=4+the PhD defence)

2 publications in scientific journals/PhD student (total=6).

BIRINGANINE MUGOLI, E.; HABİYAREMYE MUHASHY, F.; MASUMBUKO NDABAGA, C. 2017 – cUtilisation des lianes des forêts des montagnes du Parc National de Kahuzi-Biega. Bull. Sc. Env. Biodiv. (2):17-25

NDAMIYEHE NCHUTIRAKIZA, J.B.; NDAGIJIMANA NDAMIYEHE, E.; HABİYAREMYE MUHASHY, F.; KADIATA DIKAND, B. 2017 – Rôle, présence et besoin d'arbres dans le paysage urbain de Kinshasa. Annales de l'UNIGOM, Vol. VII, N° 2: 87-102

C In 2017 we organized research stays for three Congolese scientists.
Project titles:

Steve Ngoy Luhembwe: 'Le rôle des ticks comme vecteurs de zoonoses chez les mammifères dans la région de Kisangani (R.D. Congo)'

Casimir Nebesse Mololo: 'L'exploitation et commercialisation de la faune Mammalienne par les habitants du bassin du Congo et stratégies de conservation durable des espèces en forêt tropicale humide (R.D. Congo)'

Prescott Musaba Akawa: 'Phylogéographie, zoonose et biodiversité des chauves-souris de la forêt de basse Altitude (Kisangani, RDC)'.

A1 publications

Musaba P. Akawa, Malekani A. Bendeki, Kirongozi F. Botelanye, Shabani I, Nebesse C. Mololo, Van V. Cakenberghe, E. Verheyen; Gembu G.C. Tungaluna, Justin A. Asimonyio, Masengo C. Ashande, Koto-te-Nyiwa Ngbolua. 2017. A survey of the bushmeat trade of the straw-coloured fruit bat (*Eidolon helvum* Kerr, 1792) at Maele Island (Kisangani city, Democratic Republic of the Congo). *J. of Advanced Botany and Zoology* Volume 4 /Issue 4 ISSN: 2348 – 7313

Van Caekenberghe V., Gembu G.-C., Musaba P., Seamark E., Verheyen E. (in press) The bats of the Congo and of Rwanda and Burundi Revisited (Mammalia: Chiroptera). *European Journal of Taxonomy* 2017 (382) - Pages 1-327.

1.2.4.(D) Application of the COHERENS model for integrated coastal management and monitoring of ecosystems

D
Review of the presentation of the specific research questions of the partner institutes
Number of scientific output (presentations, conference)
Number of qualified trainee ex-post reports within the visitors programme
3 policy briefs are to be produced by the partners
Documentation of the Developed modules for COHERENS available.

Participations at international conferences

D
Output marine modeling
2 oral presentations, 1 poster presentation (Peru)
Stakeholder meeting Peru (closing), with reporting by Belgian embassy via TELOPS
1 policy brief (Peru)
1 master thesis : economic assessment of biodiversity in Halong bay (working title) in cooperation with dr. Tine Compennolle of the University of Antwerp (Vietnam)
Successful stakeholder meeting Benin
The projects with Peru, Vietnam and Benin are registered on the UN-website to emphasize our commitment to achieve the SDG 14 on marine life (or simply perform a search for CEBioS on <https://oceanconference.un.org/commitments/>)
#OceanAction16301 for Benin, see <https://oceanconference.un.org/commitments/?id=16301>
#OceanAction16292 for Vietnam
#OceanAction16286 for Peru) see <https://oceanconference.un.org/commitments/?id=16286>

Table 9: log frame (partim) for SO1, 1.2.

ACTIVITY 1.2.1. (A). SUPPORTING TAXONOMIC RESEARCH

In April 2017, we organised our [1st GTI uptake meeting in Vietnam](#). The meeting was funded thanks to remaining budget allocated to activity 1.2.1(A) in 2016.

There is a long lasting scientific collaboration between the RBINS and research institutions from the Vietnam Academy of Science and Technology. The collaboration started with the Institute of Ecology and Biological Resources (IEBR) and it was followed by a collaboration with the Vietnam National Museum of Nature (VNMN). This collaboration was initiated in 2007 thanks to funding from the Belgian Ministry of Cooperation (DGD) via the Belgian GTI focal point that is hosted at the RBINS, and part of the CEBioS programme. Since 2007, numerous trainings of Vietnamese researchers took place both at the RBINS in Belgium and during field expeditions in Vietnamese protected areas. This work led to a better knowledge of the Vietnamese entomofauna and built the skills of Vietnamese researchers and technicians. It also enabled the improvement of entomological collections and of collection management and the study of the material preserved at VNMN. Moreover, many new species have been described.

Since scientific research should help decision-making in the field of biodiversity conservation and sustainable use (e.g. CBD Aichi target 19), we consider that all the results had to be shared with the national and regional competent authorities of Vietnam in strong ownership. To this aim, we organised a [restitution meeting \(also called 'uptake'\) in Vietnam](#) from 3 to 6 April 2017. See <http://www.vast.ac.vn/en/news/activities/1756-gti-uptake-meeting-in-vietnam-showing-results-of-10-years-of-entomological-research-to-vietnamese-stakeholders>.

During the first 2 days, a group of 16 scientists from Belgium, Cambodia, France, Italy and Vietnam worked together in Ha Noi in order to share the results of their entomological research in Vietnam and to prepare outputs that would be used during the restitution meeting to Vietnamese authorities.



Fig. 11. Participants of the Ha Noi workshop during the GTI uptake meeting.

The last two days of the meeting took place in Cuc Phuong National Park. A total of 42 participants participated in the meeting: 20 directors of the 20 National Parks where the research expeditions took place over the last 10 years, 4 Representatives from the Ministries in charge of Environment, Forestry and Tourism in Vietnam, 4 members of the RBINS: 2 from the CEBioS programme, ML Susini Ondafe and Luc Janssens de Bisthoven, & 2 researchers, Jérôme Constant & Joachim Bresseel, 5 members of the Vietnam National Museum of Nature (VNMN), among which Assoc. Prof. Dr. Nguyen Trung Minh and Dr Hong Thai Pham, 2 representatives of the Vietnam Academy of Science and Technology (VAST), Mr. Anh Cuong Pham, Director of the Biodiversity Conservation Agency and Vietnamese CHM national focal point, 2 researchers from the Royal University of Phnom Penh, Cambodia (new South-South cooperation initiated in 2016), 4 European researchers, 3 from the 'Museum national d'histoire naturelle', Paris, France (MNHN) and one from the Natural History Museum, Zoological Section, La Specola, Italy and 5 Journalists from the Belgian and Vietnamese televisions.



Fig. 12. 1st page of the policy brief dedicated to insect biodiversity in Vietnam.

On Wednesday 5 April 2017, the GTI restitution meeting took place in the meeting room of Cuc Phuong national park. Live translation in Viet was provided during the whole meeting. The last day was dedicated to a field trip in Cuc Phuong National Park. More details on the meeting and all given presentations can be found here: http://www.taxonomy.be/gti_calls/grants_awarded/grants-rbins-2014/constant-and-grootaert-vietnam/gti-uptake-meeting-vietnam-2017. The work did not end with our return in Belgium. In contrary, Jérôme Constant and all the involved scientists worked together under the supervision of CEBioS and produced a policy brief, which will be distributed to all stakeholders in Vietnam in early 2018. The policy brief is available here: http://www.taxonomy.be/gti_calls/grants_awarded/grants-rbins-

[2014/constant-and-grootaert-vietnam/policy-brief-vietnam](#). It was shared on 'Researchgate' by J. Constant and reached more than 530 views in a month. J. Constant was also contacted by researchers from The Philippines who want to replicate the uptake meeting with their national policy makers.

The 14th internal GTI call for proposals was launched in early 2017. This call was addressed to RBINS researchers. Projects must be built around the provision of training to students, scientists and/or technicians in the South. Selected projects must contribute to strengthen local institutions. It must also have an applied component that either targets the conservation or the sustainable use of biodiversity, which are essential to better understand the services provided by ecosystems.

We selected 5 high quality projects. They are the following:

- Taxinomie, systématique et biodiversité des oligochètes des eaux souterraines du Bénin by P. Martin
- A step further in the Entomodiversity of Cambodia (part I) by J. Constant
- A step further in the Entomodiversity of Vietnam (part VIII) by J. Constant
- Increasing Marine Taxonomic Knowledge in Mozambique: the Case of Two Neglected Taxa, by Y. Samyn
- Training course on Hymenoptera and other pollinators in Tanzania by A. Pauly.

At the end of the projects, researchers were asked to provide reports (both narrative and financial) and a list of their outputs such as publications in scientific journals, posters, presentations given at international meetings, etc. The narrative reports and the outputs are published on our website (http://www.taxonomy.be/gti_calls/grants_awarded/grants-rbins-2014/) for public awareness purpose and knowledge dissemination.

Project 1. 'Taxinomie, systématique et biodiversité des oligochètes des eaux souterraines du Bénin'

by Dr Patrick Martin

Text in French taken from the report submitted by Dr P. Martin (shortened):

En 2017, les tâches effectuées ont été : formations – renforcement des capacités ; campagne d'échantillonnage sur le terrain de 15 jours ; tri du matériel récolté au laboratoire de Parasitologie et d'Ecologie parasitaire de l'UAC ; clés d'identification des oligochètes du Bénin. A ce jour, trois bases de données de connaissance taxonomique ont été développées pour les oligochètes du Bénin ; identification du matériel récolté, description d'espèces et création d'une collection de référence ; « DNA barcoding » des oligochètes par M. Lagnika à l'IRSNB (1 mois).



Fig. 13. Sampling at well n° BEN104 (Témé) and raising awareness of local population (Photo@Patrick Martin). Dr P. Martin giving a lecture on Annelids to Hydrobiology Master's students of UAC (Photo@Moissou Lagnika).

All relevant information (full reports, database...) is available on our website here: http://www.taxonomy.be/gti_calls/grants_awarded/grants-rbins-2014/p-martin-benin

Project 2. 'A step further in the Entomodiversity of Cambodia (part I)'

by Jérôme Constant and Frederik Hendrickx

The mission took place in October 2017 for 2 weeks.

The following scientists actively participated in this part of the project: Mr. Jérôme Constant (JC), Expert in Collection Management, O.D. Taxonomy & Phylogeny, Entomology (RBINS) – 2 weeks field trip in Cambodia / mounting & identification (Fulgoromorpha, Phasmida) in RBINS / management of the project; Mr Sophany Phauk (SP), lecturer (RUPP, Cambodia) - training in field collecting and taxonomy; Mr. Xavier Vermeersch (XV), Scientific Collaborator, O.D. Taxonomy & Phylogeny, Entomology (RBINS) – 2 weeks field trip in Cambodia / mounting & identification (Mantodea) in RBINS. A total of 6 students from RUPP participated in the training in field collecting and taxonomy.

See GTI website for articles already published here:

http://www.taxonomy.be/gti_calls/grants_awarded/publis-gti



Fig. 14. Yeak Laom Lake and Kachan Waterfall fauna and landscape. (Photos@Jérôme Constant).

Assessment of RUPP-CEI collections

The young collection of RUPP-CEI (started in 2014 by SP) already contains an impressive number of specimens and is kept under very good conditions in a room with air conditioning and the specimens are well mounted and labelled. It is the first of its kind in Cambodia and will be a great source of discoveries (e.g. new species, new country records) in the coming years because the fauna of Cambodia is very poorly documented as compared to the fauna of neighbouring countries. It will also serve as an example on how entomological collections should be set up in other institutions.

Two seminars were given at RUPP for a numerous audience (50+) of RUPP students and professors, staff from the Ministry of Environment and Institut Pasteur in Phnom Penh, and expats interested in entomology. The first seminar presents the results of the policy brief “Vietnam, a champion for insect biodiversity: A win-win commitment” which resulted of the GTI uptake meeting in Hanoi in April 2017 (https://www.researchgate.net/publication/322557227_Vietnam_a_Champion_for_Insect_Biodiversity_a_Win-Win_Commitment). This topic was very relevant in Cambodia because the country shares a number of typical habitats with its neighbour Vietnam. The second seminar was a first insight in the diversity, characteristics and taxonomy of praying mantises, an extremely poorly documented group in Cambodia.



Fig. 15. Jérôme Constant during the RUPP seminar. (Photos@Xavier Vermeersch)

Dissemination of the project results

Together with the NGO Fauna in Focus (<https://www.faunainfocus.org/>), the RBINS scientists organized a workshop on insects in the forest near Angkor. This activity was open to the general public and aimed to raise awareness about insect diversity and the lack of data on the latter in Cambodia. A presentation based on the 2016 paper by Constant et al. by optimizing field work surveys with citizen science involvement through Facebook networking and data access in FLOW website. [Belgian Journal of Entomology, 37: 1–16], was given to explain the advantages of citizen science for e.g. insect inventories. Twelve people attended the workshop, and the fieldwork was also

an opportunity for CEI students to share the knowledge they have acquired during the expedition. The NGO Fauna in Focus recently produced the first documentary on Cambodian biodiversity (https://www.youtube.com/watch?v=4_oOu5HBPZs) and the RBINS scientists plan to go on organizing similar workshop with them in the future.

VIETNAM

Project 3. 'A step further in the Entomodiversity of Vietnam (part VIII)'

by Jérôme Constant and Frederik Hendrickx

The mission in Vietnam took place in July 2017 for 3 weeks.

List of participating scientists: Mr. Jérôme Constant (JC), Expert Taxonomist, O.D. Taxonomy & Phylogeny, Entomology (RBINS) – 3 weeks field trip in Vietnam / mounting & identification (Fulgoromorpha, Phasmida) in RBINS / management of the project; Dr Hong Thai Pham (HTP), head of Collection Specimens Management Department (VNMN) – 3 weeks field trip in Vietnam / mounting & identification (Cicadidae) in VNMN; Mr. Joachim Bresseel (JB), Scientific Collaborator, O.D. Taxonomy & Phylogeny, Entomology (RBINS) – 3 weeks field trip in Vietnam / mounting & identification (Phasmida) in RBINS; Mr Van Dat Nguyen (VDN), Specimens Collections Department (VNMN) – training in entomology fieldwork; Mrs Nguyen Thi Man (NTM), researcher (VNMN) – training in Auchenorrhyncha taxonomy and fieldwork techniques; Mr. Pol Limbourg (PL), Collection Manager, Entomology (RBINS) – mounting & identification (Coleoptera Rutelinae) in RBINS.



Fig.16. Pu Mat National Park, fauna landscape and sampling at night. (Photos@J. Constant)

The policy brief is available here:

https://www.researchgate.net/publication/322557227_Vietnam_a_Champion_for_Insect_Biodiversity_a_Win-Win_Commitment

The seminars were followed by a workshop for VNMN entomology staff on mounting stick insects and small Auchenorrhyncha specimens.



Fig. 17. Some of the new species recently described in the framework of this GTI project. (Photos@J. Constant)

Dissemination of the project results

From 3 to 6 April 2017, CEBioS organized a GTI uptake meeting on the collaboration between entomologists from the RBINS and VNMN in Vietnam (Hanoi and Cuc Phuong National Park). Colleagues from the Muséum National d'Histoire Naturelle (Paris, France), Natural History Museum of the University of Florence (Italy) and the Royal University of Phnom Penh (Cambodia) were invited to collaborate in the production of a policy brief promoting the relation between the taxonomic research and an efficient protection of the biodiversity. The results were presented to the Vietnamese authorities. The policy brief is available from the Internet and has already been downloaded 500+ times. Moreover, we have been contacted by a colleague from the University of the Philippines, Los Baños, who asked for assistance to organise a similar project in the Philippines. The uptake meeting was followed by a Belgian TV team who produces a series of documentaries about the research and researchers of RBINS. They also accompanied us one week in the field in Phong Dien VNMN Field Station and Bach Ma National Park. The series is to be released at the end of 2018 (trailer: <https://vimeo.com/209523812>).

Conclusion and perspectives

This GTI project was very successful again in all its aspects: insect collecting (many new species and new records), contacts between the members of the staff learning experiences and sharing of knowledge and projects for further future collaboration, and especially the spreading of the policy brief towards the authorities of the national park and reserves that RBINS scientists visited this year. We hope that our Philippine colleagues will be successful with their project of a similar policy brief on their country. At the time we were writing this report (mid-February 2018), the last 2 GTI internal projects selected in 2017 had not taken place yet due to unforeseen issues, thus it is not possible to report on them. Here is a short presentation of each project based on the project proposals:

MOZAMBIQUE

Project 4: Increasing Marine Taxonomic Knowledge in Mozambique: the Case of Two Neglected Taxa

by Y. Samyn

Mozambique has the third largest coastline in mainland East Africa. This coastline is – Somalia excluded – taxonomically the least explored in Eastern Africa. This is a matter of much regret given that studies show that this is an extremely productive area due to difficult to characterize up-welling and eddy systems, making it perhaps the highest biodiverse region in the Indian Ocean. The three recognised marine bioregions (basically the South, the centre and the North of the country) deserve detailed taxonomic study. Regretfully, such study is non-existing for many taxa. This project aims to lessen this by studying two taxa that have an important ecological and economic importance: echinoderms and macroalgae. In doing so, this project will be instrumental in alleviating poverty in a country that is undergoing rapid demographic changes that put high pressure on the environment. The two aimed taxa will, in this phase, be sampled in central Mozambique (marine station near to the town of Quelimane). This training will be organised in 2018 at the Inhaca Marine Station in the South of the country.

Project 5: Training course on Hymenoptera and other pollinators in Tanzania

by A. Pauly

There is increasing global concern regarding pollinator population declines related to land use intensification, climate change and poor pollinator management. The College of African Wildlife Management in Mweka (CAWM), Tanzania, has proposed a project to the JRS Biodiversity Foundation to assess the diversity, abundance, and distribution of pollinators in Tanzania. They contacted the RBINS to join efforts to manage a training session on systematics of pollinators. RBINS has a large international expertise on Hymenoptera, an important group of pollinators including bees, wasps, ants and sawflies. Three experts from the RBINS, Alain Pauly, Wouter Dekoninck and Jean-Luc Boevé, participated in the training in Mweka from 20 February to 14 March 2018. 12 participants were trained including project team members, students and lab technicians. The training was performed in collaboration with, and with co-financing from, the JRS Biodiversity Foundation. The director of the project in Tanzania is Henry Njovu, who works at the College of African Wildlife Management, Mweka (CAWM) and at the University of Würzburg, Germany.

The training itself, mainly led by A. Pauly, addressed the following aspects:

- Introduction to different groups of Hymenoptera playing a role in pollination. The economic contribution of pollinators to crop production is significant, and bees are generally considered the most important pollinators of crops.
- Field comparison of different methods to collect bees (and other pollinators), with hand net, by yellow pan traps, and Malaise traps.
- Introduction to the main subgroups (families, genera) of bees collected in the field.
- In the field, selectively collecting bees on flowers, followed by the identification of the plant species.
- Technique of preparing specimens by mounting them on pins.
- Labelling of specimens to mention all-important information for their further study.
- Thus, field and laboratory work was alternated to carry out this training. A temporary collecting and training permit allowed the team to collect in Arusha National Park that includes Mount Meru. Some net collecting and placement of yellow pan traps were carried out, at altitudes between 1400 and 2600 m.
- Finally the scientists discussed the protocol with some students, to continue the project with the JRS Foundation. The survey will start with one plot in Mweka and two plots in the Arusha National Park.



Fig. 18. Trainees collecting bees near Mweka using hand net technics, Mount Kilimandjaro in the background. (A. Pauly)

ACTIVITY 1.2.2. (B). SUPPORTING THE MONITORING OF HABITATS FOR THE MANAGEMENT OF ECOSYSTEMS

The annual reports for 2017 written by our institutional partners OBPE (Burundi) and UAC (Benin) are reported under Part II Institutional cooperation. The reporting here concerns the capacity building activities involving CEBioS staff, especially Dr François Muhashy on the monitoring of habitats in protected ICCN areas in R.D. Congo with scientific expertise from local universities.



Activities with the ICCN, UOB, UNIGOM: monitoring of habitats and valorisation of Ecosystem Services (ES)

In 2017, the criteria already standardized on a LEM file were used to characterize habitats according to their various dynamic stages along transects where mushroom diversity inventories and ethnomycology were carried out during a field mission and where they will be repeated later in the Virunga National Park (PNVi).

Mission carried out to provide reference knowledge for the rehabilitation of Ruzizi Natural Reserve (RNTR).

This activity was undertaken in accordance with the wishes expressed by MM Kisuki Mr Mathe (Technical Director) and Paul Nlemvo (Director of National Parks) and Dr Wilungula Balongelwa Cosma (General Director) two years ago.

In 2017, the mission carried out by Professor Masumbuko Cephas and his team (UOB) with the RBINS support brought complementary data on the habitats, fauna and mycological component of the RNTR. Among other results 89 birds species were recognized in Ruvubura swamp within the central part of 3,172.8 ha that constitutes the less disturbed part of the reserve. These elements make it possible to establish a final report whose content can be also published as an article.



Fig. 19. Marécage de Ruvubura garni d'une *Panicum sp.* basse et entouré par *Typha sp.* et au-delà duquel s'observe un peuplement à *Borassus sp.*

Mushrooms in Virunga and Itombwe

In the Virunga National Park

After his DEA dissertation prepared at the UNIKIS with the support of the RBINS, Jean-Claude Rizinde (UNIGOM) is extending his investigations on the diversity of edible mushrooms on other parts of the PNVi. Under the supervision of Dr Jerome Degreeef (JBM) and Dr François Muhashy (RBINS-CEBioS), he carried out a new mission in the north sector of the PNVi.

The mission allowed collecting 80 samples of edible mushrooms (fig. 20).



Fig. 20. Spécimens des champignons séchés et conditionnés.

Their spores were sent to the mycology lab at the UCL, where production of monospore cultures will be done. This step is necessary in a process that combines ecological, biological and molecular criteria to identify species.

In the short term, these data will serve to develop biodiversity indices in order to explain the variations of the mycodiversity according to the variations of the phytodiversities. 93 plant specimens were prepared and included in a herbarium in order to fully identify them, which will help to characterize the environments of the edible mushrooms.

The “Réserve Naturelle de l’Itombwe »

During her mission of October -December 2017 in the Itombwe reserve, Miss Biringanine Mugoli Elisabeth, under supervision of Prof Masumbuko N. Cephas (UOB), studied mushrooms in relation with their habitats. Different investigated forests have been recognized based on their dominant tree species, mainly *Michelsonia sp.* (Fig. 21); *Gilbertiodendron dewevrei*; *Uapaca spp.*; *Samanea spp.*; *Julbernardia sp.*



Fig. 21. Pictures of 48 in situ mushroom and those regarding the herbarium specimens were taken.

On the basis of previous internships at JBM, it has been hypothesized that among the collected scientific material there would be 7 new species for science. Therefore, it is recommended to perform molecular analyzes to verify this hypothesis.

Implementation of the project funded by BELSPO to promote the international networking of federal scientific institutions (ESFS)

In the framework of promoting Ecosystem Services, we implemented the 2nd phase of the "Mycologists Network of the Great Lakes Region of Africa (RMGL). This project has been selected by Belgian Science Policy (BELSPO) in the context of strengthening the international networks of the Federal Scientific Establishments (ESFs), including the RBINS. The final workshop was organised at the UNIGOM in June 2017 under the RBINS coordination. The Botanic Garden Meise was involved as a northern partner while the Southern beneficiaries were: UNIGOM, UOB, OBPE, UB, UR. At this occasion (i) the functioning of the RMGL was formalized; this network comprises 68 members; (ii) methods to assess the productivity of mushrooms in the region have been standardized (<http://mycorgl2016.jimdo.com/programme/>; www.EFTA-online.org); (iii) their use as tools to assess the availability of mycoflora in all the forests of the region has inspired initiatives to test the domestication of wild mushrooms and to valorize them as food and / or source of income, this in accordance with recommendations from several local NGOs (Fig. 22).



Fig. 22. Distribution des bottes de production des pleurotes par la LSC/asbl (© Joséphine Malimukono), Présentation aux membres du Réseau du local qui sera aménagé en laboratoire de mycologie par le Secrétaire Général Académique de l'UNIGOM ; Site du lac Vert

The success of these activities became an asset of the acceptance by the "ARES" of a new and more important research and development project (2018-2022), which ensure durability of the former results of the network (Fig. 22). It will not only complete inventories and ecology of edible mushrooms throughout the Albertine rift, but also determine their nutritional qualities as well as the monetary value. Under these criteria, the most interesting species will be tamed. A dozen representatives of local NGOs have joined the project in order to vulgarize the results.



ACTIVITY 1.2.3.(C) COOPERATION WITH THE UNIVERSITY OF KISANGANI FOR THE TAXONOMIC STUDY AND THE MONITORING OF LOWLAND FORESTS

Activities

In 2017 we organized, as in the previous years, research stays for the following 3 Congolese scientists (UNIKIS and CSB).

Project titles:

Steve Ngoy Muhembwe: 'Le rôle des ticks comme vecteurs de zoonoses chez les mammifères dans la région de Kisangani (R.D. Congo)'.

Casimir Nebesse Mololo: 'L'exploitation et commercialisation de la faune Mammalienne par les habitants du bassin du Congo et stratégies de conservation durable des espèces en forêt tropicale humide (R.D. Congo)'

Prescott Musaba Akawa: 'Phylogéographie, zoonose et biodiversité des chauves-souris de la forêt de basse Altitude (Kisangani, RDC)'.

The 'rapport de stage' de Casimir Nebesse Mololo can be delivered on demand. Casimir Nebesse Mololo is preparing his PhD. His report summarises part of the research results, which will be presented in this thesis. He has also been involved in the CEBioS - MRV projects on bush meat (2016-2017 and 2017-2018), increasingly showing leadership and authority in his domain during workshops and teamwork with Congolese colleague from other parts of the country. He is considered to be one of the strong holders on whom can be built to expand MRV work on bush meat in the DR Congo.

Steve Ngoy's training was intended to finalise the writing of his 'mémoire de Master', which is going to be submitted early in 2018. He used his time at the IRSNB to organise his stick collections and deposit them in the IRSNB's collections. Steve also executed PCR (Polymerase Chain Reaction) analysis on some samples and participated, together with Casimir Nebesse and Prescott Musaba, at collecting of

samples of bush meat, sold in the Matonge quarter in Brussels, in the frame work of a joint project of BIAC (Brussels Airport), Brussels Airlines and the IRSNB to make travellers aware of the consequences of importing bush meat and other food items into Europe. .

Note: due to long-term absence of Dr Erik Verheyen, the reports of Steve Ngoy and of Prescott Musaba have not yet been finalised and approved. More information on the training of Prescott Musaba is not available either for the same reason.

The tree trainees took part in the research activities developed in the region of Aketi (Bas-Uele) in June 2017, shortly after the Ebola- outbreak in Kagbono, to identify the outbreak sources. (See Annexe 2 for a summary of the activities.) They received specialised training for working in a bio-secured field laboratory. Prof Herwig Leirs, UAntwerpen and Dr Erik Verheyen, RBINS and UAntwerpen, participated in the field research as supervisors for the trainees and their colleagues of the CSB who accompanied them. This activity, executed in collaboration with a number of international institutions and research organisations, not only reinforced the network of the local team and their scientific capacities, but also made it possible to set them up as a potential fast, well equipped, intervention unit in case of future outbreaks in the DRC. VLIR-UOS, in the framework of its IUC with UNIKIS, agreed to financially support this unexpected and important activity.

A team of the CSB, under the scientific supervision of Dr Anne Laudisoit and Dr Erik Verheyen, in collaboration with the KMDA (Koninklijke Maatschappij voor Dierkunde Antwerpen), continued its research in the region of Rethy (Ituri Province) in a relict forest at the borders of Lake Albert to study the chimpanzees and other primates, living in this small but relatively untouched forest (RAFALE project). In May 2017 the team returned to the area to turn a movie, entitled 'Mbudda', on the apes and the scientific research in the area:

The three trainees are involved in the fieldwork programmed for the VLIR South Initiative "Renforcement des capacités académiques face à la réponse et riposte aux épidémies de Monkeypox: discrimination et origine des fièvres éruptives en République Démocratique du Congo (RDC)" coordinated by prof Naulu Ngbonda and Dr Erik Verheyen (RBINS-UAntwerpen). The project was covered in several international media, a.o. in El Pais.

https://elpais.com/elpais/2017/07/17/planeta_futuro/1500304938_337668.html)

Ce projet est axé au renforcement des capacités académiques de l'Université de Kisangani face à la réponse et riposte aux épidémies de fièvres éruptives en RDC en

formant du personnel et des étudiants en épidémiologie et en gestion d'épidémies, et en exécutant un projet pilote qui cible le virus du Monkeypox, avec le personnel de santé de la Zone de Santé d'Aketi (Province de Bas-Uélé). Le projet est composé d'un volet de recherche qui tracera l'origine zoonotique de du virus Monkeypox (chauve souris: Prescott Musaba, viande de brousse: Casimir Nebesse & ticks: Steve Ngoy). Les résultats du volet recherche conduiront à une amélioration des capacités de recherche et de gestion pour mieux contrôler des épidémies de fièvres éruptives en RDC.

Outcomes

A complete list of publications, academic promotions, participations in conferences, and grants obtained, will be provided in the final report of Phase 1 of the CEBioS-programme.

Issues encountered - addressed

With the facilities of the CSB fully functional on the Science faculty campus since June 2014, the local scientific staff (UNIKIS as well as CSB) enjoyed a more reliable Internet and electricity supply, which allowed them to carry out their academic and scientific tasks more effectively than before. Since March 2016, however, the financial support for the daily functioning of the CSB is no longer assured via external funding. As a result the CSB finds itself in a financially extremely precarious situation with gradually deteriorating working conditions for its own staff and for the staff of the Science Faculty, which is frequently using its Internet connection, laboratories, library, meeting rooms and so on. During a long period without electricity in the entire city of Kisangani (October-December 2017), it was almost impossible to organise an Internet connection. This situation requires our attention in order not to lose the investments done in previous years by the Belgian Development Cooperation and by Belgian Science Policy, but also to make sure that the CSB can continue to play its role as Secondary CHM for the DRC, an important factor in CEBioS' activities in the DRC. A discussion on a financing model for the centre with CSB directors and other interested partners is continuously ongoing. UNIKIS provides for a very small contribution during some months and the success rate of submitted grant proposals by CSB staff is slowly increasing. At the same time, discussions on the revitalisation

of its 'Conseil d'Administration' and the reinforcement of its governance structure have been intensified but did not yet come to a conclusion.

ACTIVITY 1.2.4. (D). APPLICATION OF THE MARINE MODELLING TO INTEGRATED COASTAL MANAGEMENT AND MONITORING



Entry-level course on marine modeling Benin (1-3 June 2016)

In 2017 the trial project of 1 year started between IRHOB, Benin and CEBioS. The idea was to give an introduction in marine modelling and see what the potential of our cooperation could be.

Due to some sick leaves the introductory course had to be postponed from February 2017 to September 2017. This has as a consequence that the final workshop and the formulation of a project for 4 years had to be postponed to 2018. 4 students attended the course, their presence was not always predictable. Unpredictable presence of the students together with electricity cuts now and then are the disadvantages of giving a local course, on the other hand, extra information or data were just a short drive away. During the course the technique of project-based learning was applied. The project case was a study that compared modelling results of the gulf of Guinee obtained with different bathymetries (see report in annex). On the side, a small data-mining project was also executed. The end result was presented in the form of a closure workshop with different stakeholders. The presentations and a list of participants can be found in an attachment of this report.



Fig. 23. Some pictures taken during the closure meeting. On the left, a group picture of the team of IRHOB after a successful workshop. On the right Christian Adjé, one of the participants, explaining how the bathymetry of the model was configured.

During the workshop we got the idea to try to measure temperature distributions in 3D with the cheap Arduino technology. This has never been done before and would give IRHOB a great introduction in the scientific world of marine modelling. We decided to enter the prized4d competition in 2018 to find extra funding and to show our work to the outside world.



Stages Vu Duy Vinh (IMER) from July 9th till July 15th 2017

Vu Duy Vinh, the main responsible for the project in Vietnam is in the process of finalizing his PhD, for that reason and because we were ahead on schedule, we decided to keep the activities in 2017 lighter than usual. The work done during the internship however was not trivial and reflects the huge personal developments made by Vu Duy Vinh. We have finalized the sediment model of Halong Bay and decided on the future planning of the project. His aim is to defend his PhD thesis in March 2017, after that date we will intensify the contact again and start finalizing the model with one last long internship in Belgium and a final workshop at the end of 2018.

We decided to bring Vietnam into contact with dr. Tine Compernelle from the university of Antwerp. Her area of expertise is to link biology with economic models. This resulted in a thesis in cooperation with CEBioS, the University of Antwerp and IMER where the economic value of the natural resources of Halong bay will be assessed by means of questionnaires.

Status of activities in Vietnam

IR 3 Linking sediment and particle tracking model with ecosystem health

3.1 sampling of organisms attached with sediments

IMER organized a sampling campaign in April 2016.

IR 5 IMER staff is trained in sediment model applications

5.1 Hydrodynamic model reassessment

A full 3-D hydrodynamic set-up is finalized.

5.2 sediment model

Sediment model is finalized during the internship of Vu Duy Vinh in 2017. It was discussed to change the focus to coral bleaching and a plan of action is discussed.

IR 6 Participation to external RBINS calls

Done in 2016 and added economical modelling to the list of available expertises for IMER.

IR 7 Awareness about implications of model for conservation of biodiversity and sustainable use

7.2 several IMER seminars

Done in 2016



2 week Workshop in Peru (06/03/2017 till 14/03/2017)

7 students who are part of a study group GIHECOM and who want to be oceanographers, attended the workshop. It was a great opportunity to introduce young motivated people into oceanography

- Edward Gomez Laiza, MSc student geophysics, applies COHERENS on the bay of Secchura (phosphate polluted bay), he uses it for his thesis and asks for help in the set up.
- Lio Tahua Ba student geophysics entering his last year. If they want to continue to the master programme students should make a thesis. He has no previous experience with COHERENS. He comes out of interest and is looking for a project. His hobbies are playing video games and computers in general. Because of his it-savviness he was of great value for the group and the project.
- Pedro Isaac Diaz Ramirez, finished his geophysics Bachelor, he now is looking to write his thesis. He applied COHERENS to Chimbote bay (eutrophication due to waste of fish flower factories). He is interested in doing a temperature analysis of the bay.
- Cesar Riofrio finished his Bachelor a few years ago, he is following the course out of interest and is looking for biological applications, for example langoustines in Paracas.
- Alexander, first year of physics bachelor (he did not yet choose a specialization). He is following the course out of interest and to see what the options are. He has no modelling experience and never has used COHERENS before.

- Sebastian Cisneros finished his Bachelor in geophysics and is writing his thesis for admission into the master programme (though he is looking for an MSc project abroad, preferably Vancouver, Canada). He went to Belgium for a month last year and is a very promising and mature student. He is still working on Callao (off shore waste water pipe) and wants to analyse and validate his model with several stations.
- 7. Tony just started his bachelor in physics and wants to become an oceanographer like his older brother. He has no experience in hydrodynamic modelling or with COHERENS.

Closure workshop in Peru (06/03/2017 till 14/03/2017)

The poster features the logos of CEBioS and the Instituto del Mar del Perú. The title is 'Uso del Modelo COHERENS como herramienta de Gestión Integrada en la solución de problemas ambientales en ecosistemas costeros'. The dates are 'Fecha: Del 15 al 17 de Marzo'. The location is 'Lugar: Auditorio de Post-Grado de la facultad de Ciencias Físicas de la UNMSM'. The organizers listed are the Instituto del Mar del Perú, the Royal Belgian Institute of Natural Sciences, and the Facultad de Ciencias Físicas de la UNMSM. The objective is to analyze, disseminate, propose, and inform about the use of mathematical modeling and computational tools in coastal ecosystem management. Participating institutions include the Ministry of Environment, the Belgian Embassy, various NGOs, regional and local governments, the Instituto del Mar del Perú, universities, and companies. A small map shows a simulation of surface current velocity fields in the Callao Bay area.

The workshop was well attended with a good mixture of students, professors, and policy makers at country level at local level, NGO's and from the fisheries industry. For each bay that was studied a representative was present.

Fig. 1: announcement of the workshop



Fig. 25. Final committee of the workshop.

The project ended well with two final scriptions (one Master and one Bachelor) as outcome, a well-received final workshop and some nice after outcomes: the GIHECOM group that was created by university students on the occasion of the CEBioS marine modelling project keeps existing and has presented their results at an international congress in Chile (with 2 oral presentations by Pedro Ramirez and Sebastian Cisneros and one poster by César Riofrio): XXXVII Congreso de Ciencias del Mar (22 al 26 de mayo) “Biodiversidad y Conservación de Nuestro Océano y sus Recursos”. Abstracts can be found by following this link: https://congresocienciasdelmar.cl/wp-content/uploads/2016/12/LIBRO-DE-RESUMENES-XXXVII-CCM_-2017.pdf

They keep in touch with the fishery industries and have organized a meeting similar to our closure workshop. They installed a close contact with the biology department of the university. Sebastian Cisneros was hired by RBINS on external funding for a two months internship (February till March 2018) to work on a project that studies larval dispersal between Antarctica and the Latin America. The CEBioS project is through our contact with the Belgian embassy disseminated in Peru. Our students are invited and participate in events organized by the Belgian embassy in Peru.

Expected result 1.3. Monitoring data is fed into national indicator processes

Description

Pilot projects enable biodiversity-monitoring data to be fed into national indicator processes. The goal is, in partner countries, to link scientific teams who monitor biodiversity with partner administrations (e.g. CBD or CHM NFPs who have already collaborated with CEBioS under other SOs) who are involved in biodiversity policy. Under this approach, data can become useful for, and be used in, current indicator processes on the status of biodiversity. This will enable science-based communication in various national and international bodies and documents and reinforces the link between the academic and policy scenes active in the field of biodiversity in the respective partner countries. Sound baselines and measurements of biodiversity are needed to be able to provide meaningful trends. To enable our partners to contribute to these indicator processes, training and dedicated follow-up will be required to ensure the quality of the produced data.

These capacity building activities also directly contribute to fulfil specific objective 5, on measurement, verifying and reporting processes (MRV).

Log frame (partim)

Expected Results	Output indicators	Report 2017
<p>1.3 Monitoring data is fed into national indicator processes</p>	<p>In at least 4 partner countries of the Belgian development cooperation data from monitoring activities are integrated in at least one of the indicators for the follow up of the respective national strategy.</p>	<p>In 2017, 11 projects were implemented in D.R.Congo, to support the contribution of the regional level to national reporting processes. These projects were gathered in a workshop in October and produced three thematic policy briefs and a scientific paper on biodiversity indicators for 3 focal themes (fisheries, charcoal, bushmeat).</p>
Activities	Report 2017	
<p>1.3.1.Launch call for project on Aichi target indicators</p>	<p>Done, selected projects finished (2015 and 2016) or ongoing (2018).</p>	

Table 10: log frame (partim) for SO1, 1.3.

Activities

By 2016 at the latest, all parties to the Convention on Biological Diversity will be required to present a National Biodiversity Strategy and Action Plan (NBSAP) in line with the Strategic Plan for Biodiversity 2011-2020 and including specified national Aichi targets with relevant indicators. When national targets and indicators are determined by partner countries, collaboration with academic partners and partner authorities will be established in order to draw on our expertise in collecting data to feed the indicator processes. In addition, research projects carried out by students or early-career scientists associated with partner institutions, which are promoting the collection of data that are relevant for achieving Aichi targets, are being supported. Results will be valorised through their validation and publication in renowned science journals as well as through the

national strategy monitoring systems that will be promoted under specific objective (SO2)2: enhancement of the information base on biodiversity.

We launch each year a call for projects that work on gathering indicator data for Aichi objectives related to habitat/ecosystem monitoring, species data and have a relation with poverty eradication. To promote national and regional South-South collaboration, we alternate between calls targeting (1) French-speaking African countries (2015), (2) the D.R. Congo (in view of our structural partnerships with several institutions throughout the country, combined with the existence of provincial antennas for biodiversity) (2016) and (3) English-speaking African countries (2018). See SO5 for more information.

Expected result 1.4. Scientific outputs are made accessible to users

Description

Tools will be produced and contribution will be made to processes that support research and its dissemination (publications, websites, end-user meetings, participation in communities of practice...).

The relevance of all these scientific activities for development is to be ensured by prioritizing the acquisition of knowledge and the establishment of projects in sectors that contribute to development policies, such as sustainable forest management, sustainable use of natural resources (including for agriculture and energy), sustainable water management, sustainable coastal and marine management (including use of natural resources from the marine environment), issues linked to health policy, management of invasive alien species and pest species, biodiversity conservation, ecotourism and trade. At this stage, we prefer not to provide a restricted list, as to ensure a maximal adequacy with the national priorities of our partners.

Log frame (partim)

Expected Results	Output Indicator	Report 2017
<p>1.4 Scientific outputs are made accessible to users</p>	<ul style="list-style-type: none"> • At least 5 Abc Taxa manuals have been produced during the 5-year period dissemination per volume • Supporting/disseminating materials formerly produced • 4 lexicons, • Syllabuses produced and/or upgraded, • Participation by staff members in 5 events relevant to taxonomic popularisation tools development/capacity building. • Feedback on the use of courses available. • Results of at least 5 projects and public awareness activities under SO1-1 and SO1-2 are published on the Internet on www.taxonomy.be or a national CHM website if available. 	<p>Guest lecture by L. Janssens de Bisthoven at the U Hasselt</p> <p>Guest lecture by ML Susini Ondafe about taxonomic research at UGent.</p> <p>Lexicon in Benin: finalising, publication, dissemination AbcTaxa: publication in 2017 about mushrooms in Haut Katanga (RDC)</p> <p>Posters at conferences</p> <p>Policy briefs for MRV Book on archives of Virunga NP 2 Brochures of the CSB AbcTaxa flyer</p>
<p>Activities</p>		<p>Report 2017</p>
<p>1.4.1. Taxonomic scientific tools production and dissemination of AbcTaxa manuals</p>		<p>See above</p>
<p>1.4.2. Popularization tools-production of lexicons-production/upgrade of syllabi-dissemination of tools (other than Abc taxa)-participation in international congresses on taxonomy and/or ICT for development and training-follow-up on feedback of use of courses-archiving output on GTI and CHM websites</p>		

Table 11: log frame (partim) for SO1,

Activity 1.4.1. Taxonomic scientific tools

Abc Taxa: a series of manuals for taxonomic capacity building

For 2017, we provided funding for the publication and distribution of one volume on mushrooms of Haut Katanga (RDC) and for the distribution of the already published manuals. We also published the 4th lexicon of the lexica series, on the Penjari National park of Benin, co-authored with the UAC (Benin).

We also concluded an internal agreement with the Publication Service Unit (PSU), a unit pooled between RMCA and RBINS responsible for the edition and production of a number of journals. The PSU is now responsible for the production and editing of the AbcTaxa and the lexica.

Activity 1.4.2. Popularization tools

Over the years, the collaboration with partner institutions for the monitoring of habitats has led to the production of popularization tools of high relevance for the management of ecosystems, especially protected areas. The development of such tools will continue to be encouraged and supported in the following years. Drawing on the successful experience of the « Habitats de la Réserve et Domaine de chasse de Bombo-Lumene - Lexique Kiteke des plantes observées dans ces milieux », it is planned to produce and publish about 4 additional lexicons: one in R.D. Congo in partnership with ICCN on the Itombwe, two in Burundi in partnership with OBPE

(one on Kibira is published in 2017) and one in Benin in partnership with UAC (published in 2017-2018). The production of syllabuses is also foreseen: one in R.D. Congo (ICCN), two in Burundi (INECN) and two in Benin (UAC).

Taxonomic popularization tools, policy briefs and video recordings resulting from scientific work supported by CEBioS are also expected to be developed as the result of projects supported under expected result SO1.1.

Indeed, as applicants will be required to demonstrate their direct or indirect contribution to the conservation of biodiversity and/or ecosystem services and to the fight against poverty in their country, one means of meeting these criteria is the development of tools destined for a wider audience (including competent authorities, local populations, etc.). In order to continuously update internal capacities in dissemination technologies and methods, participation to international workshops or conferences will be necessary. One event per year will be selected for its relevance and attended to by a staff member (see table milestones).

SO 2
THE RBINS PLAYS A LEADING ROLE IN
THE ENHANCEMENT OF THE
INFORMATION BASE ON
BIODIVERSITY, ON ITS LINKAGES WITH
ECOSYSTEM SERVICES AND POVERTY
REDUCTION AND ON ASSOCIATED
GOVERNANCE PROCESSES



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Expected results

- 2.1. Expertise in information management is built.**
- 2.2. Information flows are improved.**
- 2.3. Information is used to advise governance processes.**

Expected result 2.1. Expertise in information management is built

Log frame (partim)

Expected results (ER)	Output indicators	Report 2017
2.1. Expertise in information management is built	<ul style="list-style-type: none"> • 10 national training workshops, • 120 persons trained, • Follow-up training has been organised in at least 8 partner countries. • 5 countries participate in the information management/ CHM network through South-South Cooperation (SSC) with one of our partner countries. • 70 % of the partner CHM sites have 20 pages added or updated /year. • Tool to follow-up the implementation of the national strategy is actively used in at least 5 countries 	<p>3 national training workshops > 72 persons trained Follow-up training in 3 partner countries 4 countries participate in SSC 80% of partner countries have added >20 pages in 2017 Tool is actively used in 5 partner countries. Installation of solar panels for continuous supply of renewable energy for CHM activities and other ICT activities. CEBioS in BIOCAP of CBD: https://www.cbd.int/doc/newsletters/biocap/biocap-02-en.pdf</p>
Activities	Report 2017	
2.1.1. two national training workshops per year 2.1.2. 1-2 follow-up trainings per year 2.1.3. one south south collaboration/yr initiated 2.1.4. Promotion of tool in at least 1 country /year	2.1.1.: 3 national training workshops (D.R. Congo, Gabon, Jordan/Palestine State) 2.1.2.: 3 follow-up trainings (Togo, Gabon, Burundi) 2.1.3.: 4 south/south collaboration projects (Benin/Togo, Morocco/Gabon, Morocco/Jordan, Morocco/Chad) 2.1.4.: promotion of tool in Burundi and during regional meetings with partner countries.	

Table 12: log frame (partim) for SO2, 2.1.

Activities

The 2017 programme has continued providing several training opportunities at national level, as well as its recurrent support to CHM. A regional workshop has been organised for Francophone partner countries to familiarize them with the Bioland tool. We initiated a multi-annual work programme, particularly towards the consolidation of our contribution to governance processes.

To build expertise in information management we are offering several types of capacity building activities related to the CHM to our partner countries. Depending on their existing capacity the partners will have to express their interest to participate in or organise one of the capacity building activities in their country.

Most of the official partner countries have already received training in the use of the PTK, be it training of the national focal point or a national training and follow up workshops.

We received a request from IGAD, a regional organisation for the Horn of Africa, to participate in a training workshop in Addis Abeba. 20 participants from 10 countries were given a first introduction to the CHM and training on the Bioland tool.

We organised training for people active in Belgium and the Netherlands to get a first introduction to the new tool Bioland

that will replace the PTK in 2018. 4 people participated in this training.

Through the CHM yearly call Morocco proposed a project for a national training in Gabon. Due to civil strife in the weeks following their national elections this training was cancelled and moved to 2017. A national training in Guinea Conakry couldn't take place as the official CHM focal point died unexpectedly in the first half of 2016 and was replaced towards the end of 2017. As a follow up to the national training in D.R. Congo in September 2015 a second national training was organised at the CSB in Kisangani in 2017. Jordan invited us again to give a national training in Jordan and we invited people of the Palestine State to participate as well.

In 2017 we organised training for managers from DR Congo, Jordan and the Palestine State in Belgium as we understood that they weren't enough trained to be able to run their CHM independently.

In 2017 we received the request from Togo for follow-up training after the national training in 2015. We decided that it would more cost-effective to use a South-South collaboration as the national CHM of Benin is more than apt to give a training in Togo. Due to complications with the bank transfer as well as the long period to get a correct budget and the contract signed, this follow up training took place in January 2017.

Table 13: training courses organised with 100 % CEBioS funds.

Dates	Type of activity	Place	Country	No part	Lang.	Trainer
11.04	Follow-up course	training Lomé	Togo	15	fr	J-D Akpona
13-15.03	National course	training Libreville	Gabon	15	fr	M-L Susini, M. Madbouhi
24-29.09	National course	training Kisangani	DR Congo	>40	Fr	H. de Koeijer
9-10.10	National course	training Bujumbura	Burundi	12	Fr	H. de Koeijer

Table 14: training courses organised through South-South cooperation or GEF funding in 2017.

Dates	Type of activity	Place	Country	No part	Language	Funding	Trainer
7-14.04	Regional training workshop IGAD	Ethiopia	Horn of Africa	20	EN	IGAD	H. de Koeijer
06-08.09	Training for CHM managers	Brussels	Belgium	6	Fr/EN	CEBIOS/GIZ	H. de Koeijer and H. keunen
25-28.07	Regional Training Course CHM (Jordan and Palestine State)	Amman	Jordan	20	EN	GIZ and CEBioS	H. de Koeijer and M. Madbouh

The results of the capacity building efforts can be seen in the development of the number of visitors to the different national CHMs as well as the number of pages added to the site. The countries that have received capacity building in 2016 – 2017 show a substantial increase in the number of visitors. The number of pages added isn't available this year as with the coming of Bioland the support to have this kind of statistics is broken and doesn't give reliable Figures anymore.



Fig. 26. Participants in the national training in Burundi, October 2017 (by Han de Koeijer), participants at the Jordan/Palestine State CHM training, July 2017.

Expected result 2.2. Information flows are improved

Log frame (partim)

Expected results (ER)	Output indicators	Report 2017
<p>2.2. Information flows are improved</p>	<ul style="list-style-type: none"> • CHM websites running and regularly updated: 50% of websites updated Alternative indicator: information added on the CHM partner websites during 2014-2018 has increased with 20 % compared to the period 2008-2012. • Number of information meetings with different stakeholders in partner countries • OBPE strengthened: CHM website updated on a regular base (pages added/year and number of visitors per year compared to baseline of 2012), Library documented and used (number of books added in the library database, number of visitors to the library), 5+ scientific bulletins published 	<p>All websites have been updated with new information. Through the different projects meetings were held in country with different stakeholders. OBPE: Website has been updated with more than 400 pages. Due to civil unrest and the person responsible for the library having taken refugee status in Belgium no information on the library is available. The second scientific bulletin of the OBPE has not been published due to health problems of the main editor.</p>
Activities	Report 2017	
2.2.1. one call per year for CHM consolidation	The call was launched in 2017. 11 projects were received. 4 countries have started to work on 5 projects for CHM consolidation. 3 projects from 2014, 2015 and 2016 are still running or closing in 2018	

Table 15: log frame (partim) for SO2, .2.2.

Activities

This activity offers support to raise awareness of the existence of the national CHM, the importance of information sharing, to build networks of users, and stimulate the use of the CHM through various means such as helping installing appropriate equipment, providing opportunities to organise national 'data providing' meetings, hosting of websites on the RBINS server, providing a helpdesk for partners who encounter difficulties in using the 'Portal Toolkit' web content management tool, etc. Projects are selected on a yearly basis, through calls for project proposals. This activity offers support to raise awareness of the existence of the national CHM, the importance of information sharing, to build networks of users, and stimulate the use of the CHM through various means such as helping installing appropriate equipment, providing opportunities to organise national 'data providing' meetings, hosting of websites on the RBINS server, providing a helpdesk for partners who encounter difficulties in using the 'Portal Toolkit' web content management tool, etc. Projects are selected on a yearly basis, through calls for project proposals.

Introduction

In 2017, the tenth call for proposals was launched for the reinforcement of CHM websites. Five of the eleven projects submitted have been selected: Burundi, D.R. Congo, Guinea, Morocco/Chad, Niger and Uganda. This year for the second time we have invited a person from outside CEBioS, Olivier de Munck, CHM officer at the CBD, to take part in the jury. His choice in projects and his reasoning were a refreshing addition for the other jury members. The project with Guinea was accepted however they never improved the project proposal as was asked for. During email exchange with the new CHM focal point of Guinea he informed us that the person responsible for the project proposal died

and his successor would continue to work on the project. They were informed that they would have to re-submit the project under the 2018 call as too little follow up too late. Some projects that started under the 2014-2015, 2016 calls were still running in 2017. Due to civil unrest in Burkina Faso an extension was granted first till August 2015, it was extended for the second time till 3 months after the inauguration of the new president. However due to problems with the formation of the new Government it was extended again till February 2017. Table 16 lists the projects under the 2014, 2015 2016 and 2017 calls running in 2017.

Table 16: the projects selected in the framework of the reinforcement projects 2014-2016.

TITLE OF PROJECT	DATES	PARTNERS
Projects signed in 2017		
Renforcement des capacités du CHM-Burundais	Project part of the institutional capacity building activities for the OBPE	Office Burundais pour la Protection de l'Environnement, Burundi
Création d'une section 'aire protégée' sur le site CHM-Niger: collecte, mise en ligne des données et informations	Project signed 4 th July 2017end foreseen 31 July 2018	Secrétariat exécutif du Conseil national de l'Environnement pour un Développement Durable (SE/CNEDD), Niger
Coopération Sud-Sud Maroc/Tchad pour une formation CHM	Project signed 29 September 2017end foreseen 28 February 2018	DCFAP /Direction de la Conservation de la Faune et des Aires Protégées, Chad
Strengthening the Uganda National Clearing House Mechanism	Project signed 04 December 2017, end foreseen 30 September 2018	National Environment Management Authority (NEMA) Uganda
Réactivation de l'intranet au Centre de Surveillance de la Biodiversité de l'Université de Kisangani	Project signed 06 July 2017end foreseen 28 December 2017	Centre de Surveillance de la biodiversité (CSB), DR Congo
Projects signed in 2016, end foreseen in 2018		
Amélioration du contenu et de l'audience du centre d'échange d'informations du Bénin	Project signed on 16 November 2016, end foreseen 31 November 2018	Direction Générale des Eaux, Forêts et Chasse (DGEFC), Benin
RCEs Stakeholder Awareness and Sensitization on Biodiversity CHM Website	Project signed on 08 March 2017, end foreseen 28 February 2018	Nature Kenya and National Environment Management Authority (NEMA), Kenya
Projects started in 2014, 2015, 2016 and finished in 2017		
National training for the CHM in Gabon	Project signed on 25 August 2016, ended April 2017	Direction General de l'Environnement et la protection de la Nature (DGEPN), Gabon and Ministère de l'Environnement, Morocco
Appui à la numérisation des documents pertinents relatifs à la biodiversité présents au CSB	Project signed on 08 November 2016, ended 31 July 2017	Centre de Surveillance de de la Biodiversité (CSB), D.R. Congo
Promotion and operationalization of Tanzania national chm	Signed fourteenth of July 2015, end foreseen 30 th of March 2016, (reports received in September, closed in December 2017)	Vice President Office, Dar Es Salaam, Tanzania

Mise en œuvre du volet CHM du Programme de coopération scientifique UAC – RBINS: Phase 1	Project signed on 18 August 2014, end foreseen 31 November 2016 (ended in 31 November 2017)	Direction Générale des Forêts et des Ressources Naturelles (DGFRN), Benin
Project 2014 started in 2014 and still running in 2017		
Amélioration de la connaissance et de l'engagement des acteurs nationaux et du contenu du centre d'échange d'informations (CHM) du Burkina-Faso	Project signed on 9 September 2014, end foreseen 28 February 2015 (Letter sent in October 2017 to Director and CBD focal point)	Secrétaire Permanent – Conservation de la Nature et le Développement durable (SP/CONEDD), Burkina Faso

Details per country



The project has the following goals:

- Consolidation of the functioning of the website for the CHM of Burundi;
- Strengthening of the collecting and posting information systems on the web site of the CHM-Burundi;
- Strengthening systems of collecting, sharing and diffusion, and exploitation of information through non-web based means;
- Improving the use of the library of the INECN through an awareness campaign.

The project report 2017 is expected towards end of February 2018. This is due to health problems of the main responsible person.

Results:

The results of the long-term reinforcement activities are more difficult to measure. However one can note several milestones: more than 400 additions on the CHM website; the CHM website attracted 19409 visitors over the reporting phase, with 59554 pages consulted. This is a 44 % increase of the number of visitors and 25 % decrease in page views compared to the 2016 reporting phase. The installation of the solar panels was finalised in 2017, the training for the maintenance should still be given, there for the next part of the finances hasn't been transferred yet.

NIGER

The project has the following goals.

Objectif global :

L'objectif global du projet est de contribuer à la conservation et à la gestion durable des Aires protégées au Niger.

Objectifs spécifiques

De manière plus spécifique le projet vise à :

- Informer, sensibiliser et éduquer le grand public sur l'importance des Aires protégées à travers le centre d'échange d'information sur la Diversité Biologique ;
- Améliorer la visibilité du CHM

Due to a wrong bank account number the money got back 2 times. It was transferred again in the beginning of 2018

MOROCCO-CHAD

This is a South-South collaboration project with the aim to organise a national training workshop to train national contributors. The training was supposed to take place in 2017, however due to change of the CBD/CHM focal point it had to be postponed till 2018.

UGANDA

This project will assist in strengthening the collaboration among the partner institution providing biodiversity information to national CHM, establish information flow mechanism to and from the stakeholders, and determine special needs for stakeholders who are not able to use electronic information such as indigenous peoples and local communities

Specific Objectives

1. Integration of Geo-spatial biodiversity information on the national CHM
2. Strengthen the Uganda National CHM
3. Establish a committee for Database managers working on biodiversity information
4. Enhance collaboration amongst institutions and their personnel

As a new partner country it took some time to get the contract correct and signed. In December 2017 the money was finally transferred to Uganda and activities will start in 2018.

BENIN

The project has the following goals.

Objectif global

L'objectif global de ce projet est d'améliorer l'engagement des acteurs et décideurs pour le centre d'échange d'informations du Bénin afin de permettre sa mise en œuvre efficace pour l'atteinte des objectifs de la Stratégie et Plan d'Action National pour la Biodiversité (SPANB) 2011-2020

This is a three-year project that started in 2016 with the end foreseen towards the end of May 2018.

MOROCCO-GABON

This is a South-South collaboration project with the aim to organise a national training workshop to train national contributors. The training was supposed to take place in 2016, however due to civil strife after the elections it had to be postponed till March 2017.

Results

The training took place from 6 to 10 March 2017. 2 trainers, M-L Susini Ondafe and Mostafa Madbouhi from Morocco facilitated the training, thanks to the help of the CHM national focal point, Chimène Michelle Milendji. A total of 15 new users, coming from Ministries and Universities, were trained in the use of the Portal ToolKit (PTK) in order to contribute to the national CHM website of Gabon (<http://ga.chm-cbd.net/>). For the last 2 days of the training, managers were trained on the administration of the PTK. A follow-up training is foreseen before the summer so that contributors can give their feedback and explain where they encountered problems when adding data to the national CHM website.



Fig. 27. Participants to the national CHM training of Gabon.



Réactivation de l'intranet au Centre de Surveillance de la Biodiversité de l'Université de Kisangani

This project aims at increasing teaching and research quality and reinforce the CSB as distributor of information on biodiversity. It does so by taking on the further digitisation of physical documents present at the CSB and at the campus of the Faculty of Sciences of UNIKIS, while an archiving system for the numerical documentation is set up and the access to this electronic library is improved (via the intranet as well as via Internet). Due to a number of technical problems which cannot be easily resolved without extra funding and due to a long interruption (3 months) of the Internet connection, the project has not reached all its objectives completely. The technical side (moving of the already existing electronic library from the REFORCO-servers to the CSB servers) has been covered, digitation of documents has been ensured by the installation of a sheet-feeder scanner and introduction sessions to the e-library have been held to make staff on campus aware of its existence. For the time being the e-library is only accessible by computers connected to the network of the CSB. In its library a small number of older computers is installed to ensure access for non-CSB-staff. However these are old machines, which can no longer support newer versions of the Office or Open Office suites. The installation of proper search software for the e-library has not yet been completed.

Appui à la numérisation des documents pertinents relatifs à la biodiversité présents au CSB

With a new sheet-feeder scanner installed by the above mentioned project for the reactivation of the intranet, a substantial number of 'travail de fin d'étude', 'mémoires de Masters (D.E.S.), PhD theses and field reports have been dismantled, scanned, reassembled and posted to the DRC's CHM website. As a side activity to this project and in order to create some more logic and order on this website, the site manager of the national Focal Point to the CBD as well as the site manager of the CSB (secondary CHM for the country) received special training in Brussels during one week in September.

KENYA

This project has the following objectives:

- Organise and hold CHM website awareness stakeholder meetings with the 4 RCEs: Constitute a 12 member taskforce at NEMA in Nairobi and hold 5 meetings.
- Members draw from education and research departments: Hold CHM awareness stakeholder 4workshops in the 4 RCEs
- To develop and disseminate CHM awareness materials brochures: Develop colour brochures
- Develop a biodiversity dataset questionnaire and circulate
 - Meetings to develop a biodiversity dataset questionnaire content and circulate
 - Data entry from the questionnaires

Results

Due to problems to transfer the money to the National Environment Management Agency (NEMA), it took some time to find a solution. The contract had to be rewritten and now Nature Kenya is the principal contractor while NEMA does most of the work. The contract was only signed in March 2017 with the activities starting in April 2017. The end is now fore seen towards March 2018.

TANZANIA

General Objective

Operationalize CHM with up to date biodiversity information accessible to the general public.

Specific Objectives

- To popularize the National CHM.

- To have relevant biodiversity information/publications accessible on the CHM website

Results

Due to problems with getting the financial reports for the regional workshop as well as the national training it was decided that the project finances wouldn't be transferred till these financial reports were approved. The project therefore started only in December 2015. We received the financial and narrative reports towards September 2017. Several meetings were held with different stakeholders in 3 regions. It however didn't result in many more additions to the national CHM due to problems with changing focal points.

BURKINA FASO

The general objective of the project is « to improve the knowledge and the engagement of national stakeholder as well as the content of the CHM of Burkina Faso. »

The **objectives** are:

- To inform and raise awareness of the people that are in charge of information management at the sectoral Ministries and other stakeholders, like professional networks and associations, on the importance of the CHM and their implication in its functioning.
- Collect and validate data in the section that will receive special attention during the project.
- Elaborate a strategy for the CHM of Burkina Faso with the aim to revamp it.

The end of the activities of the project was foreseen in February 2015. Due to civil unrest the implementation of the project has encountered some delays. A project extension has been asked for by the Government of Burkina Faso. A first extension has been granted however due to the new director not able to release the funds a second extension has been granted till the new Government is in place (2016) and the different Ministries are functioning properly again. An interim report is available however not yet available on the national CHM of Burkina Faso. The report mentions the difficulties encountered when trying to involve other stakeholders to release information about their work on biodiversity to the national CHM. There are still two activities that haven't been finalised due to problems releasing the funds from the budget of the SP/CONEDD. In November 2016 the responsible person informed us that he isn't getting any support from his

organisation and has taken the position that he will stay put and continue to try to resolve the problem. A letter was sent to the Director in October 2017 to un-block the situation. She replied that they would finalise the last activities before February 2018.

Web statistics

Like each year, web statistics are provided for a number of our CHM partner countries (see Table 17). They show trends and enable to reflect on the evolution of the websites. As we are starting a reporting under a new five-year programme we have decided to use the statistics for 2013 in order to have a baseline. This will assist us in comparing the results of all our activities over the duration of the programme. We have also added the statistics of Cameroon and Madagascar, as they are not eligible any longer after 2014 to be able to compare the development of non-partner countries with those of partner countries.

For this reporting period, there are two interpretations to be made:

- The statistics on pages added is flawed in 2017 we found out when comparing the data of pages added during 2017 for DR Congo. We knew that more than 300 pages had been added through a CHM project, however they did not show up in the web overview. We checked this also with some other countries where we encountered a similar problem. We contacted the developers however with the imminent move to the new Bioland tool, no problem solving was quickly available.
- Quite some countries have an increase of more than 30 % of visitors. Some of them are countries that had CHM projects, were revamped or had other major activities in the country.

Table 17: web statistics on visitors for a selected number of CHM websites.

	2016			2017			Percentage of change	
	Visits	Pages visited	Pages added	Visits	Pages	Pages added	Visits	Pages
Burkina Faso	2732	4529	1	1379	3241	6	-98.11	-39.74
Burundi	10783	73943	>400	19409	59554	>400	44.44	-24.16
Benin	9766	27429	15	12286	30504	14	20.51	10.08
RD Congo	9567	26631	> 200	13938	39214	>300	31.36	32.09
Côte d'Ivoire	14729	41224	78	15183	31277	28	2.99	-31.80

Madagascar	20548	72423	>150	30375	82060	>100	32.35	11.74
Niger	13329	43879	15	11194	29731	17	-19.07	-47.59
Cameroun	0	0	23	8838	38211	26	100.00	100.00
Morocco	18108	70533	40	24087	67678	26	24.82	-4.22
Rwanda	1428	11446	19	1152	4210	0	-23.96	-171.88
Mali	3146	5681	0	1930	3656	0	-63.01	-55.39
Togo	2054	13753	45	2700	15597	22	23.93	11.82
Belgium	50527	90815	97	75814	111806	29	33.35	18.77

Expected result 2.3. Information is used to advise governance processes

Log frame (partim)

Expected results	Output indicators	Report 2017
2.3. Information is used to advise governance processes	<ul style="list-style-type: none"> • Level of activity of the network of partners: One regional workshop organised, • Number of participation in EU and global governing activities by Be and partner countries. • EU tool for the follow up of the reporting on the national strategies is used in at least 5 countries for the reporting to CBD, related biodiversity Conventions and agreements. • Number of information meetings with different stakeholders in partner countries. 	<p>Regional Workshop for Francophone countries</p> <p>EU Target Crosslinking tool used in 3 countries (Morocco, Benin, Burundi) See report</p>
Activities	Report 2017	
2.3.1. Networking and organising 1 meeting/ year of CHM NFP of partner countries and governance	Togo	
2.3.2. One Mission/yr international meeting	Several international meetings: SBSTTA 21, CHM-IAC, WG 8J, EU WPIEI meetings	

Table 18: log frame (partim) for SO2, 2.3.

Activities

In the work plan 2017 it is mentioned that under this point the activities will be: to organise at least one regional meeting to prepare partner countries for governing processes; enable Be and partner countries to participate in the governing processes; promote the usage of the EU target cross-linking tool in partner countries as well as information meetings in country to promote the use of available information.

Regional meetings

Regional Workshop for Francophone countries

The Francophone partner countries meeting to exchange experiences took place in Lomé, Togo from 1-3 February 2017. It was the occasion to discuss the results of COP13 concerning the CHM, information exchange, BioBridge initiative, Bioland tool and more. The participants received their first training in the new Bioland tool and were invited to give comments on the tool in a consolidated manner through Han de Koeijer. As a follow up of the meeting Burundi wrote a project proposal to the CBD for their transfer to the Bioland tool that was retained. During the mission in October 2017 Han de Koeijer gave a first national training to the tool.

The following international meetings were all back to back in December 2017 in Montreal, Canada at the offices of the CBD and the international Conference Center: **CHM-IAC meeting December 2017**

Han de Koeijer participated as chairperson in a two-day meeting of the CHM-IAC. He transmitted the results of the workshop with the partner countries

SBSTTA 21

Han de Koeijer participated in the SBSTTA meeting as Pilot for Belgium on national reporting and the TCT tool. On behalf of Belgium H. de Koeijer and M-L. Susini Ondafe were pilot or co-pilot during *SBSTTA-21* on agenda items: 4 Pilot: Sustainable wildlife management: Guidance for achieving a more sustainable bushmeat sector. Most of the Belgian propositions can be found in the final papers that came out of SBSTTA 21.

WG8J

Han de Koeijer participated in the WG8J on traditional knowledge as Belgium and EU pilot for repatriation of traditional knowledge and negotiated on behalf of the EU in plenary.

**SO 3.
THE RBINS CONTRIBUTES TO
AWARENESS RAISING AND
COMMUNICATION ON THE
IMPORTANCE OF BIODIVERSITY AND
ECOSYSTEM SERVICES FOR POVERTY
REDUCTION AND SUSTAINABLE
DEVELOPMENT, AND ON ASSOCIATED
GOVERNANCE PROCESSES.**



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Expected results

3.1. Baselines provide an insight on the level of awareness and/or commitment.

3.2. Awareness and commitment are raised.

3.3 Communication and awareness raising in Belgium

Expected result 3.1. Baselines provide an insight on the level of awareness and/or commitment

Log frame (partim)

Expected Results	Output Indicators	Report 2017
3.1 Baselines provide an insight on the level of awareness and/or commitment	Number of public awareness projects completed, At least 3-5 countries will reply to the special call for projects and develop indicators for public awareness.	1 completed in 2017/2018 2 countries applied to the call
	In 2018 and 2019 these countries and countries that did their baseline studies and indicators development in 2011-2012 will receive can submit projects for funding to redo the same studies as undertaken in the first years. This will facilitate them to study effects and change in conception of the Public awareness work done under SO3.2.	Not applicable yet
Activities		Report 2017
3.1.1. one call/year for awareness baseline projects in the South 3.1.2. The results should be used for the reporting towards the Aichi targets and the relevant indicators in the reporting tool that countries will use under SO2-1 and SO5.		DR Congo and Burundi applied to the call. Togo and DR Congo finalised their project under this call in the beginning of 2018

Table 19: log frame (partim) for SO3, 3.1.

NIGER-TOGO-D.R. CONGO

Activities

A call for project to the partner countries was launched in June 2016. In the call partner countries could choose between projects under SO3.1 or SO3.2. We made in June 2017 the selection of the different projects that would receive funding. 2 country had projects related to SO3.1 and were selected. Contracts with them were signed in 2017. The following projects were chosen under SO3.1:

Niger: Baseline study on the « perception de la biodiversité par les communautés locales à travers l'utilisation alimentaire et médicinales des espèces végétales » Due to problems with the bank transfer the project has not started yet.

Togo: Baseline study on indicators for public awareness, communication and engagement to measure the perception of the public toward biodiversity in Togo. Activities were finalised in 2017, the reports are foreseen in March 2018

D.R. Congo: An additional project was started with VVOB-DRC and the Ministry of Environment of the D.R. Congo in 2016. After the success of their project "Awareness raising on the role of sustainable agriculture for biodiversity in the technical agriculture teaching system" during the period 2014-2016, they asked for an extension of the project towards new provinces under SO3-2. Due to the eligibility criteria this couldn't be awarded until a baseline study would have been conducted. The project for the baseline study ended towards May 2017, however the final narrative report hasn't been accepted yet as the most important part of the study according to the project, wasn't included in the draft version. We are pressuring VVOB-Congo to get this in before making the final arrangements to close the project.

Expected result 3.2. Awareness and commitment are raised

Description

Based on the results of the target audiences and subjects for which public awareness needs to be raised as a result of SO3.1, the partner countries and local institutions and organisations through the CHM and CBD focal points can submit projects under a **call for proposals**.

Log frame (partim)

Expected Results	Output Indicators	Report 2017
3.2 Awareness and commitment are raised	Indicators on public awareness show a positive development between 2014 and 2018. PA Materials are developed and used in different countries.	Collection of data on going with : Benin: "Raising awareness of national stakeholders on the conservation of biodiversity in Benin" Burundi: "Towards an effective awareness raising in the light of the conservation of biodiversity" Guinea-Bissau: Raising awareness and environmental education of local development agents towards a sustainable management of biodiversity and natural resources in Guinea-Bissau New projects with: Benin (1), DR Congo (3), Niger (1) Sharing of experiences from the country projects during the regional Francophone meeting, .
Activities	Report 2017	
3.2.1. special awareness project calls in South organised	Done for the yearly calls as well as MRV call.	

Table 20: log frame (partim) for SO3, 3.2.

BENIN-BURUNDI-D.R. CONGO- TOGO-NIGER-GUINEE BISSAU

Table 21: overview of awareness projects.

Projects started in 2017 ending 2018

Organisation	Pays	Title of project
CEIBA	Benin	Sensibilisation à la lutte contre la déforestation et la pollution autour du parc transfrontalier du W (Nord-Est) République du Bénin
ASBL Mikembo	RD Congo	Sensibilisation et éducation sur la protection de la forêt claire de type Miombo à travers la distribution de bandes dessinées intitulées : « Miombo, richesse méconnue », et d'un guide d'éducation environnemental
lday	RDC	Sensibiliser les jeunes à la sauvegarde de la biodiversité et mener des actions dans une perspective de développement durable dans 4 écoles secondaires en RDC

Projects started before 2017 continuing in 2018

SE/CNEDD	Niger	Projet de Sensibilisation des Détenteurs des Connaissances Traditionnelles du Niger dans le cadre de la mise en œuvre du protocole de Nagoya sur l'Accès aux ressources génétiques et Partage des Avantages
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Project under institutional capacity building with target countries

OBPE	Burundi	Towards an effective awareness raising in the light of the conservation of biodiversity (2014-2018)
CSB	RD Congo	Participation à 4ième édition de la Semaine de la Sciences et des Technologies, Kinshasa 16,17 & 18 avril 2017 (2017)

Projects ended in 2017

CEIBA/DGEFC	Benin	Information et sensibilisation de la population sur les feux et les habitats du Parc National de la Pendjari (2016)
Nature tropicale	Benin	« Projet de sauvegarde communautaire des tortues marines de l'atlantique et de leurs habitats le long du littoral du Benin (2016)
CEIBA	Benin	Sensibilisation à la lutte contre la déforestation et la pollution autour du parc de la Pendjari (2014-2016)

IBAP	Guinea-Bissau	Sensibilisation et Education Environnementale des agents de développement local sur la gestion durable de la biodiversité et des ressources naturelles en Guinée-Bissau (reports 01/2018)
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Projects still not closed

SGECN	RDC	Sensibilisation sur les apports de l'agriculture durable à la biodiversité dans l'enseignement technique agricole (2014)
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Benin

The reports of the activities in Benin and some awareness raising materials are available under <http://bj.chm-cbd.net/cooperation/coop/cooperation-bilaterale/partenerariat-benin-belgique/cooperation-dgfrn-irscnb/>.

Guinea-Bissau

The draft narrative report was shown in 2018 and isn't yet available on the CHM. The financial report was transmitted during the national training in January 2018. The activities have been finished now we are still waiting for the official report.

DR Congo

Participation à 4ième édition de la Semaine de la Sciences et des Technologies, Kinshasa 16,17 & 18 avril 2017. A team of the CSB manned a booth and gave presentations at this event, which gathered over 8000 participants at a large exhibition area in Gombe, Kinshasa (see also pg 44).

SGECN

We received information that the reason for blocking the account where the funds had been since 2015 was considered not correct by the Police. We are now waiting for the authorities to decide what they will do, use the money for a CHM project in 2018 or send the money back in the beginning of 2018.

Call for disseminating the outputs of MRV projects

A call for awareness projects to disseminate the results and outputs of the MRV projects (SO5) was launched in November. Fifteen follow-up projects (4 from the 1st call -2015 and 11 from the 2nd call-2016) were selected and will be implemented until June 2018.

Table 22: MRV mini projects for sensibilisation.

Partners	Titles (in French) of the projects
Benin	
LABEF, UAC	Sensibilisation sur les indicateurs prioritaires mise en place pour le suivi de la biodiversité au Bénin
CERF	Sensibilisation sur les techniques de récolte et de conservation des plantes médicinales au Bénin
Burundi	
OBPE	Projet de conscientisation du public pour une prise de mesures stratégiques de réduction de perte des espèces et des habitats
RDCongo	
UOB	Sensibilisation du public, en particulier les pêcheurs sur la problématique des pratiques de pêche non durables au lac Kivu
CRH	Sensibilisation du public sur l'arrêt des menaces qui pèsent sur les crocodiles et les hippopotames de la plaine congolaise de la Ruzizi et du littoral du lac Tanganyika à Uvira
CSB	Sensibilisation pour la gestion durable des ménages et la ressource viande de brousse à Kisangani (R.D.Congo)
ICCN	La promotion des techniques durables et des moyens alternatifs d'exploitation de la forêt dans le territoire de Muanda et ses environs au Kongo Central
UNIKIN	La sensibilisation de la population de Kinshasa et ses environs sur la gestion des espèces végétales utilisées comme bois énergie
CSB	Sensibilisation sur l'exploitation et gestion des ressources halieutiques à Kisangani et ses environs en République Démocratique du Congo (R.D.C)
NODRI	Campagne de restitution des résultats des recherches MRV 2015-2016 et de sensibilisation sur la pêche responsable dans l'hinterland fluvial, marécageux et lacustre de Mbandaka-Bikoro
SCRID-AGRI	Sensibilisation sur les résultats de la recherche sur les espèces des poissons capturées dans le site de Tshala au Kasai oriental
CSB	Sensibilisation et partage d'informations sur l'exploitation et commercialisation de la faune sauvage en Province de la Tshopo (R.D.Congo)
CRH	Projet de sensibilisation de l'autorité locale, la communauté des pêcheurs et le public sur la cogestion de la pêche dans l'extrémité nord-ouest du lac Tanganyika en vue de l'aménagement de la pêche durable. (Cas de la ville d'Uvira)
UOM	Projet de sensibilisation des agents impliqués dans la filière bois énergie au Kasai Oriental, RD Congo – cas du bassin d'approvisionnement de la Lubi
UNIKIN	Vers la valorisation des connaissances traditionnelles des communautés locales et autochtones à Kinshasa

Expected result 3.3 Communication and awareness raising in Belgium

Description

The results of SO1 - SO3 can be used to raise awareness in Belgium and at international level to the problems that people face in development countries while using and conserving their biodiversity. This will of course depend on the results of the other objectives but it can also steer the call for proposals under SO3.2.

Log frame (partim)

Expected Results	Output Indicators	Report 2017
3.3 Communication and awareness is raised in Belgium	Number of people reached in Belgium through stands and events Number of related communication material (posters, brochures), Number of people attending awareness raising events or receiving material, etc.: 4-5 public awareness projects completed Number of events with new stand New stand Number of awareness presence in events Courses	Booth presented at 1 conference Archives NP Congo digitalized, mention in INTRODUCTION AND BRIEF HISTORY OF AFROTROPICAL DIPTEROLOGY 1, Ashley H. Kirk-Spriggs, Suricata 4 (2017) and mention in Parasitol Res (2017) 116:685-692 CEBioS and other RBINS BIOPOLS staff participated actively to Mission économique et commerciale de décideurs et d'opérateurs économiques congolais en Belgique, Tourisme et Conservation de la nature, Du 19 au 24 juin 2017 Lecture about biodiversity and CBD to ENGIE by Han de Koeijer
Activities	Report 2017	
Communication and awareness activities	-Booth presented at 1 conference -Creation of a new awareness game -Presentation of CEBioS activities at the European Conference of Tropical Ecology	

Table 23: log frame partim of SO3-3.3.

Booth on biodiversity and development

The booth created in 2015 presents information about the importance of biodiversity for developing countries, ecosystem services and CEBioS activities. It was only brought to the Tropical Ecology Conference in 2017 because of a lack of availability of staff during the weekends for other awareness events. A small game for the general public was created together with the museology department of RBINS about the importance of biodiversity in developing countries. It will be tested on our booth in 2018 in some fairs and events in Belgium.



Fig. 28. Model of the awareness game.

European Conference of Tropical Ecology

In February 2017, Guy-Crispin Gembu Tungaluna (CSB/UNIKIS), Hippolyte Nshibma (UNIKIS), Luc Janssens de Bisthoven, Han de Koeijer, Hilde Keunen, Anne Laudisoit, Marie-Lucie Susini Ondafe, Anne-Julie Rochette, Maarten Vanhove, and Erik Verheyen attended the European Conference of Tropical Ecology: (re)connecting tropical biodiversity in space and time (6-10 February, Brussels, <http://www.soctropecol-2017.eu/>). CEBioS representatives co-organised (and presented a total of 8 talks in) the sessions Back to the future: Recognising the value of baseline biodiversity data in a changing world and Tropical biodiversity for development: Concepts and methods for enhanced stakeholder-scientist interactions in tropical biodiversity conservation.



Fig. 29. CEBioS representation at the European Conference of Tropical Ecology.

Educaid.be

CEBioS officially joined the network Educaid.be in 2016. M-L Susini Ondafe is co-leader, with Maartje Houbrechts, of the project group dedicated to 'environment & education'.

In 2017, 4 meetings of the project group were organised. During 3 meetings, the members of the project group presented their activities in the field of environment. The last meeting was led by the NGO Louvain Coopération who presented its tool called « Outils d'Intégration Environnementale (OIE) ».

The year 2018 will be dedicated to the adaptation of the OIE tool to the education sector.

All relevant information can be found online here:

<https://www.educaid.be/fr/gp/environnement>.



Created by Gregor Cresnar
from Noun Project

**SO 4.
THE RBINS AND DGD UNIT D2.4
IMPROVE THE MAINSTREAMING OF
BIODIVERSITY AND ECOSYSTEM
SERVICES IN POLICY SECTORS THAT
HAVE A HIGH RELEVANCE FOR
DEVELOPMENT.**

Expected results

**4.1 Expertise of Belgian Development
Cooperation is built**

**4.2 Biodiversity and ecosystem
services are mainstreamed in
activities supported by the Belgian
Development Cooperation**

Expected result 4.1. Expertise of Belgian Development Cooperation is built

Description

For the past few years, we have been most active in the 'indirect cooperation' (some interpret it more as direct) arena of DGD, participating in a number of meetings and events as one of the scientific institutions involved in development cooperation. We have also been involved in supporting the multilateral processes linked to the CBD through our support to DGD and our participation in the national coordination process on biodiversity (through the Coordinating Committee on International Environmental Policy).

- For the year 2017, this activity continued to be carried out on a demand-driven basis. Our team strived to answer the various requests for scientific support that arrive at the RBINS.
- M-L Susini Ondafe participated in the 19th meeting of the DAC Network on Environment and Development Co-operation (ENVIRONET) in Paris, France (October 2017).

Generic interventions:

- Advice on the implementation of biodiversity-related activities in partner countries,
- Advice on proposed, submitted or running projects financed by DGD;
- Support for the follow-up of multilateral agreements;
- Support to the decision-making process of the ministerial office;
- Raising the profile of biodiversity during thematic meetings organised by DGD, participation in a meeting on sustainable agriculture and several meetings on KLIMOS;
- Attendance to meetings discussing biodiversity and development issues, presentation given during the EU Biodiversity and development cooperation expert group (see SO3);
- Identification of people, institutions and organisations working for biodiversity worldwide;
- Providing training on biodiversity issues, i.e. illustrating the importance of biodiversity for economic and social development and poverty reduction.

Log frame (partim)

Expected results	Output Indicators	Report 2017
4.1 Expertise of Belgian Development Cooperation is built	4 training workshops organised for the target groups decided by DGD, Capacities of DGD to include biodiversity in ex-ante SEA and EIA for cooperation projects are raised. Increase of biodiversity protection measures in the development cooperation	<p>Training was done in 2017 to DGD and Enabel about the Protocol of Nagoya.</p> <p>Luc JdB: lecture was given to diplomatic stagiaires about CBD and CEBioS</p> <p>Luc JdB: lecture on biodiversity governance to Bachelors at U Hasselt</p> <p>Luc JdB as 'discutant' at Panel session on fragile states, Akropolis seminar, Egmont, 20.4.2017</p>
Activities	Report 2017	
4.1.1. Training provided: (Based on request) around the theme "biodiversity, ecosystem services and development cooperation"	Done	

Table 24: log frame (partim) for SO4, 4.1.

The following articles concerning biodiversity, capacity building and mainstreaming were published:

- Vanhove M.P.M., Rochette A.-J. & Janssens de Bisthoven L., 2017. Joining science and policy in capacity development for monitoring progress towards the Aichi Biodiversity Targets in the global South. *Ecological Indicators* 73, 694-697. I.F. 2015: 3.190
- Hugé J., Rochette A.-J., Janssens de Bisthoven L., Dahdouh-Guebas F., Koedam N. & Vanhove M.P.M., 2017. Utilitarian framings of biodiversity shape environmental impact assessment in development cooperation. *Environmental Science & Policy* 75: 91-102 (I.F. 2016: 3.751);

The following abstracts and mentions on web pages appeared:

European Conference of Tropical Ecology: (re)connecting tropical biodiversity in space and time, February 6th-10th, Brussels, Belgium :

Oral presentations:

- de Koeijer H., Janssens de Bisthoven L., Vanhove M. & d'Huart J.-P. (2017) Digitalisation of historic information on ecology: case of national parks in DR Congo.
- Dudu A., Gembu Tungaluna G.-C., Masudi Muenye F., Verheyen E. Biodiversity research and monitoring related capacities in Kisangani (DRC).
- Gembu Tungaluna G.-C., Masudi Muenye F., Dudu A., Verheyen E., Laudisoit A. Towards less invasive methods to inventory and monitor wildlife in the Congo Basin.
- Hugé J., Rochette A.-J., Janssens de Bisthoven L., Koedam N., Dahdouh-Guebas F. & Vanhove M. (2017) Biodiversity baselines in environmental impact assessments.
- Janssens de Bisthoven L., Nzigidahera B., Vanhove M., de Koeijer H. & Ntakarutimana V. (2017) Transfer under Nagoya Protocol of traditional knowledge to scientists in Burundi, mediated by ministries of environment and health.
- Jorissen M., Pariselle A., Huyse T., Vreven E., Snoeks J., Volckaert F., Chocha Manda A., Kapepula Kasembele G., Artois T. & Vanhove M. (2017) Dusty baseline: the merit of museum collections in biological invasion studies.
- Rochette A.-J. & Vanhove M.P.M. (2017) Capacity building for the Monitoring, Reporting and Verification (MRV) of biodiversity and ecosystem services in Africa.
- Susini M-L. (2017) Using taxonomic research results to achieve a better conservation and management of biodiversity and ecosystem services.

Posters:

- Janssens de Bisthoven, L., Muhashy Habiyaremye, F., Susini, M-L., De Koeijer, H., Vanhove, M., Rochette, A.J., Verheyen, E., Laudisoit, A., 2016. Capacity development in D.R. Congo with a focus on biodiversity.
- Patricia Mergen, Hans Beeckman, Francesca Lanata, Steven Dessenin, Maarten Vanhove, Anne-Julie Rochette, Luc Janssens de Bisthoven, 2016. The role of Belgian and African Natural History Institutions in biodiversity-related capacity building in Africa
- Mande C., Gembu G.-C., Ewango C., Verheyen E., Laudisoit A. Bat ethical sampling in the Congo forest as a tool to monitor specific activity patterns and abundance.

Expected result 4.2. Biodiversity and ecosystem services are mainstreamed in activities supported by the Belgian Development Cooperation

Description

Most of the activities undertaken in our programme strive to build capacities within the scientific community of partner countries, acknowledging the critical role of scientific knowledge for the conservation and sustainable use of biodiversity.

Log frame (partim)

Expected results	Output Indicators	Report 2017
4.2 Biodiversity and ecosystem services are mainstreamed in activities supported by the Belgian	Number of consultancy requests from DGD staff Number of processes	See tables under SO4 and SO7 <ul style="list-style-type: none">• 2 mentions of CEBioS in “First Belgian National Voluntary Review on the Implementation of the 2030 Agenda United Nations High Level Political Forum New York, July 2017• Mention of CEBioS MRV projects in GEOBON Newsletter Jan. 2017 and mention of CEBioS EIA paper in News GEOBON June ‘17

Development Cooperation		<ul style="list-style-type: none"> • Mention of membership of CEBioS in UNDP BES-NET July 2017 Newsletter • Mention of CEBioS' article on capacity building in SDSN January 2017 Newsletter • Observing status of RBINS-CEBioS within FIABEL • MoU almost signed with ENABEL and WWF-BE
Activities	Report 2017	
4.2.1. At least 8 consultancy requests honoured on demand		See tables under SO4 and SO7
4.2.2. Follow-up of at least 5 processes (e.g. COP, SBSSTA, PIC...)		

Table 25: log frame (partim) for SO4., 4.2.

Activities

SBSTTA21

In 2017, M-L Susini Ondafe and Han de Koeijer participated in SBSTTA21 with the Belgian delegation. The meeting took place in Montreal, Canada from 11 to 14 December 2017. M-L Susini Ondafe was pilot on agenda item 4 entitled 'Sustainable wildlife management: Guidance for achieving a more sustainable bushmeat sector'. Most Belgium proposals on this agenda item have been approved without discussions. The main issue was to have the guidance being extracted from the recommendation as a separate Annex. It was a common issue raised by several parties during the 1st reading of the draft recommendation.

A Friends of the Chair group met twice to discuss the non-paper on this agenda item. Most discussions addressed the voluntary guidance considering the length of the text (more than 12 pages). Discussions went smoothly and Belgium agrees with most amendments made to the guidance text.

Belgium however regrets the deletion of reference made to the estimated yearly extraction rates of wild meat in para 31. of the Annex of document SBSTTA/21/L5, and to the fact that such level of consumption rates are unsustainable. We hope this reference can be reintroduced in further discussions before the adoption of the relevant COP decision.

Finally, document SBSTTA/21/L5 has a unique unresolved issue whether the Conference of the Parties should 'Welcome' or 'Take note' of the voluntary guidance (para 1, page 2). The initial proposal to 'Endorse it' was not accepted by most parties.

Outcome, see L document CBD/SBSTTA/21/L5:

<https://www.cbd.int/doc/c/6262/f851/73ef213377df108756ab2b6d/sbstta-21-l-05-en.docx>

IPBES

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is an independent intergovernmental body, established by member States in 2012. It provides policymakers with objective scientific assessments about the state of knowledge regarding the planet's biodiversity, ecosystems and the benefits they provide to people, as well as the tools and methods to protect and sustainably use these vital natural assets.

In late 2016, Marie-Lucie Susini Ondafe was selected by IPBES as a member of the task force on Capacity-building.

In 2017, M-L Susini Ondafe participated in 3 meetings linked to her role of member of the task force:

- 26-28 April: 5th meeting of the IPBES task force on Capacity-building, in Trondheim, **Norway** (funded by BELSPO). The aims of the meeting were to:
 - Develop IPBES capacity-building activities for implementation the rolling plan for the intersessional period 2017-2018
 - Consolidate contributions under the rolling plan for supporting implementation of the rolling plan and strengthen the collaboration with contributing organizations
- 12-14 June: 4th Pan-European IPBES Stakeholder Consultation (PESC4) in Vacratot, **Hungary** (funded by the Belgian Biodiversity Platform), where she was a facilitator
- 28-30 November: 1st WABES regional expert workshop in Abidjan, **Côte d'Ivoire** (funded by BELSPO) as a facilitator and member of the IPBES Capacity-building task force. WABES is an initiative funded by the German government to facilitate networking and capacity-building across West Africa to support the Work Programme of the IPBES, and in particular the assessments. It was interesting to see that several experts who participated in this meeting were GTI alumni.

M-L Susini Ondafe also regularly participated in online meetings of the task force. Finally, she commented on the Africa Regional Assessment and its Summary for Policy makers (SPM) as an external reviewer.

The following international meetings were all back-to-back in December 2017 in Montreal, Canada at the offices of the CBD and the international Conference Center:

CHM-IAC meeting December 2017

Han de Koeijer participated as chairperson in a two-day meeting of the CHM-IAC. He transmitted the results of the workshop with the partner countries.

WG8J

Han de Koeijer participated in the WG8J on traditional knowledge as Belgium and EU pilot for repatriation of traditional knowledge and negotiated on behalf of the EU in plenary. 13-16.12

EU CHM network meeting

Han de Koeijer participated in the network meeting that took place in Belgium. He presented the TCT tool and gave an introduction to the DARTS tool. 18-19.09

MEA INFORMEA meeting

This meeting discussed the integration of the DARTS tool into INFORMEA. A presentation was given on the tool and discussions were held with the different secretariats representatives of the Multi-lateral Environmental Agreements. 21-23.06

OECD-Environet

The meeting held on 19-20 October 2017 had several objectives. During the 1st day, attendees followed a presentation of the Global Pact for the Environment (initiative of the French Government), were given insights from the broader DAC agenda, and discussed the ENVIRONET work programme with a focus on i) Assessing the effectiveness of adaptation-related development finance, ii) Development banks and development finance institutions: scaling up green investment in developing countries, iii) Update on

Rio Markers work, iv) ENVIRONET depository of environmental policies and programmes. The second day of the meeting was dedicated to discuss on future priorities for ENVIRONET. They also addressed the DAC 'peer learning' exercise on policies and approaches to manage and mainstream environmental concerns, discussed on Climate change and governance and Environment and multidimensional fragility. The meeting finished with discussions on the 2019-2020 planning.

CEBios participated as a technical expert, as an observer to the discussions.

The activities related to (1) advice to policy makers, and (2) participation in policy meetings are listed in the following table.

Table 26: overview of advice or consultancies to policy and decision makers and participations in policy meetings by CEBioS staff in 2017.

Actor (recipient of service or meeting)	Meetings/ action	Date 2016	Location
SDG Agenda 2030 Belgium	Role of CEBioS mentioned in Belgian SDG report	Jan. 2017	CEBioS
Joint Strategic Framework and Strategic Dialogues Belgian IA and ACNG	Participation for Burundi, RDC, Benin, Vietnam	Whole year	Brussels
DGD	Formation young diplomats by Luc Jdb	24.10.2017	DGD, Egmont
DGD	Advice on bilateral programmes for Burkina Faso, Guinee, Palestina, Senegal, Tanzania	2017	Brussels
DGD	Comments on OECD document: Biodiversity and Development: Mainstreaming and Managing for Results'	21-2-2017	RBINS
DGD, Corinne Heus	Support to ministerial mission in Benin: input of CEBioS activities in Benin	13.4.2017	RBINS
DGD, Barbara Vincke	Support to ministerial mission in Tanzania: input of CEBioS activities in Tanzania	1.2.2017	RBINS
Groupes Directeur 'Nature' et 'CBD'	Participation by CEBioS	Several times a year	RBINS
IUCN	Advocacy work in favour of Belgian membership	2017	Brussels

OECD-Environet	Attendance to yearly meeting by ML Susini Ondafe	October 2017	Paris
Anne-Julie Rochette	TZ: Participation to the NGA meeting	15-16 June,	Arusha
Han de Koeijer	MEA INFORMEA Meeting	21-23.06	Montreux
Han de Koeijer	EU CHM Meeting	18-19.09	Brussels
Han de Koeijer	CHM-IAC Meeting	7-8.12	Montreal
Han de Koeijer	SBSTTA 21	10-14.12	Montreal
Han de Koeijer	WG8J 10 th Meeting	13-16.12	Montreal
Han de Koeijer	EU WPIEI Meetings	several	Brussels
Han de Koeijer	EU WG8J expert meeting	15.11	Brussels
Hilde Keunen	COST info meeting (EU)	16.5.17	Brussels
Luc JdB	Groupe de concertation « Coopération extra-européenne en matière de recherche » (CEER)	10.17	Belspo
CEBioS and other RBINS staff	RBINS and CEBioS meet the Conservation and Business sectors from DR Congo in Brussels and Tervuren: economic mission organised by Mr. Jérôme Roux (Wallonia.be, Invest-Export.Brussels, Flanders Invest & trade/ preparation, presentations, programme	19-20 June	Brussels, Tervuren



Created by Becris
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**SO 5.
THE RBINS AND DGD UNIT D2.4
IMPROVE THE KNOWLEDGE ON THE
MEASUREMENT, REPORTING AND
VERIFICATION (MRV) OF POLICY
CHOICES AND ACTIVITIES LINKED TO
BIODIVERSITY AND ECOSYSTEM
SERVICES.**

Expected results

5.1. Expertise of the RBINS on MRV is built.

5.2. Methodologies to assess progress towards the Aichi Targets are available

Expected result 5.1. Expertise of the RBINS on MRV is built

Description

To get build capacity on the MRV procedures and best practices is a learning process, both at RBINS, DGD as in the developing countries. The scale may differ, from NBSAPs to environmental reporting on one particular sector (e.g. mining industry). It is related to dissemination, e.g. through the CHM (SO2). MRV terminology is mostly used in conjunction with the United Nations Framework Convention on Climate Change (UNFCCC), REDD+ and environmental assessments, e.g. for the mining industry. It is important for DGD, RBINS and CEBioS to remain updated concerning the global trends in MRV in order to apply it as much as possible in the mainstreaming, policy support, and NBSAPs in developing countries.

Log frame (partim)

Expected results (ER)	Output Indicators	Report 2017
5.1. Expertise of the RBINS on MRV is built.	<p>The EU reporting tool for NBS's is developed in cooperation with the CHM network</p> <p>The reporting tool is used for the follow up of the implementation of national strategies and the reporting towards the Aichi targets</p>	<p>Several meetings on the tool by Han de Koeijer</p> <p>The reporting tool is used by Burundi, other countries are testing it.</p> <p>Scientific manuscript in collaboration with KLIMOS about the possibilities for environmental impact assessment focused on biodiversity within development projects.</p> <p>CEBioS scientists participated actively in meetings related to MRV (e.g. European Conference of Tropical Ecology).</p> <p>Sustainable Globe award for poster by Els De Keyzer, Maarten Vanhove et al. 2017. Sustainable fisheries in Africa</p>
Activities	Report 2017	
5.1.1. expertise concerning MRV built up in conjunction with DGD	Collaborations with institutes and organisations relevant to MRV are ongoing	

Table 27: log frame (partim) for SO5, 5.1.

Activities

Internal capacity building efforts on MRV during 2017 were mainly guided by user demand from South partners involved in the selected projects and by continuing and valorising our efforts to fill knowledge gaps, started in 2015. In addition, we invested in the visibility of our work with South partners and the promotion of policy-relevant monitoring activities with the scientific community. Some activities that can be highlighted in this framework:

- The MRV concept was presented at the European Conference of Tropical Ecology (February 2017) (Rochette A.-J. & Vanhove M.P.M. (2017) Capacity building for the Monitoring, Reporting and Verification (MRV) of biodiversity and ecosystem services in Africa (see SO3.3);
- In January 2017, Maarten Vanhove presented CEBioS' projects in a Colloquium on evolution and biodiversity at the Zoological Research Museum Alexander Koenig (Bonn, Germany) (lecture: From parasitology to policy: examples of research and capacity development regarding African (aquatic) biodiversity);
- Relevant Belgian and foreign experts are contributing contents to activities within the MRV call: collaborations were started with scientists from e.g. BIP-WCMC, GBIF, UHasselt, BGM, ULg-GxABT and these were continued in 2017 in the framework of funding applications for future MRV capacity building (see Table 27);
- An example of outcome of such collaborations is the membership of CEBioS to the International Technical Advisory and Upscaling Group (ITAUG) of the Connect Project (<http://gef-connect.web-staging.linode.unep-wcmc.org/>). This 4-year project (2016-2020) is implemented in 3 showcase countries (Ghana, Mozambique, Uganda) and coordinated by UNEP-WCMC. It aims to ensure biodiversity is taken into account in decision-making by improving end-users' access to and use of biodiversity information. As a member of the ITAUG, CEBioS will provide technical/scientific review of outputs, contribute to the up scaling of project lessons and highlight links with CEBioS MRV initiatives.
- In collaboration with KLIMOS, the possibilities for environmental impact assessment focused on biodiversity within development projects were studied. This culminated the publication of a scientific manuscript: Hugé J., Rochette A.-J., Janssens de Bisthoven L., Dahdouh-Guebas F., Koedam N. & Vanhove M.P.M. (2017) Utilitarian framings of biodiversity shape environmental impact assessment in development cooperation. *Environmental Science & Policy* 75: 91-102 (I.F. 2016: 3.751);
- Maarten Vanhove's involvement as a lead author within the IPBES RA for Africa contributes to the dissemination and translation towards policy makers of the

expertise of CEBioS and our African and Belgian partners. His follow-up of SDSN, COPBH and GEO BON feeds directly into internal capacity building efforts on MRV, data valorisation and indicator development. It also firmly anchors our activities within a UN/CBD context and contributes to awareness raising as it allowed CEBioS to disseminate outputs and calls through these channels, for example the MRV 2016 policy briefs, the 2018 MRV call, and our contribution, about education and capacity building, to a published paper reporting about the 2016 European One Health/Ecohealth Workshop (and the submission of a second manuscript related to this conference; see for further outputs: <http://www.biodiversity.be/health/226>):

- Keune H., Flandroy L., Thys S., De Regge N., Mori M., Antoine-Moussiaux N., Vanhove M.P.M., Rebolledo J., Van Gucht S., Deblauwe I., Hiemstra W., Häsler B., Binot A., Savic S., Ruegg S., De Vries S., Garnier J. & van den Berg T. (2017) The need for European OneHealth/EcoHealth networks. Archives of Public Health 75: 64 (no I.F. yet; official journal of the Belgian Association for Public Health, published by BioMed Central)

Expected result 5.2. Methodologies to assess progress towards the Aichi Targets are available

Description

With the adoption of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets in the framework of the Convention on Biological Diversity, countries will have to formulate biodiversity indicators and gather data that will feed these. One of the strategic objectives of the CEBioS programme is to improve the knowledge on the measurement, reporting and verification (MRV) of policy choices and activities linked to biodiversity and ecosystem services. We work with our partner countries in the South on the development, assessment or implementation of indicators in the framework of their National Biodiversity Strategies. To this end, a first call on MRV projects was launched in 2015. Eligible countries were those partner countries where fruitful collaborations already exist with the CBD and/or CHM NFP: Benin, Burkina Faso, Burundi, D.R. Congo, Ivory Coast, Mali, Morocco and Niger. The 2016 call was focused on the (former) provinces of the D.R.Congo, and the 2018 call targets English-speaking partner countries.

SO 5.2 receives direct contributions from SO 1.3 (Monitoring data is fed into national indicator processes).

Log frame (partim)

Expected results (ER)	Output Indicators	Report 2017
5.2. Methodologies to assess progress towards the Aichi Targets are available	National indicators are developed and used for reporting towards the Aichi targets	Data being collected in several projects and programmes under SO-1, 2 and 3 in addition to external funding. Within the second MRV call (2016), 11 projects were implemented in 2017. They focus on indicator development, and data collection to feed into these indicators, for three focal areas of the Congolese NBSAP: fisheries, charcoal and bush meat. The third call was launched end 2017 and 11 selected projects will be implemented in six English-speaking partner countries.
Activities	Report 2017	
5.2.1 MRV tools are developed and implemented (e.g. through project calls and other)	Selected projects finalised (2016 call) and starting (2018 call). Closing workshop 2016 call organised	

Table 28: log frame (partim) for SO5, 5.2.

Activities: 2016 call, implemented in 2017

Projects continued and were followed by the MRV program officers within CEBioS. The eleven MRV projects executed in the DRC in 2016-2017 were discussed at the MRV closing event (25 September and 2-4 October, Kisangani). The workshop was organized back to back with a series of workshop and trainings organized by CEBioS for about 100 Congolese biodiversity actors about biodiversity governance, scientific communication, the Nagoya Protocol, etc. Substantially more participants than the 11-20 persons originally expected, attended this session, making for very lively discussions. Besides the representatives of the MRV projects, key biodiversity actors were present at the MRV session, such as members from the Ministry of environment, from the Provincial coordination for the Environment, scientists from the CSB, etc.



Fig. 30. Group picture of the participants to the MRV closing workshop.

The discussions resulted in the creation of 3 *Policy Briefs* (*Charcoal, Bush meat and fisheries*) and, upon demand of the participants, a follow up activity by means of awareness projects (local populations involved in the data collection, local and provincial administrations and politicians). To do so, an awareness call was launched in November 2017 under SO3.2 and enables a follow-up of the 11 projects (and the 4 projects under the 2015 call) in order to disseminate project outputs such as the policy briefs. A scientific paper on the development of this MRV process and about indicators for the three selected themes was drafted with the participating Congolese partners. The publication is currently still in preparation after receiving input from all project partners (we expect to submit it by June 2018). (A similar paper for the MRV call 2015 is being finalized).

The 3 Policy Briefs have been largely distributed (physically and as Pdf) and have been very enthusiastically received for usage during the MRV-awareness projects in 2018 and by DDD as 'note techniques' to help prepare legislative documents within the appropriate commissions of the national parliament.



Fig. 31. Group working at the creation of the policy brief about charcoal.

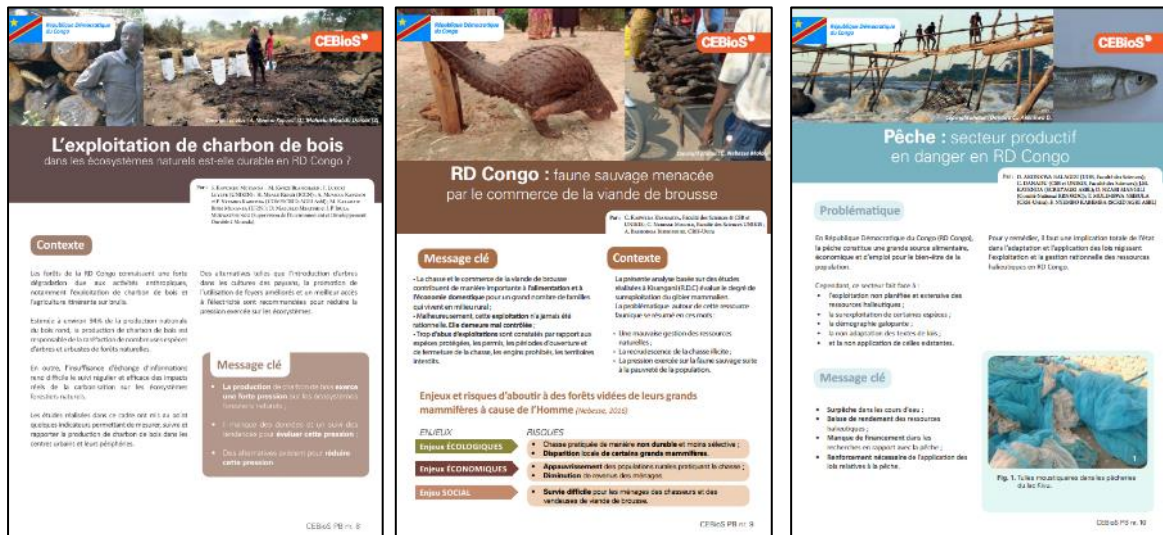


Fig. 32. The three policy briefs created during the workshop.

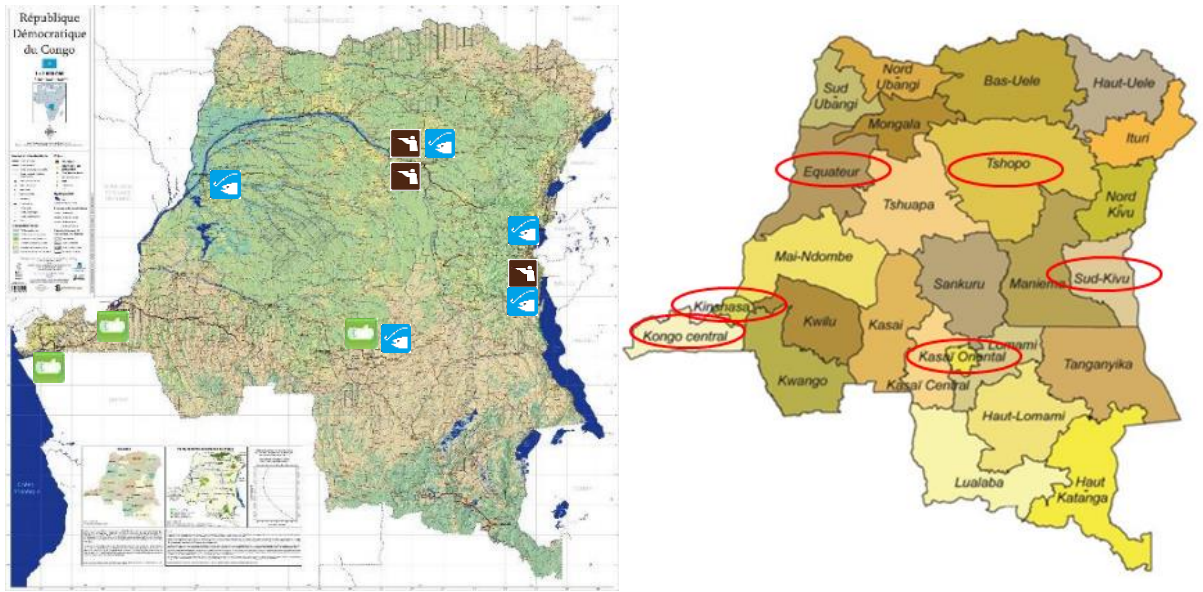



Fig. 33. Left: map of the D.R Congo showing the MRV projects selected under the 2016 competitive call according to the three themes (fisheries, charcoal, bush meat). Right: the 26 new provinces of the D.R.Congo (source RMCA); provinces involved in selected MRV projects circled in red

Table 29: an overview of the eleven selected and finalised projects is presented in the table below. Full reports are available here: <http://www.biodiv.be/cebios2/calls/mrv-calls/2016-call/selected-projects-1>.

n°	Partner	Project title (in French)	Province	Key-results/outputs
		<i>Theme: FISHERIES (Aichi Targets 6; NBSAP priority strategic axis 3, 9)</i>		
1	CSB	Exploitation des poissons à Kisangani et ses environs en République Démocratique du Congo (RDC)	Tshopo	Rates of fishing engines used Socio-economic profile of fishermen Perceptions of issues related to fishing activities
2	NODRI ONGD/ASBL + ISP/Mbandaka	Les pêches durables dans l'arrière-pays marécageux et fluvio-lacustre le long du fleuve Congo, rivière Ikelemba et du lac Tumba de 2013 à 2016	Equateur	Trends in fishing practices Trends, habitat and bibliography for 10 selected fish species Worries expressed by fishermen
3	C.R.H / Uvira	Renforcement des Capacités de l'Administration locale (Ministère de l'Agriculture, Pêche et Elevage, Ministère de l'Environnement et la police lacustre) en matière de suivi de la gestion de la pêche.	Sud-Kivu	Trends in human population and density Trends in catch per fishing unit Trends in the use of illegal fishing engines Trends in the amount of fishing permits List of species affected by habitat destruction
4	UOB + Coordination Provinciale de l'Environnement	Suivi et caractérisation de la pêche au Lac Kivu	Sud-Kivu	Rate of use of fishing practices deemed destructive for the aquatic environment Scientific paper published in the "European Scientific Journal" Leaflets created and used to sensitize fishermen through fisheries associations
5	SCRID-AGRI/ASBL + UOM	Diversité ichthyologique des espèces capturées dans les rivières du Grand Kasai en RD. Congo - Cas des rivières Lubilanji, Lokenye et Lomami	Kasai-Oriental	List, biodiversity indices and trends in the specific abundance of captured fishes Rate of use of unsustainable fishing practices



Theme: BUSHMEAT (Aichi Targets 5,7; NBSAP priority strategic axis 2, 5, 9)

6	C.S.B + Ministère de l'Environnement, Direction de Développement Durable	Projet de valorisation des données et de mise au point d'indicateurs de suivi de la Biodiversité en RDC: cas de la Viande de brousse	Tshopo	Relative abundance and market constancy of species in the market
7	C.S.B + Coordination Provinciale de l'Environnement	Exploitation de la viande de brousse dans la région forestière de Kisangani (RD Congo, Kisangani)	Tshopo	Species list, number and origin of bushmeat carcasses in Kisangani central market Frequency of hunting gears used and means of transport Priority indicators for bushmeat
8	CRH Uvira + Makerere University Kampala (MUK), Uganda	Les menaces des crocodiles (Crocodylus niloticus et Mecistops cataphractus) et les stratégies de leur conservation durable sur le littoral congolais du lac Tanganyika, République Démocratique du Congo	Sud-Kivu	Abundance and density of crocodiles and hippos Trends in the number of crocodiles and hippos that were killed by humans



Theme: CHARCOAL (Aichi Targets 5,7; NBSAP priority strategic axis 2, 5, 9)

9	UNIKIN + ICCN	Contribution à l'étude floristique des espèces végétales utilisées dans la production de charbon de bois	Kinshasa	Number, list and ecological characteristics of species used as wood energy Trends in the number of studies addressing species used for charcoal production and firewood
10	UOM + SCRID-AGRI/ASBL	Contribution à l'étude de la filière bois énergie au Kasai Oriental, RD. Congo. Cas du bassin d'approvisionnement de la Lubi	Kasai-Oriental	List, quantity and status of species used for charcoal production
11	ICCN + Supervision de l'Environnement et Développement Durable de Muanda	Le développement d'agroforêts comme alternative pour valoriser la production durable du charbon de bois autour de la ville de Boma dans le territoire de MUANDA	Kongo Central	List and frequency of species used for charcoal production Quantity, frequency and price of charcoal produced and sold Socio-economic profile of charcoal producers and sellers Numbers of producers knowing and applying agroforestry

Activities: MRV call 2018

A call for projects was launched in November for the English-speaking partner countries. This call aims at promoting links between the worlds of science and policy in order to develop biodiversity indicators in the buffer zones of protected areas, in order to maximise interactions and complementarities with the expertise CEBioS is building through the EVAMAB-project (http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/single-view-eco/news/unescos_mab_programme_and_the_belgium_government_launch_a/)

Moreover, projects had to deal with (at least one of) the following themes:

- Human-wildlife interactions (including, but not limited to, human-wildlife conflicts, and hunting/poaching)
- Charcoal and firewood
- Fisheries

Eleven projects from six countries (Ghana, Kenya, Palestinian Territory Rwanda, Tanzania, Uganda) were selected and will be implemented until August 2018. A closing workshop is foreseen in Uganda in October.

Table 34: overview of projects.

Partners	Title	Theme(s)
GHANA University for Development Studies, Department of Biodiversity Conservation and Management. Wildlife Division of the Forestry Commission, Mole National Park.	Mitigating Revenge Killing of African Bush Elephants in Fringe Communities of Mole National Park, Ghana.	Human- wildlife interactions
KENYA Kenya National Commission for UNESCO National Commission for Science, Technology and Innovation Kenya Wildlife Service Kenya Forest Service National Environment Management Authority	Enhancing Biodiversity Conservation in Kenya's Mt. Elgon Biosphere Reserve through reduced Human-Wildlife Conflicts.	Human- wildlife interactions
RWANDA ARECO-RWANDA NZIZA	Empowering communities for participatory monitoring of the impact of improved cooking stoves' adoption	Charcoal

Rwanda Development Board/Nyungwe National Park	on the conservation of Nyungwe National Park's biodiversity.	
Center of Excellence in Biodiversity and Natural Resource Management, University of Rwanda	Promoting links between the worlds of science and policy in order to develop biodiversity indicators in the buffer zones of protected areas in Rwanda	Human-wildlife interactions
Rwanda Environment Management Authority (REMA)		Firewood
PALESTINIAN TERRITORY		
Palestine Institute for Biodiversity and Sustainability/Palestine Museum of Natural History, Bethlehem University	Socio-economic sustainable development and environmental conservation at the northern transition zone to Wadi Qana Protected Area, Palestine	General
Environmental Quality Authority		
TANZANIA		
Department of Forestry and Non-Renewable Natural Resources (DFNR), Zanzibar	Development of Biodiversity Indicators for Jozani Chwaka Bay Biosphere Reserve, Zanzibar Tanzania	Human-wildlife interactions
The State University of Zanzibar (SUZA)		
Nelson Mandela Institute of Science and Technology	Linking Conservation Policies/Practices and Regulations to Biodiversity Data: A Case of Fisheries in Lake Manyara	Fisheries
UGANDA		
National Environment Management Authority (CBD NFP)	Biodiversity indicators to support policy formulation and monitoring species diversity around Mount Elgon biosphere reserve in Uganda	General
National Biodiversity Data Bank - Makerere University		
Busitema University	Strengthening conservation efforts through standardized indicator criterion: the case of Mount Elgon National park.	Human-wildlife interactions
Uganda Wildlife Authority - Mount Elgon Conservation Area		Charcoal
Busitema University, Uganda Wildlife Authority, Mt. Elgon National Park	Development of freshwater biodiversity monitoring indicators in the buffer zones of Mt. Elgon National Park Uganda	Fisheries
(NEMA)	Biosphere Reserves as Sentinels of Biodiversity Conservation: Developing Indicator for Monitoring Resilience of Exploited Fisheries Resources in Queen Elizabeth Biosphere Reserve, Uganda	Fisheries

Activities: MRV interventions with external funding

In addition to the CEBioS competitive MRV call for external partners, at the level of methodologies for data collection, partnerships were undertaken or continued in 2017 with **universities and other institutions in partner countries and in Belgium** in order to launch research on best practice and to lend our expertise to partners in South and North to stimulate extensions (science-policy interface, stakeholder involvement) to research projects. While this is mainly carried out with **external funding**, work in current partner countries of our programme is prioritised. CEBioS is currently involved in the following **externally funded projects**, focusing on methodological aspects of policy-relevant biodiversity monitoring.

Table 31: externally funded projects, focusing on methodological aspects of policy-relevant biodiversity monitoring.

Project topic	Country	Partner institute South	Partner institute North	Aichi Target
Macro-invertebrates as bio-indicators and in ecotourism. VLIR-JOINT application in 2017 (including also Kenyan, Tanzanian, Cameroonian and Beninese partners): unsuccessful	D.R. Congo	ICCN (Parc Marin des Mangroves) ISP Mbanza-Ngungu	ULB	6, 8, 11
Amphibian health for conservation, indicators, ecotourism (sandwich PhD ongoing; MSc student Joren Snoeks finished dissertation, the field work for which was supported through a VLIR-IRO travel grant in summer 2016)	South Africa	NWU	KU Leuven (VLIR, sandwich PhD)	11, 14, 18
Habitat monitoring of wetlands (project finished in 2016; two Burundese internships at VUB November-December 2016: Balthasar Mpawenayo & Claver Sibomana; 10 Burundese MSc students at UNIBU; CEBioS missions in July-August and September-October 2016)/ Students theses being elaborated till May 2018.	Burundi	OBPE, Unibu	VUB (VLIR-SI)	6, 8, 11
Impact assessment of pollution on aquatic ecosystems (project finished; reporting in 2017)	D.R. Congo	Unilu UL	KU Leuven,	6, 8

	South-South collaboration with South Africa		UA, RMCA (VLIR-SI)	
Sustainable management of aquatic biological resources (project finished; reporting in 2017)	Morocco (host) with participants invited from Benin, Burkina Faso, Cameroon, D.R Congo, Ivory Coast, Madagascar, Morocco	UM5 (host) + home institutes of participants Université Félix-Houphouët-Boigny, Université de Yaoundé I, Université de Ngaoundéré (invited experts South)	KU Leuven (VLIR-STI) IRD RMCA College of Charleston (USA)	6, 7, 8, 9
Use of existing collections or herbaria for determining baselines and to identify bio-indicators of anthropogenic change (ongoing, e.g. involvement in Belspo BRAIN-be project on introductions and parasitology of Nile tilapia; various follow-up funding acquired through BOF UHasselt in 2017)	a range of African countries, mainly D.R.Congo	CSB ICCN Unilu ISP Mb-Ng CRH-U ...	RMCA BGM UHasselt IRD	6, 7, 9
Towards sustainable fisheries of Lake Tanganyika sprat and sardine by integrating of genetics/genomics, environmental data and stakeholder involvement (JEMU pilot project ongoing at RBINS/RMCA; VLIR-VLADOC PhD student Els De Keyzer started December 2016, received the KU Leuven Sustainable Globe Award in 2017 for this project; VLIR-SI applied for and acquired in 2017)	D.R Congo Links with Burundi Potentially interesting for neighbouring countries	CRH-U	KU Leuven RMCA MUNI	4, 6, 13, 14
Economic valuation of ecosystem services in Man and Biosphere reserves: testing effective rapid assessment methods in selected African MABs (EVAMAB)	Benin, Ethiopia, Tanzania, Uganda	Pendjari NP UAC NM-AIST ...	KU Leuven VUB UAntwerpen U Hasselt	2, 3, 14

SDG 15 linking African universities for multidisciplinary outreach focused on ecosystem services

VLIR-JOINT application in 2017: **unsuccessful**

Relict and refuge altitude forest of the albert lake escarpment: mapping the main forest fragments, quantify the density of primate nests and functional diversity (mammals) along 5 line transects (3 missions with the collaboration of the local communities- lead : Dr Anne Laudisoit, consultant; 2 master theses UAntwerpen)/ Follow-up of results in 2017

Ethiopia, South-Africa, Tanzania, Uganda	NMAIST, Busitema University, Bahir Dar University, North-West University	KULeuven VUB UAntwerpen	2, 3, 14
D.R. Congo	CSB IPT de Rethy	CIFOR CRC RZSA UAntwerpen	5, 12, 14,18



Fig. 35. Sustainable Globe Award for Els De Keyzer and Maarten Vanhove for their poster 'Sustainable fisheries in Africa'.

**SO 6.
THE RBINS AND DGD UNIT D2.4. RAISE
AWARENESS ON, AND BUILD CAPACITIES
FOR, THE IMPLEMENTATION OF THE
NAGOYA PROTOCOL ON ACCESS AND
BENEFIT SHARING IN BELGIUM AND IN
DEVELOPING COUNTRIES.**



Created by Chris Homan
from Noun Project

Expected results

6.1. The RBINS and DGD are familiar with the obligations under the Nagoya Protocol.

6.2. Awareness of the scientific community on the Nagoya Protocol is raised. As outlined in the section below, capacities will first be built within RBINS. Information and training for other stakeholders, including DGD, will start as of 2014.

Expected result 6.1. RBINS and DGD are familiar with the obligations under the Nagoya Protocol

Description

The year 2017 was devoted to the follow-up of the Nagoya Protocol on Access and Benefit-Sharing, its ratification and implementation at the Belgian, European and international level. The consolidation of intern capacities is a prerequisite for the provision of training and support to DGD, our partners and any other relevant stakeholder.

Log frame (partim)

Expected results	Output Indicators	Report 2017
6.1. The RBINS and DGD are familiar with the obligations under the Nagoya Protocol.	Number of meetings on NP attended	The Nagoya Protocol and its application in the context of development cooperation, 29 June, DGD workshop
	Number of staff members aware of the implications of Nagoya Protocol implementation: 2 members of staff trained Researchers and other stakeholders are aware on the implications of the NP on their way to work.	<p>Training on Nagoya protocol in RDC (October 2017)</p> <p>Maarten Vanhove represented CEBioS/RBINS on a meeting regarding the implementation of the Nagoya Protocol for Federal Collections organised by the NFP, Salima Kempnaer on September 13th.</p> <p>3 staff members followed up on international developments among which CETAF activities.</p> <p>Replies to several mails with requests on implementation of NP in Belgium.</p>
Activities	Report 2017	
6.1.1. A flyer has been developed about "the Nagoya Protocol and implication for collecting species in non-European countries".	Belgium only ratified in November 2016. It still isn't known what the legal framework will be, therefor not possible to make the flyer..	
6.1.2. One to 2 briefing papers on developments of the NP will be prepared each year.	FAQ on NP for researchers/scientists prepared and used by CETAF and in the information sessions. Several requests from national and international scientists and companies have been analysed and answered in cooperation with the ABS nfp.	
6.1.3. to attend meetings to get acquainted with the Protocol of Nagoya and to follow up developments	Informal discussions and email correspondence (> 25) were held with scientists and companies.	

Table 32: log frame (partim) for SO6, 6.1.

Activities

Han de Koeijer was nominated as expert for Belgium at the Informal Advisory committee on capacity building for the implementation of the Nagoya Protocol and will participate in 2018 in the IAC meeting.

There were no meetings in Belgium organised by the ABS focal point. This is mainly related to the fact that there is no real development on the implementation through legal texts of the NP.

DGD and its stakeholders are aware about the Nagoya Protocol

29.06: a workshop “The Nagoya protocol and its application in the context of the development cooperation workshop at DGD” was organised at the DGD HQ. 20 + participants from DGD and their stakeholders participated in the meeting. They got an introduction to the Protocol and the implications on their work when organising training sessions for scientists in Belgium. Stakeholders that participated were from the research institutes, universities and development cooperation ANCs. The findings of the workshop were taken up during the N.P. workshop held in Kisangani in October 2017 for finding ways of implementation in RDC (see 6.2.).

Researchers and other stakeholders are aware on the implications of the NP on their ways to work.

Several demands with information on what to do to ensure compatibility to the NP while collecting abroad have been answered. Also some requests from foreign scientist who wanted to use collections in Belgium or collect here have been answered.

The FAQs were updated with the questions from the scientists. The FAQs are available at <http://www.taxonomy.be/abs/infosession/RBINS/abs-faqs> and <http://www.taxonomy.be/abs/infosession/MRAC/abs-faqs>



Fig. 36. 'Save the Date' for the DGD training on Nagoya protocol.

Expected result 6.2. Awareness of the scientific community and other stakeholders on the Nagoya Protocol is raised

Description

Whenever they bring those species in to Belgium, the Belgian Government will have the obligation to check that the necessary information in relation to Prior Informed Consent (PIC) and Mutual Agreed Terms (MAT) for the use of the species has been respected. In order to ensure that scientists that travel abroad for collection purposes are aware of the extra paperwork, they need to be informed of the implications of the NP. As the NP has entered in to force, information on ABS and the NP will be communicated through the national CHM. A special section will be developed in collaboration with the ABS national focal point of Belgium.

Log frame (partim)

Expected results	Output Indicators	Report 2017
6.2. Awareness of the scientific community and other stakeholders on the Nagoya Protocol is raised.	A special section on the Belgian Clearing House on "Frequently Asked Questions on the Nagoya Protocol" has been developed and is updated regularly.. Number of fliers Number of information sessions	The Nagoya Protocol and its application in the context of development cooperation, 29 June, DGD This section has been put on www.taxonomy.be
Activities	Report 2017	
6.2.1. information sessions are organised	One information session at DGD see 6.1. One information session in Burundi, One information session in RD Congo	
6.2.2. development of section on NP in CHM.	Belgium has ratified the NP. The section exists but no major activity by the focal point	
6.2.3. Further actions will depend on the decisions during COP11 and NP COP/MOP1		

Table 33: log frame (partim) for SO6, 6.2.

Activities

See 6.1 on information on the 6.2.1 activities. There have been discussions with representatives of the Regions about possible info sessions for scientists at regional level. As biodiversity is a regional competence we can only organise info-sessions on the NP in the Regions when invited to do so by regional organisations.

Under SO3-2 and SO6 Burundi has undertaken several activities on the Nagoya Protocol to raise awareness on the NP, a.o. a pioneering participative process to define a strategy and an agreement between the Ministries of Environment and Health, the Université du Burundi and the association of 'tradipraticiens' in order to valorise traditional knowledge about medicinal plants. As a follow up a workshop was organised in Burundi on training materials for the Nagoya Protocol and policy briefs. It was decided to develop separate policy briefs for Policy makers and for other stakeholders. The results of this aren't yet known.

A training session on the Nagoya protocol was organised during the summer school in Kisangani, DR Congo. This was the first discussion between the administration and the stakeholders in DR Congo and much appreciated by all involved. Points of view of the Belgian scientific community, gathered during the seminar at DGD, were used to

stimulate the debate; Further discussions are foreseen between ICCN, the Ministry and the Universities on how to implement the PIC and MAT processes.

Development of a section on NP in CHM

Belgium has ratified the NP in September 2016 and became officially Party to the Protocol on the 7th of November 2017. No legal instrument has yet been developed for the implementation of the NP and at this moment the EU-regulation is priming. Some pages on the CHM have been updated with new relevant information. As the NP focal point is the main person responsible for this section and doesn't work for CEBioS we can only stimulate her to update information and approve what they have added.

Several partner countries have asked questions about the development of a NP section in their CHM. The advice given to all was to make a special section under the CHM but not a complete new site. A training session of half a day was given to the national focal point for the NP during the summer school in Kisangani, DR Congo. Han de Koeijer assisted her to add the national law at the ABS CH.

SO 7. PROGRAMME COORDINATION AND MANAGEMENT

Expected Results

1. Coordination

2. Management

Description

The CEBioS programme is a policy support and capacity building unit under the Operational Direction 'Natural environment' or 'Nature' of RBINS, headed by the operational director Dr. Patrick Roose. It is coordinated and managed by the coordinator (Luc Janssens de Bisthoven), an administrative support staff (3 persons: Mariam Agarad, Vincent Pinton, Kristien Vrancken) and six scientists (Han de Koeijer, François Muhasy, Marie-Lucie Susini, Maarten Vanhove, Anne-Julie Rochette, Hilde Keunen). Moreover, the programme supports a number of salary months for 1 scientist of RBINS working at the MUMM (Management Unit of the North Sea Mathematical Models and the Scheldt estuary), a department of RBINS (Katrijn Baetens). The unit works closely with a scientist at RBINS, Erik Verheyen, concerning the capacity building in Kisangani (RDC).

Human resources

Ms. Kristien Vrancken left at the end of 2017 on career interruption. She will be temporally replaced from April 2018 onwards by newly recruited Ms. Lucie Ongena.

Dr. Maarten Vanhove left at the end of 2017 for a senior job in Finland. From May 2018, he will become Assistant Professor at the University of Hasselt.

Log frame (partim)

7. Coordination and Management		Key indicators (OVI) and targets	
Expected results (ER)		Output Indicators	Report 2017
7.1. Coordination	Annual plan, Annual report, Recruitments Trainings, Project website, Fliers, stand New partners, synergies and projects		Annual plan, annual report, recruitment, web site, new partners
7.2. Management	Number of trainees in Belgium/ Number of qualitative trainings, workshops, symposia, projects, awareness campaigns and functioning CHM websites in developing countries/ Audit Paperwork/ Functional computers, equipment (servers...)		See table 35
Activities		Report 2017	
7.1.1. Preparation of the year programme and preparation of the annual report 7.1.2. Human resources and internal capacities 7.1.3. Communication with direction of RBINS, DGD and other stakeholders and visibility 7.1.4. Prospection for synergies, partners, projects and external funding 7.1.5. Motivation, support and incitement of staff to reach targets within strategy and activity programme including mid-term evaluation and general coordination		Participation at Strategic Dialogues of Vietnam, Uganda, DR Congo, Reorganisation workload related to follow up of trainees practicalities and of contract-flow Discussions of accounting procedures and flow with RBINS Preparation of an MoU with WWF Belgium Finalisation of an ACC with ENABEL Presentation letter to the Darwin Foundation as response to their call for projects Submission of an anti-corruption project (COCORICO) to DGD (call of the Belgian Embassy in DRC) (failed) Discussions with UCL-cooperation, KMDA and WWF-Belgium on cooperation Table 35	
7.2.1. organisation of the mobility of the trainees to Belgium 7.2.2. financial management 7.2.3. administration 7.2.4. ICT		done	

Table 34: log frame (partim) for 'coordination and management'.

Activities

The role of the programme coordination is to ensure the coherence and integration of the various components of the cooperation protocol. It also plays an important role of

synchronisation with the activities of all project partners: the other RBINS departments, other institutions such as the RMCA, NBGB and universities, NGOs, as well as administrations in Belgium and abroad.

Among other tasks, the coordination is responsible for:

- maintaining regular contacts with the DGD administration, embassies, CBD, the VLIR, ARES, Enabel and others,
- the elaboration of the work programmes in collaboration with the responsible persons,
- the adaptation of activities during the programme period whenever necessary,
- the evaluation and reporting of yearly activities,
- the management of accounts,
- the logistic support to the organisation of training activities,
- the supervision of the daily work of the programme's personnel,
- the hiring of staff,
- general aspects of representation, networking and communication.

As part of our networking activities, we continued to exchange information and experiences with other Belgian and international actors involved in biodiversity-related issues. Among our usual partners, we worked closely with the CBD Secretariat, in Montreal, as well as with other UN-agencies and programmes and with others (e.g. WWF, the group 'conservation biology' of RBINS, spf Env, EU DG DEVCO, IPBES, IUCN etc.). CEBioS also actively contributes to opinion papers taking position on biodiversity and ecosystem services in the Global South and/or on matters relevant for natural history institutions.

The following table lists most activities for coordination and management related to Meetings, networking, RBINS, OD Nature, CEBioS processes, Academic work, teaching & research, and Monitoring & Evaluation.

Table 35: principal meetings coordination and management of the coordinator and the CEBioS staff. For policy consultancies and meetings, as well as monitoring and evaluation, see under SO4.2.

Actor (recipient of service or meeting)	Meetings/ action	Date 2016	Location
Enabel	Several meetings and communication to sign MoU	Whole year	Brussels
WWF-Belgium	Several meetings and communication to sign MoU	Whole year	Brussels
Publication Service Unit (PSU)	Several meetings and communication to sign internal agreement for production of lexica and AbcTaxa	Whole year	RBINS
Bee day	Support by CEBioS to NFP CBD	15.5.17	RBINS
DGD, Enabel, NGOs	Seminary on the Nagoya protocol DGD	29-6-17	DGD
IPBES	4th Pan-European IPBES Stakeholder Consultation (PESC-4) (participation Marie-Lucie Susini Ondafe)/ IPBES panels on capacity building	Dates: 12-14 June 2017	Place: Vácrátót, Hungary, Ivory Coast, Norway
KADIMA's PRIDE OF AFRICA SAFARI PARK, RDC	Meeting to set up network (H Keunen) Meetings at economic mission tourism	28.03.17 June 2017	Kinshasa Brussels, Tervuren (RMCA)
Enabel	Presentation CEBioS – Kinshasa (H Keunen) Presentation CEBioS – Kisangani (H Keunen, E Verheyen)	28.03.17 26.03.17	Kinshasa Kisangani
EU DELEGATIE KINSHASA	Presentation CEBioS (H Keunen)	7.12.2017	Kinshasa
Belgian embassy DR Congo	Presentation recent activities in DRC CEBioS (H Keunen)	31.03.17 08.12; 17	
KMDA, Zoo	Meeting for synergies, Zjef Pereboom, Peter Galbusera	3.2. 2017	Antwerp, Zoo
Educaid	Lead environment subgroup by ML Susini Ondafe	17.2.2017	Brussels
WVOB	Meetings on cooperation in RDC by Hilde Keunen	16.2.17 9.10.2017 08.12.17	Brussels Kinshasa Kinshasa
Fiabel, Joint Strategic Framework	Strategic Dialogue Belgium	17.11.2017	ARES, Brussels
Fiabel	Meeting on cooperation	13.10.2017	Fiabel, Brussels
Evamab	Launch in Paris and Steering Committee in Brussels	January and 14.12.17	Paris and RBINS
SBBOA	LjdB member of general assembly	19.4.17	Belpo

Leopold III Fund FOD environment (P. Grobben) KLIMOS (Acropolis)	LjdB member of general assembly	May	RBINS
	Cooperation with Burundi meeting (Han dK)	March 2017	Brussels
	Participation steering committees, attendances to seminars	Several days in 2017	Brussels
RBINS, BIOPOLS	BIOPOLS meetings (LjdB = liaison officer)	Bi-monthly	RBINS
RBINS, OD Nature	Annual highlights input by CEBioS	Every 3 months	RBINS
RBINS, OD Nature	LSO meetings (L JdB), Business reviews	LSO: monthly BR: 3-monthly	Brussels, RBINS Gulledelle campus
CEBioS	Mid Term Evaluation: ToR, coordination, desk study by 3 independent international evaluators commissioned by BELSPO, interviews physical and skype, Focus Group workshop at Belspo, table of indicators for 2014-2017, management response	Whole year	RBINS, Belspo
RBINS & CEBioS	Processes to optimize mission regulation, especially concerning RDC	2017	RBINS
RBINS, OD Nature	Input publications Biblio4Plone, type service and type research staff discussions, preparation FEDtWIN domain	2017	RBINS
CEBioS	Administrative streamlining on contract flow, financial reporting, stagiaire logistics	Several meetings	RBINS
CEBioS	Annual report 2016, planning 2017	Start of 2017	RBINS
RBINS	LjdB is 1 of 4 persons of confidence for the institute: intervision	14.12.2017	RBINS
Visit by forestry expert and ex WWF D. Plouvier Gerard Cobut (muséologie) RBINS KU Leuven & others	Meeting	18.1.2017	RBINS
	Meeting to prepare monkey exhibition (L JdB)	17.3.2017	RBINS
	Conference on development cooperation at universities Future of University Development Cooperation Perspectives of Leading Research Universities	2.6.2017	Leuven

Luc JdB	webinar on NBSAP and conservation	17.5.2017	RBINS
Hilde Keunen, Maarten Vanhove	Conference EU agricultural upscaling in the South (GAP Networking event)	17.5.2017	Ghent
Hilde Keunen, Maarten Vanhove	Ontwikkelingsdebat: humanitarian aid and development cooperation	16.5.2017	Enabel
KU Leuven	Invited for visitation by LjdB of Master ICP Sustainable development	11.12.17	Leuven
VUB	Luc JdB as member of PhD jury for Aymere Awoke Assayie (Ethiopia, VUB) : "Development of monitoring tools for short and long-term changes of ecological water quality of Ethiopian rivers", defense	October 2017	Brussels, VUB
Conference tropical Ecology	CEBioS: 8 Posters, lectures	February 2017	VUB, Brussels
International Foundation for Sciences	Peer review of projects by CEBioS staff	October 2017	RBINS
Visit by Prof. Gembu (CSB) and Prof, Nshimba (UNIKIS)	Monitoring of CSB programme	13.2.17	RBINS
Visit by Prof. Dudu Akaibe, dir. of CSB	Monitoring of CSB programme	13.4.2017	RBINS
World bank, Burundi	Skype session on Lake Tanganyika	22.2.2017	RBINS

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ANNEXES

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ANNEX 1: LOG FRAME MATRIX (2014-2018)

(File on demand)

ANNEX 2: LOG FRAME MATRIX (PARTIM) CENTRE DE SURVEILLANCE DE BIODIVERSITE (RDC)

ANNEXE 1 CADRE LOGIQUE : OBJECTIFS ET RESULTATS ATTENDUS						
OBJECTIFS GENERAUX		OBJECTIFS SPECIFIQUES		RESULTATS ATTENDUS		2017
OG1	Préparer le Centre de Surveillance de la Biodiversité (CSB) comme Point focal CHM secondaire pour la République Démocratique du Congo	OS1	Promouvoir et faciliter les échanges d'informations entre le Ministère national en charge de l'environnement, la Coordination provinciale de l'Environnement, le CSB et les parties prenantes	RA0	Un Mémorandum d'Entente entre le Ministère en charge de l'Environnement et le CSB est conclu	✓
				RA1	Des concertations régulières entre le Ministère national en charge de l'environnement, la Coordination provinciale de l'Environnement et le CSB pour la réalisation des activités dans le cadre du SNPAB ont lieu	en cours
		OS2	Promouvoir et faciliter la coopération technique et scientifique entre le Ministère national en charge de l'environnement, la Coordination provinciale de l'Environnement, le CSB et les parties prenantes	RA2	Min nation, provinc, CSB, CEBioS développent ensemble des projets/activités pertinentes au SNPAB en faisant appel à l'expertise disponible dans d'autres institutions/organisations/universités	✓
		OS3	Sensibiliser et renforcer les capacités des acteurs et des parties prenantes du CHM secondaire	RA3	Le CHM et le Measuring, Reporting, Verification (MRV) en RD Congo sont renforcés	✓
				RA4	Les capacités des acteurs et des parties prenantes du CHM secondaire sont renforcées	✓
		OS4	Sensibiliser les groupes cibles impliqués dans l'objectif CHM	RA5	Les groupes cibles impliqués dans l'objectif CHM sont sensibilisés à la biodiversité	en cours
OG2	Renforcer la mission du Centre de Surveillance de la Biodiversité (CSB) comme centre d'expertise national sur la biodiversité en République Démocratique du Congo	OS5	Appuyer le Ministère en charge de l'Environnement dans la préparation des positions concernant les réunions organisées par le Secrétariat de la CDB	RA6	Des rapports techniques, des 'policy briefs', des avis produits par le CSB sont disponible pour appuyer Le Ministère en charge de l'Environnement dans la préparation des positions concernant les réunions organisées par le Secrétariat de la CDB	✓

Table 36: objectives and Expected Results of the ACC CSB-RBINS.

ANNEX 3: DETAILS OF OBPE REPORT 2017

Le plan d'installation des pépinières, Localisation géoréférenciée du site de travail, Collecte et conservation des graines

Les graines collectées et conservées à la centrale de graines de l'Office Burundais pour la Protection de l'Environnement une année plutôt étaient toutes périmées, ce qui a été dû probablement à des coupures répétitives d'électricité alimentant la chambre froide. Les graines utilisées ont été directement récoltées mais, la saison de fructification était déjà dépassée pour pas mal d'espèces d'où la réduction du nombre d'espèces tenues en compte pour cette activité.

Resultats

Les premiers plantes sont sortis du sol deux semaines après le semis chez *Brachystegia utilis* et *Julbernardia globiflora* alors que chez *Isoberlinia angolensis*, il a fallu attendre la fin de la 4^{ème} semaine pour observer les premiers plants sortir du sol. La germination est épigée chez *Brachystegia utilis* et *Julbernardia globiflora* (Figs. 37a, 37b, 37c) alors qu'elle est hypogée chez *Isoberlinia angolensis* ; Pour tous les cas, la racine pivotante a atteint 15 cm de profondeur en deux semaines qui suivent la germination.



2.2.6 Organiser la filière des champignons

Dans le cadre de création des filières des ressources biologiques à importance économique non négligeable, l'OBPE débute avec la filière des champignons sauvages comestibles. La création de cette filière exige plusieurs préparations notamment : une campagne de formation des cueilleurs sur une cueillette professionnelle et une conservation de champignons, une élaboration d'un plan d'affaire, Une opérationnalisation du plan d'affaire.

Ainsi, une descente supervisée par Msc Benoît NZIGIDAHERA, chef de recherche en Biodiversité à l'OBPE au sud du pays dans les forêts claires abritant les diversités de champignons sauvages comestible en l'occurrence :

- La Réserve Naturelle de Rumonge ;
- La Réserve Naturelle de Vyanda précisément à Cabara ;

- Le Paysage Protégé de Mabanda-Nyanza-lac précisément à Muyange a été un préalable pour former des cueilleurs sur les méthodes de cueillette professionnelle.

Cette descente a permis de grouper les cueilleurs riverains des forêts claires représentant tous les cueilleurs. Ce groupement s'imposait puisque la formation de tous les cueilleurs s'avérait impossible à cause des moyens financiers limités. Trois groupements ont été formés dont celui de Rumonge comprenant 7 cueilleurs et 3 gardes (Fig. 38a), celui de Vyanda avec 4 cueilleurs et 1 garde Fig. 38b) et celui de Mabanda Nyanza-lac comprenant 3 cueilleurs et 1 garde (Fig. 38c).



Fig. 38a, 38b et 38c.

Un plan d'affaire a été élaboré (Document en annexe 2 de ce rapport) sur base de documentation et des enquêtes auprès des différentes parties prenantes dans le commerce des champignons. Il reste son opérationnalisation qui demande la mobilisation des fonds pour le financement des investissements alloués à la démarche de la filière des champignons sauvages comestibles.

ANNEX 4: FULL REPORTS OF GTI WORKSHOPS IN PARTNER COUNTRIES



Project 1. 'Taxinomie, systématique et biodiversité des oligochètes des eaux souterraines du Bénin'

by Dr Patrick Martin

Text in French taken from the report submitted by Dr P. Martin (shortened):

Le présent projet se propose de combler un handicap taxinomique par la formation d'un spécialiste à la taxinomie et la systématique des Oligochètes dulçaquicoles, avec un accent particulier sur les eaux souterraines, et de construire une nouvelle expertise scientifique et technique (connaissance des oligochètes et de leur composante stygobionte, techniques d'échantillonnage du milieu souterrain, techniques d'étude morphologique et génétique).

Placé dans les contextes du développement durable, du changement climatique planétaire et de la conservation de la biodiversité, ce projet permettra, à son terme :

1. de fournir une liste détaillée et une collection de référence des oligochètes des eaux souterraines à l'échelle nationale ;
2. de constituer une base de données génétiques des oligochètes de la stygofaune, pouvant servir de référence pour des études futures faisant appel au «DNA barcoding»
3. par l'approche génétique, d'identifier les complexes d'espèces cryptiques, le degré d'endémisme de la stygofaune et sa capacité de dispersion, et le degré de connectivité entre les différentes stations ;
4. d'identifier les constituants importants de la faune des oligochètes des eaux souterraines, en terme de conservation et d'intérêt patrimonial (espèces reliques, endémiques et/ou stygobies) ;
5. de constituer une collection de travail représentative de la stygofaune du Bénin pour des études futures d'autres groupes taxinomiques représentatifs des eaux souterraines.

Ce projet s'intègre dans un cadre de recherches plus vaste qui vise à utiliser la richesse spécifique de la stygofaune comme indicateur de la qualité des eaux souterraines. Par sa composante « bio-indicateur », il s'inscrit dans une optique de réduction de la pauvreté par amélioration de la santé publique.

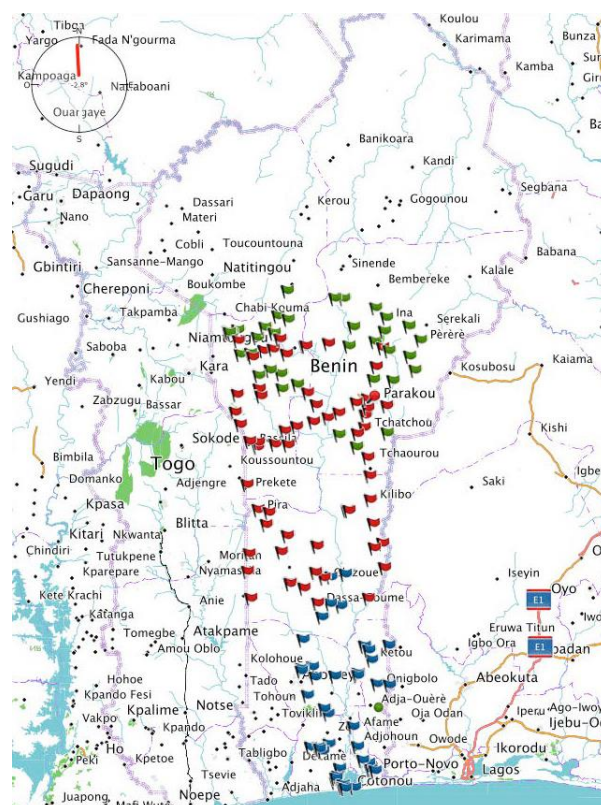


Fig. 40. Stations échantillonnées (puits) en 2015 (drapeaux bleus), 2016 (drapeaux rouges) et 2017 (drapeaux verts) dans l'ensemble hydrographique de l'Ouémé-Yéwa (@P. Martin).

En 2017, les tâches effectuées ont été :

- Formations – renforcement des capacités
- Campagne d'échantillonnage sur le terrain de 15 jours
- Tri du matériel récolté au laboratoire de Parasitologie et d'Ecologie parasitaire de l'UAC
- Clés d'identification des oligochètes du Bénin. A ce jour, trois bases de données de connaissance taxonomique ont été développées pour les oligochètes du Bénin
- Identification du matériel récolté, description d'espèces et création d'une collection de référence
- « DNA barcoding » des oligochètes par M. Lagnika à l'IRSNB (1 mois).



Fig. 41. Sampling at well n° BEN104 (Témé) and raising awareness of local population (Photo@Patrick Martin).

Résultats obtenus à la fin du projet 2017 :

1. L'ensemble des données récoltées (2015, 2016 et 2017) a été encodé dans un fichier Excel. Le but poursuivi est d'avoir une base de données de référence comprenant les caractéristiques géographiques, physico-chimiques et faunistiques de tous les puits traditionnels échantillonnés et étudiés au Bénin dans le cadre du partenariat entre l'université d'Abomey-Calavi et l'IRSNB.
2. A ce jour, la banque de tissu contient 368 spécimens représentatifs de plusieurs familles et genres, les Naididae (Aulophorus, Dero, Pristina), les Haplotaxidae (Haplotaxis), les Enchytraeidae (non identifiés), les Phreodrilidae (non identifiés) et quelques mégadriles non identifiés.
3. Tous les groupes zoologiques présents dans les échantillons ont été triés et conservés dans l'alcool afin de constituer une collection de tissus de référence pour études futu
4. Outre l'oligochète stygobionte Haplotaxis, quelques stations, dans la région de Djougou, au nord-ouest du pays, ont révélé la présence d'espèces particulières, d'un intérêt biologique exceptionnel, tant par l'information paléogéographique que leur présence véhicule que par les processus évolutifs que leur morphologie suggère.

5. Une espèce (probablement nouvelle) d'un oligochète attribuable à la sous-famille des Phallodrilinae a été trouvée à Moné (BEN128 ; périphérie est de Djougou). La découverte de cette espèce est remarquable dans la mesure où elle appartient à une sous-famille essentiellement marine, dont les seuls représentants dulçaquicoles ont été signalés exclusivement dans les eaux souterraines. Il s'agit donc d'une espèce stygobionte d'origine marine, ou « thalassoïde limnostygobionte », dont la présence est indicatrice d'un événement ancien de transgression-régression marine (Boutin & Coineau 2005) dans le nord du Bénin.
6. Des Crustacés Syncarides, probablement Parabathynellidae, ont également été trouvés à Vanhoui (S-E Djougou, BEN147), Moné (BEN128) et Djougou (BEN110) (Fig. 21). Les groupes hypogés de ces crustacés interstitiels sont présents sur tous les continents pourvu que ceux-ci aient été recouverts par une mer transgressive post Carbonifère (période où le groupe était encore souvent littoral et lagunaire) (Boutin, com. pers.). Leur présence corrobore donc l'hypothèse paléogéographique basée sur la présence de l'oligochète Phallodrilinae à Moné.
7. La connaissance des deux groupes principaux d'oligochètes, présents dans les puits du Bénin, apportent des informations intéressantes dans la gestion de la ressource dans la mesure où :
 1. Les stations à Haplotaxis sont, potentiellement, des sources d'eau de qualité en raison de l'origine phréatique de l'eau, attestée par la présence d'espèces stygobiontes,
 2. Sous réserve d'une meilleure compréhension des mécanismes de dispersion des Aulophorus, les stations où ils sont présents témoignent d'une mauvaise protection des puits contre des éléments exogènes, ce qui peut avoir une répercussion négative sur la qualité de l'eau.



Fig. 42. Dr P. Martin giving a lecture on Annelids to Hydrobiology Master's students of UAC (Photo@Moissou Lagnika).

Le présent projet a permis de renforcer les capacités de l'équipe partenaire béninoise

selon les trois axes ci-dessous :

Matériel

Ce projet a permis de compléter, en 2017, le matériel des partenaires béninois en sorte qu'ils soient autonomes pour des missions futures.

Données

- Construction d'une base de données géo-référencée des puits traditionnels du Bénin et de leurs caractéristiques biotiques et abiotiques ;
- Production de clés d'identification interactives des principaux genres du Bénin dans le programme XPer2 (gratuit, sous licence « Creative Commons ») ;

Formations

- Introduction à l'étude de la faune des eaux souterraines et des oligochètes aquatiques donnée aux étudiants du laboratoire d'Hydrobiologie appliquée (Master 1)
- Poursuite de la formation aux techniques de séquençage de l'ADN donnée à M. Moïssou Lagnika, dans le cadre du DNA barcoding.

Grâce à ces actions, M. Joseph HOTEKPO a pu terminer son travail de fin de master sur un sujet similaire dans le bassin versant de la rivière So (partie du bassin de l'Ouémé), bénéficiant de sa formation en participant aux missions 2015, 2016 et 2017, et du matériel à disposition du laboratoire.

Enfin, la formation de M. Lagnika aux techniques moléculaires, indispensables à toute étude taxonomique moderne, pourra être valorisée au Bénin dans de futurs projets, grâce à diverses infrastructures existantes permettant de faire au minimum les extractions et les PCRs (le séquençage doit être sous-traité) : laboratoire de Génétique de l'UAC, Faculté des Sciences de la santé ou Institut des Sciences biomédicales appliquées via l'IRD.

Perspectives – développements futurs :

Sous réserve d'un financement pour la prochaine année, il sera possible de clôturer la recherche entamée sur la biodiversité des eaux souterraines au niveau de l'un des quatre grands ensembles hydrographiques du Bénin, l'ensemble Ouémé-Yéwa (bassins versants de l'Ouémé, Okpara, Zou, Hlan et Yéwa), ainsi que la formation taxonomique sur les annélides oligochètes aquatiques.

Les projets CEBioS GTI précédents ont permis d'accumuler une base exhaustive de données faunistiques et physico-chimiques pour l'ensemble des 150 puits échantillonnés dans l'ensemble hydrographique de l'Ouémé-Yéwa. Ces données feront l'objet d'analyses statistiques appropriées afin d'évaluer dans quelle mesure la biodiversité, en général, et la faune stygobie, en particulier, présentes dans l'eau des puits peuvent être corrélées avec la qualité de l'eau. Des analyses multivariées seront réalisées, suivant l'approche développée par Lagnika et al. (Lagnika et al. 2016; Lagnika et al. 2014a; Lagnika et al. 2014b).

Afin d'orienter la recherche et les formations taxinomiques futures, un échantillonnage exploratoire d'un autre ensemble hydrographique est envisagé, le bassin hydrographique de la Volta, à titre de comparaison avec l'ensemble Ouémé-Yéwa. A terme, cette approche comparative devrait permettre de valider les résultats et conclusions que le présent projet permettra d'obtenir.

Publications :

Jusqu'à présent, ce projet a été consacré essentiellement à la récolte de données, sur le terrain et en laboratoire. Les résultats exposés ci-dessus, notamment dans le domaine du DNA barcoding, ont fait l'objet, en 2017, de communications au cours de deux congrès (Martin et al. 2017a, b). Une étude morphologique détaillée, envisagée dans le courant 2018, est encore nécessaire avant d'envisager une publication dans une revue scientifique. Ces résultats feront l'objet d'une communication au prochain congrès international pour l'étude des oligochètes aquatiques en 2018.



Fig. 43. *Aulophorus furcatus* (A) et *Aulophorus ghanensis* (B) under the microscope (Photo@P. Martin).

All relevant information (full reports, database...) is available on our website here: http://www.taxonomy.be/gti_calls/grants_awarded/grants-rbins-2014/p-martin-benin.



Project 2. 'A step further in the Entomodiversity of Cambodia (part I)'

by Jérôme Constant and Frederik Hendrickx

The mission took place in October 2017 for 2 weeks.

The following scientists actively participated in this part of the project: Mr. Jérôme Constant (JC), Expert in Collection Management, O.D. Taxonomy & Phylogeny, Entomology (RBINS) – 2 weeks field trip in Cambodia / mounting & identification (Fulgoromorpha, Phasmida) in RBINS /

management of the project; Mr Sophany Phauk (SP), lecturer (RUPP, Cambodia) - training in field collecting and taxonomy; Mr. Xavier Vermeersch (XV), Scientific Collaborator, O.D. Taxonomy & Phylogeny, Entomology (RBINS) – 2 weeks field trip in Cambodia / mounting & identification (Mantodea) in RBINS. A total of 6 students from RUPP participated in the training in field collecting and taxonomy.

Entomological Inventories

Sampling was conducted at three locations: (1) Yeak Laom Lake and Kachan Waterfall (13°44'N 107°01'E), (2) Koulen Prumtep Wildlife Sanctuary (13°52'N 104°50'E) and (3) BeTreed Ecotourism (13°29'44"N 104°42'36"E).

As a general trend, insects were fairly abundant and specimens belonging to most insect groups were collected. Orthoptera were especially abundant and diverse. However, stick insects were not as common as e.g. in N Vietnam, a situation already experienced during the previous Cambodian expeditions, which resembles the situation in S Vietnam (GTI project, 2012).

The rangers and authorities of the locations expressed great interest in this work and the scientists received a lot of help from them. However, understanding the administrative steps to obtain all the necessary authorisations was sometimes slightly challenging.

About 900+ photographs documenting insects and habitats were taken during the fieldwork and will be used to illustrate scientific papers etc.

The species lists will be provided to the authorities of the different sampled areas by SP. See GTI website for articles already published here:

http://www.taxonomy.be/gti_calls/grants_awarded/publis-gti.



Fig. 44. Yeak Laom Lake and Kachan Waterfall fauna and landscape.
(Photos@Jerôme Constant).

Assessment of RUPP-CEI collections

The young collection of RUPP-CEI (started in 2014 by SP) already contains an impressive number of specimens and is kept under very good conditions in a room with air conditioning and the specimens are well mounted and labelled. It is the first of its kind in Cambodia and will be a great source of discoveries (e.g. new species, new country records) in the coming years because the fauna of Cambodia is very poorly documented as compared to the fauna of neighbouring countries. It will also serve as an example on how entomological collections should be set up in other institutions.

Seminars on “Insects and Nature Conservation” (by JC) and “Praying mantises An introduction to the morphology and taxonomy of the order Mantodea” (by XV)

Two seminars were given at RUPP for a numerous audience (50+) of RUPP students and professors, staff from the Ministry of Environment and Institut Pasteur in Phnom Penh, and expats interested in entomology. The first seminar presents the results of the policy brief “Vietnam, a champion for insect biodiversity: A win-win commitment” which resulted of the GTI uptake meeting in Hanoi in April 2017 (https://www.researchgate.net/publication/322557227_Vietnam_a_Champion_for_Insect_Biodiversity_a_Win-Win_Commitment). This topic was very relevant in Cambodia because the country shares a number of typical habitats with its neighbour Vietnam. The second seminar was a first insight in the diversity, characteristics and taxonomy of praying mantises, an extremely poorly documented group in Cambodia.



Fig. 45. Jérôme Constant during the RUPP seminar. (Photos@Xavier Vermeersch).

Dissemination of the project results

Together with the NGO Fauna in Focus (<https://www.faunainfocus.org/>), the RBINS scientists organized a workshop on insects in the forest near Angkor. This activity was open to the general public and aimed to raise awareness about insect diversity and the lack of data on the latter in

Cambodia. A presentation based on the 2016 paper by Constant *et al.* [Updating lanternflies biodiversity knowledge in Cambodia (Hemiptera: Fulgoromorpha: Fulgoridae) by optimizing field work surveys with citizen science involvement through Facebook networking and data access in FLOW website. *Belgian Journal of Entomology*, 37: 1–16], was given to explain the advantages of citizen science for e.g. insect inventories. Twelve people attended the workshop, and the fieldwork was also an opportunity for CEI students to share the knowledge they have acquired during the expedition. The NGO Fauna in Focus recently produced the first documentary on Cambodian biodiversity (https://www.youtube.com/watch?v=4_oOu5HBPZs) and the RBINS scientists plan to go on organizing similar workshop with them in the future.

Conclusion and perspectives

This GTI project was very successful again in all points of view: insect collecting (many new species and new records), contacts between the members of the staff learning experiences and sharing of knowledge and projects for further future collaboration, and especially the somewhat unexpected organization of the workshop with Fauna in Focus which allowed contact between citizens in Cambodia and insect scientists. It was a great way for the RUPP students to share their new knowledge. The stick insect breeding in RUPP-CEI goes on well with interesting results, which will be used in future scientific papers. Numerous new species and new country records as a result of this GTI project will be published in the coming months/years, progressively building an image of the entomodiversity of the country, which will be available to adapt the nature management in the country. In this aspect, the support of the Ministry of Environment is crucial to go on with our taxonomic work.



Project 3. 'A step further in the Entomodiversity of Vietnam (part VIII)' by Jérôme Constant and Frederik Hendrickx

The mission in Vietnam took place in July 2017 for 3 weeks.

List of participating scientists: Mr. Jérôme Constant (JC), Expert Taxonomist, O.D. Taxonomy & Phylogeny, Entomology (RBINS) – 3 weeks field trip in Vietnam / mounting & identification (Fulgoromorpha, Phasmida) in RBINS / management of the project; Dr Hong Thai Pham (HTP), head of Collection Specimens Management Department (VNMN) – 3 weeks field trip in Vietnam / mounting & identification (Cicadidae) in VNMN; Mr. Joachim Bresseel (JB), Scientific Collaborator, O.D. Taxonomy & Phylogeny, Entomology (RBINS) – 3 weeks field trip in Vietnam / mounting & identification (Phasmida) in RBINS; Mr Van Dat Nguyen (VDN), Specimens Collections Department (VNMN) – training in entomology fieldwork; Mrs Nguyen Thi Man (NTM), researcher (VNMN) – training in Auchenorrhyncha taxonomy and fieldwork techniques; Mr. Pol Limbourg (PL),

Collection Manager, Entomology (RBINS) – mounting & identification (Coleoptera Rutelinae) in RBINS.

Entomological Inventories

- Sampling was conducted at three locations: (1) Pu Mat National Park (18°59'N 104°40'E), (2) Ke Go Nature Reserve (18°09'N 105°55'E) and (3) Ba Na-Nui Chua Nature Reserve (16°00'N 108°02'E).
- Light trapping was performed each night, whenever possible in 2 places the same night (when power sources were available). Malaise traps and pitfall traps were installed. Sweeping, beating and sight collecting was performed during both night and daytime, using head torches and torches.
- As a general trend, insects were fairly abundant and specimens belonging to most insect groups were collected. The abundance and diversity of stick insects was quite high with surprising level of diversity in managed and highly disturbed habitats (e.g. botanical garden, pastures).
- The rangers and authorities of the locations expressed great interest in the scientists' work and they received a lot of help from them.
- About 1300+ photographs documenting insects and habitats were taken during the fieldwork and will be used to illustrate scientific papers etc.
- The species lists will be provided to the authorities of the different sampled areas by HTP.



Fig.46. Pu Mat National Park, fauna landscape and sampling at night.
(Photos @ J. Constant)

Assessment of VNMN collections

The condition of the collection is good, it is located in bigger and better equipped rooms than in the past, which was necessary to reach the high standards of a national museum with international ambitions in terms of research and reference position. However, the situation is not yet completely satisfactory. The planned new National Museum of Nature will hopefully solve these problems. New good quality drawers were purchased and will be useful to store the growing entomological collections of the institution. A mass of material remains unmounted on cotton layers and in alcohol and, as such, remains unavailable for scientific research. RBINS scientists propose to prioritize the mounting of those specimens which will greatly increase the richness and interest of the VNMN entomological collections and to keep on building international cooperation with specialized taxonomists abroad to identify the material that surely contains many undescribed species.

Workshop and seminars at VNMN

Two seminars entitled “Vietnam, a champion for insect biodiversity: a win-win commitment” (by JC) and “Entomology and stick insect diversity” (by JB) were given at VNMN. The audience (20+ persons) was from VNMN, IEBR, the Forest Museum and Hanoi University. The 1st seminar presented the results of the policy brief, which resulted of the GTI uptake meeting in Hanoi in April 2017. The policy brief is available here:

https://www.researchgate.net/publication/322557227_Vietnam_a_Champion_for_Insect_Biodiversity_a_Win-Win_Commitment

The seminars were followed by a workshop for VNMN entomology staff on mounting stick insects and small Auchenorrhyncha specimens.



Fig. 47. Some of the new species recently described in the framework of this GTI project. (Photos @ J. Constant)

Dissemination of the project results

From 3 to 6 April 2017, CEBioS organized a GTI uptake meeting on the collaboration between entomologists from the RBINS and VNMN in Vietnam (Hanoi and Cuc Phuong National Park). Colleagues from the Muséum National d'Histoire Naturelle (Paris, France), Natural History Museum of the University of Florence (Italy) and the Royal University of Phnom Penh (Cambodia) were invited to collaborate in the production of a policy brief promoting the relation between the taxonomic research and an efficient protection of the biodiversity. The results were presented to the Vietnamese authorities. The policy brief is available from the Internet and has already been downloaded 500+ times. Moreover, we have been contacted by a colleague from the University of the Philippines, Los Baños, who asked for assistance to organise a similar project in the Philippines. The uptake meeting was followed by a Belgian TV team who produces a series of documentaries about the research and researchers of RBINS. They also accompanied us one week in the field in Phong Dien VNMN Field Station and Bach Ma National Park. The series is to be released at the end of 2018 (trailer: <https://vimeo.com/209523812>).

Conclusion and perspectives

This GTI project was very successful again in all its aspects: insect collecting (many new species and new records), contacts between the members of the staff learning experiences and sharing of knowledge and projects for further future collaboration, and especially the spreading of the policy brief towards the authorities of the national park and reserves that RBINS scientists visited this year. We hope that our Philippine colleagues will be successful with their project of a similar policy brief on their country.



Project 5: Training course on Hymenoptera and other pollinators in Tanzania

by A. Pauly

The mission in Tanzania took place from 20/02 to 14/03/2018.

The training was given by Alain Pauly, Wouter Dekoninck and Jean-Luc Boevé to a dozen people, and focused on bees and other pollinators. All the training was performed in collaboration with, and by co-financing from, the JRS Biodiversity Foundation; the director of the project in Tanzania is Henry Njovu, who works at the College of African Wildlife Management, Mweka (CAWM) and at the University of Würzburg, Germany.

The project was hosted at the College of African Wildlife Management, Mweka (CAWM) on the Southern slopes on the Mont Kilimandjaro. From its establishment (1963) until 2011, the College

specialized on providing training in wildlife management at the certificate and diploma levels. Implementing this project in the context of the College, as opposed to some less-permanent institutional base, assures a long-term “home” for the Tanzanian bee pollinator project.

Pollination is an essential feature for both biodiversity conservation and agriculture, and many plants including crops rely for their reproduction on pollinators. It is therefore a crucial deal for a country to take stock of its natural insect resources by conserving a high biodiversity level, which in turn can improve agricultural productivity, and consequently, ensure a better human food supply.

Identified taxonomic needs

Hymenoptera of Tanzania are poorly studied and remain underrepresented in collections. Highconfidence identifications are crucial for ecological and pollination studies. In Tanzania, the situation is particularly exacerbated by lack of expertise and financial resources. The Tanzanian partner will prepare voucher specimens of all taxa, prepare a catalog of the pollinators species of Tanzania, publish scientific papers, establish an open-access DNA barcode library (with barcode index numbers) for the country, and implement a Pollinator Lab at Mweka, all of which will improve the quality of training for future national scientists.

Training and capacity-building

The course was composed of lectures, laboratory works and field samplings in order to give a thorough overview of why and how to train students working on several selected groups of Hymenoptera and other pollinators can be used in biological evaluation and monitoring programs. The complementary experiences and specializations of the instructors contributed to the high-quality level of the course. All participants were trained to collect the groups studied in order to reach the best efficiency during fieldwork. An objective is to develop a modern collection of reference using the best international standards, and to provide knowledge allowing state-of-the-art mounting and study of the specimens.



Fig. 48. Collecting bees selectively on visited plants.
(Photo @ A. Pauly)

List of participants to the training

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- Ismail Mijai (CAWM) (ismailmijai@yahoo.com)
- Julius Lasway (CAWM) (jlasway@mwekawildlife.ac.tz)
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- Tito Jonathan Lanoy (CAWM)
- Zainabu Gnasi Issa (CAWM)
- Billy Jonathan Munisi (Field assistant)
- Stanslauss Lukiko (Beekeeping Training Institute - Tabora) (sblukiko@gmail.com)
- Good Luck Peter (TAWIRI) (goodluck_peter@hotmail.com)
- Violet Mathias (Tropical Pesticides Research Institute) (viola_temba@yahoo.com)
- Luseko Rueben Mshana (Ruaha National Park) (lusemshana@gmail.com)
- Bituro M. Paul (Field assistant, Beekeeping Training Institute - Tabora) (bituropaul1942@gmail.com)



Fig. 49. Sorting collected bees by genera in the Classroom. (Photo @ A. Pauly)

Follow-up

A new project is foreseen in 2019, if funding is provided, to continue the training and collection of specimens in Tanzania in collaboration with the JRS Foundation and the College of African Wildlife Management, Mweka (CAWM).

At the time we were writing this report (end of March 2018), the project in Mozambique had not taken place yet - see main text for the general context.

ANNEX 5: CAMPAGNE BATHYMETRIQUE IRHOB

REPUBLIQUE DU BENIN



**CENTRE BENINOIS DE LA RECHERCHE
SCIENTIFIQUE ET INNOVATION (CBRSI)**



**INSTITUT DE RECHERCHES
HALIEUTIQUES ET OCEANOLOGIQUES
DU BENIN (IRHOB)**

et

**INSTITUT ROYALE DES SCIENCES
NATURELLES DE LA BELGIQUE (IRSNB)**



ACTIVITE

CAMPAGNES BATHYMETRIQUES

**A LA CÔTE BENINOISE ET DE DEBIT DANS LE CHENAL DE
COTONOU (AUX ENVIRONS DE L'EMBOUCHURE)**

Mai 2017

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INTRODUCTION

a. Contexte et justification

La partie sud du Bénin s'ouvre sur l'océan Atlantique avec une façade maritime longue de 125 km qui s'étend de Hillacondji, frontière Bénin-Togo, à Sèmè-Kraké, frontière Bénin-Nigéria. Les dernières données de bathymétrie des côtes béninoises datent de 1964. Il s'agit des relevés faits lors de la campagne océanographique « OMBANGO » dirigée par Crosnier. A l'issue de cette campagne menée dans les eaux béninoises et togolaises, la carte des fonds du plateau continental du Bénin et du Togo a été réalisée. C'était sous la responsabilité de l'Office de la Recherche Scientifique et Technique d'Outre-Mer « ORSTOM ».

Pour mieux apprécier les fonds actuels du plateau continental du Bénin, il urge d'actualiser ces données bathymétriques afin de disposer une nouvelle carte bathymétrique du plateau continental béninois. C'est dans ce cadre que cette activité de relevés bathymétriques et de mesure de débit est initiée sur financement du Projet CEBioS de l'Institut Royale des Sciences Naturelles de Belgique (IRSNB) afin de pouvoir étudier les processus hydrodynamiques d'une part, et d'autre part, étudier les échanges hydrologiques entre les plans d'eau côtiers et l'océan atlantique. La collecte de ces données rentre dans le cadre du développement du modèle « COHERENS ». En effet, pour tourner ce modèle pour l'étude de la circulation océanique, nous avons besoin de quelques paramètres physico-chimiques.

b. Objectifs

L'objectif principal de la présente mission est de collecter les données sur les relevés bathymétriques sur une partie du plateau continental du Bénin et de débit aux environs du chenal de Cotonou.

MATERIELS ET METHODE

Le matériel utilisé est composé de :

- un échosondeur GPSmap 421s de marque Garmin ;
- deux batteries ou accumulateurs d'énergie ;
- un dispositif pour la fixation de l'échosondeur ;
- une vedette, (Photo 1) pour le déplacement en mer ;
- un ADCP Teledyne RD Instruments Workhorse Rio Grande 1200 kHz et
- un ordinateur portable pour le téléchargement et la visualisation des données collectées.

Cette mission s'est déroulée de la façon suivante :

- phase préparatoire pour l'organisation technique et matérielle de la mission ;
- phase de calibrage de l'échosondeur ;
- phase de calibrage de l'ADCP Teledyne RD Instruments Workhorse Rio Grande 1200 kHz ;
- phase de mission proprement dite de quatre jours, dont deux pour le débit et deux pour la bathymétrie ;
- phase de traitement et d'analyse des données.

Les relevés bathymétriques ont consisté à parcourir des radiales perpendiculaires à la côte, avec des intervalles de 500 mètres. La partie balayée se situe dans les environs de la bouée océanographique déployée à 6 km de la côte par l'IRHOB.

Les données de débit ont été collectées matin, midi et soir afin de voir son évolution diurne.

La mission s'est déroulée conformément à la méthodologie décrite ci-dessus.



a : Echosondeur avec la batterie



b : ADCP

Fig. 48a-48e



c : Préparation à quai



d : Départ pour la mer



e : Fixation du support de la sonde

Photo N°1 : Préparation de la sortie en mer

a. Phase préparatoire

Cette phase a consisté à l'organisation technique et matérielle de la mission et au calibrage de l'échosondeur et de l'ADCP. Les itinéraires à suivre ont été définis.

b. Deuxième phase : phase de terrain

Cette phase qui s'est déroulée du mercredi 1^{er} au jeudi 02 février pour le débit et du jeudi 27 au vendredi 28 avril 2017 pour la bathymétrie, a consisté à parcourir les stations suivant les radiales perpendiculaires à la côte (Fig. n°1 et n°2) pour l'enregistrement des données de débit et de bathymétrie.

Tout le dispositif est fixé sur la vedette avec la sonde maintenue dans l'eau pendant le déplacement. Sur le parcours, l'appareil procède à l'enregistrement des données de façon continue. Les informations collectées par l'appareil sont :

- les coordonnées géographiques à chaque point d'enregistrement ;
- la profondeur en mètre ;
- la distance parcourue d'un point ou d'une station à une autre ;
- la vitesse en kilomètre/heure de la pirogue pendant le déplacement ;
- la température de surface de l'eau ;
- le tracé de l'itinéraire (Fig. n°1) et d'autres informations relatives aux obstacles et substances présents dans l'eau.
- le tracé de l'itinéraire (Fig. n°2) de collecte des données de débit

Les données collectées sont dans un premier temps téléchargées de l'appareil à l'ordinateur, dans un second temps, elles sont exportées dans le tableur Excel pour être traitées et analysées avec les logiciels Surfer, Saga et ArcGis.

Les données de débit ont été extraites à partir du logiciel WinRiver.



Fig. N°49 : Itinéraire de collecte de données bathymétriques



Fig. N°50: Itinéraire de collecte des données de débit

RESULTATS

La Fig. 3 représente la carte bathymétrique de la zone balayée. Cette carte présente la situation actuelle des profondeurs de cette zone.

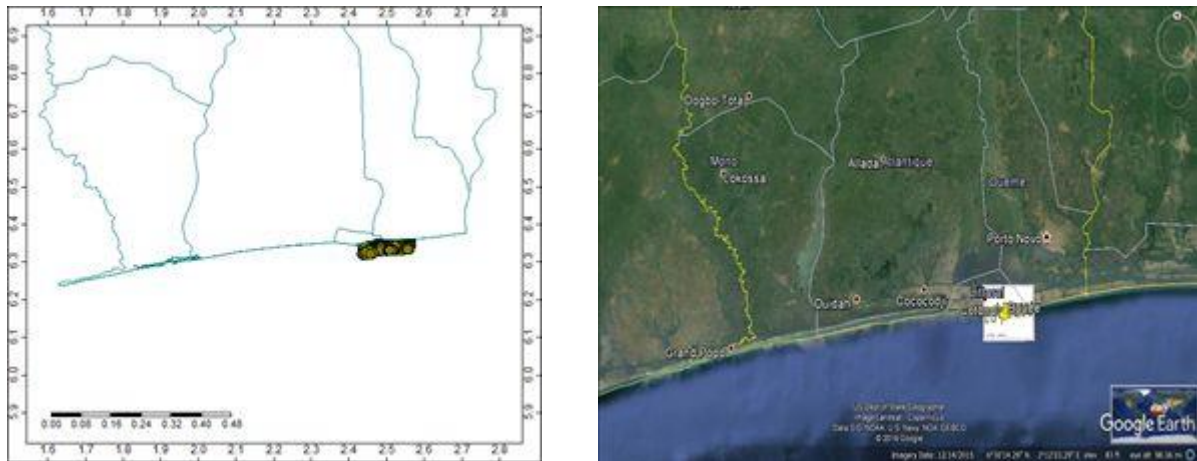


Fig. N°51: Projection de la trajectoire sur la carte du Bénin et sur Google Earth

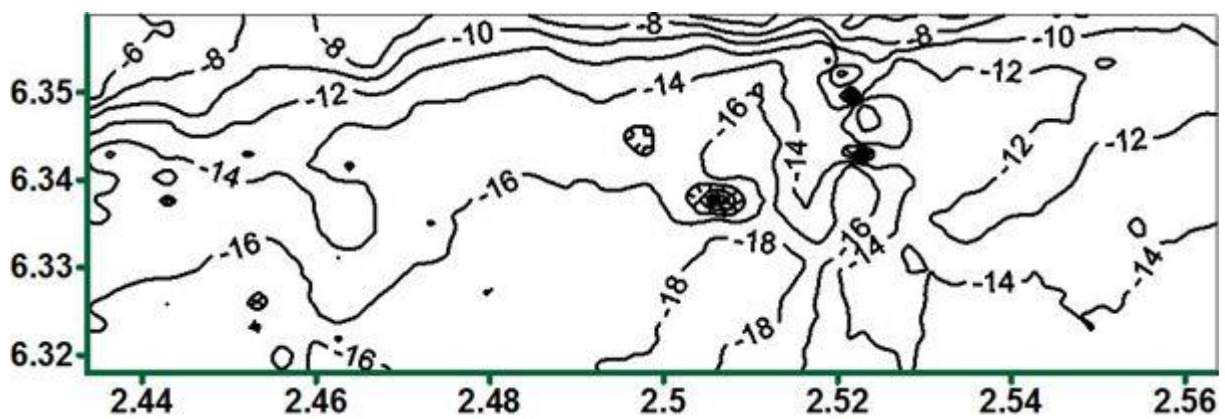


Fig. N°52 : Carte bathymétrique réalisée

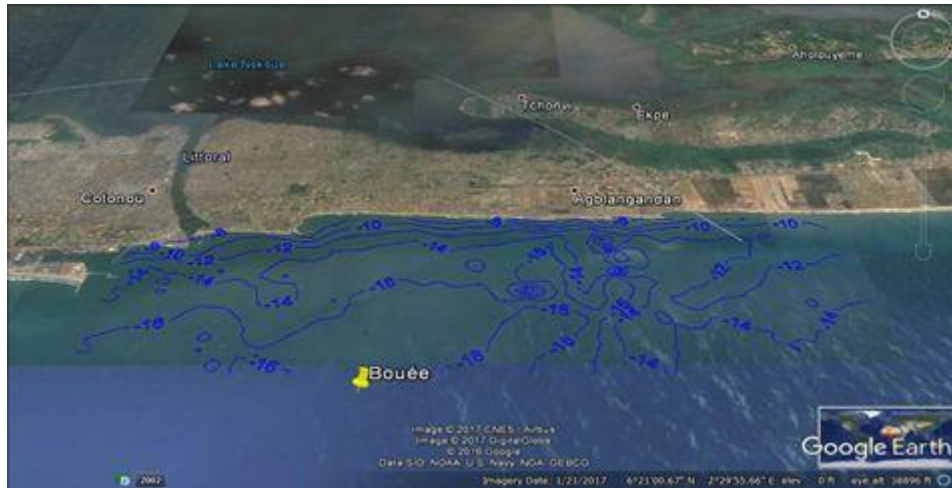


Fig. N° 53 : Carte bathymétrique projetée sur Google Earth

Les profondeurs enregistrées varient entre 8 et 19,9 m. La profondeur maximale est de 19,9 m et se situe un peu plus au large sur l'isobathe 6.32981 N x 2.50576. Au fur et à mesure qu'on se dirige vers le large à partir de la berge, la profondeur augmente, comme l'indiquent les Fig.s N°4 et 5.

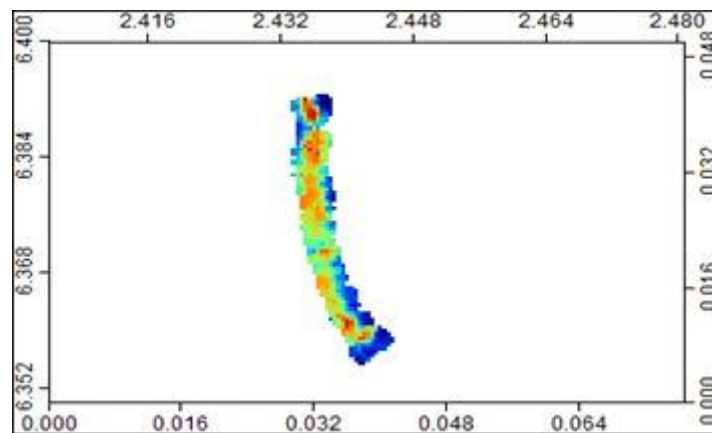
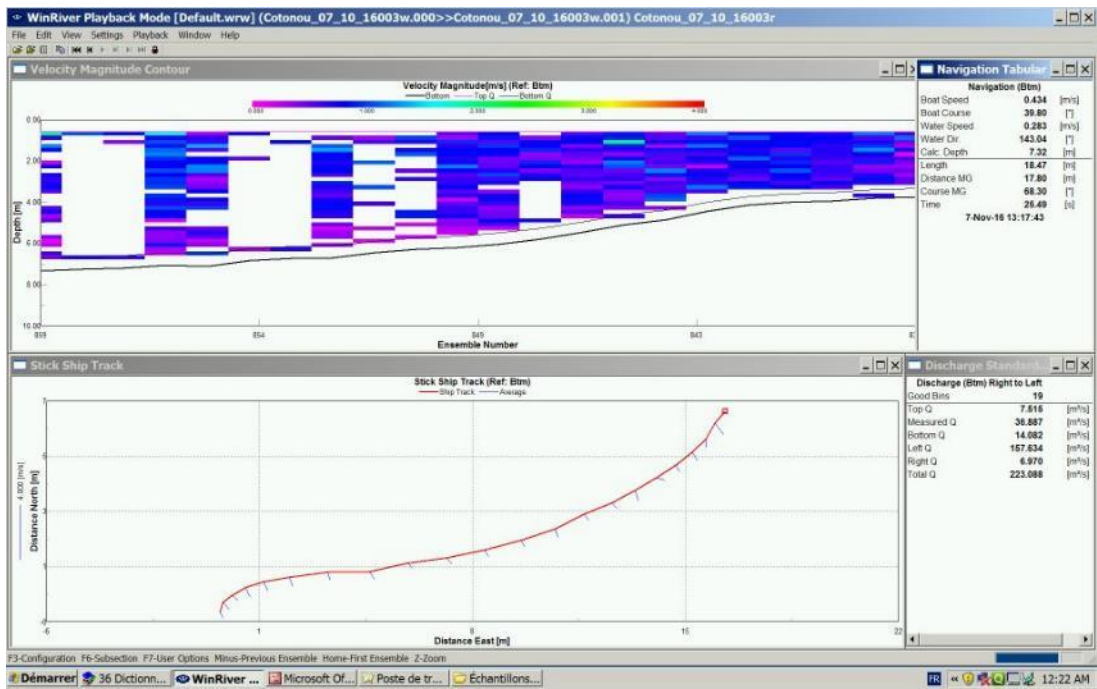


Fig. N°54 : Trajet de collecte de données de débit

La vitesse de la vedette est de 0,434 m/s tandis que celle de l'eau est de 0,283 m/s et le débit total est en moyenne de 223,08 m³/s soit Top Q 7,515 m³/s, Measured Q 36,887 m³/s, Bottom Q, 14,082 m³/s, Left Q 157,634 m³/s Right Q 6,970 m³/s (Fig. n°7).



8. **Fig. N°56:** Interface de WinRiver à la lecture des débits

CONCLUSION

9. En somme, les objectifs des missions sont atteints.

Les relevés bathymétriques dans la zone allant du Port Autonome de Cotonou (PAC) à l'embouchure de Cotonou ont été réalisées. Les relevés bathymétriques dans cette zone décrivent la topographie du fond dont la profondeur maximale est d'environ 19,9 m. Ces relevés bathymétriques donnent une idée sur la configuration du plateau continental à cet endroit ; ce qui correspond au profil relevé par Crosnier en 1964 lors de la campagne bathymétrique. Les données de débit ont été collectées pour combler le déficit d'information depuis des années. Ces données rentrent dans la base de données de l'IRHOB ; une longue série permettra de bien tourner correctement le modèle COHERENS.

Nos sincères remerciements à l'Institut Royal des Sciences Naturelle de la Belgique (IRSNB), à travers le programme CEBioS.