CEBioS

DGD-RBINS programme
Protocol of cooperation

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Operational Directorate Natural Environment
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REPORT 2015

Building capacities for biodiversity and development

Togo, commerce of butterflies (from culture), is it sustainable? (Photo@M.L. Susini Ondafe)

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Acronyms

AAU	Addis Ababa University, Ethiopia
ABS	Access and Benefit Sharing
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
DGD	Belgian Development Cooperation
EDIT	European Distributed Institute of Taxonomy
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
ISCNET	Institut Supérieur de Conservation de la Nature, de l'Environnement et du Tourisme , R.D. Congo
ISDR-GL	Institut Supérieur de Développement Rural des Grands Lacs, D.R. Congo
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
MATEE	Ministère de l'Aménagement du Territoire, de l'Eau et de l'Environnement, Morocco
MIST	Management Information System

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
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SDSN	Sustainable Development Solutions Network
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
ULB	Université Libre de Bruxelles, Belgium
ULg-GxABT	Université de Liège – Gembloux Agro-Bio Tech
UNIBU	Université du Burundi
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-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
VVOB	Vlaamse Vereniging voor Ontwikkelingssamenwerking en technische Bijstand, Belgium
WCMC	UNEP World Conservation Monitoring Centre

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Executive summary

2015: second year of five year plan 2014-2018

The year 2015 was quite intensive for CEBioS, with as culminating point the colloquium on 26 November 2015, 'Biodiversity and development, a global heritage' : http://www.biodiv.be/cebios2/events/biodiv-dev. CEBioS was present at several fora in Belgium with a new information booth and internationally active to promote the programme (e.g. fêtes de l'Europe, Bruxelles champêtre, SBSSTA, IAC-CHM, IPBES South Africa and India, CBD Brussels, Empowering Biodiversity Research Conference Brussels, Africa Rising: Mobilizing biodiversity data for sustainable development", Cape Town).

Per strategic objective

SO1 (knowledge, science)

Global taxonomy Initiative (GTI) and AbcTaxa

The 12th external GTI call for individual grants for taxonomic training was launched. 20 grantees from Benin (4), Burundi (1), Côte d'Ivoire (5), D. R. Congo (4), Morocco (2), Togo (1), Uganda (2) and Vietnam (1) 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 12th internal GTI call for training in the South, researchers from RBINS had projects in Benin (Oligochaetes), Ivory Coast (insects), Vietnam (entomo-diversity), DR Congo & Benin (amphibians and reptiles), and South Africa (algae and echinoderms).

AbcTaxa volume 14 was awarded as the best bryological publication for the years 2013-2014 by the International Association of Bryologists. The volume 15 on sawflies of Namibia and western South Africa was published in 2015.

Institutional Cooperation

Cooperation in RD Congo with ICCN, universities and CSB

In D.R. Congo, the cooperation with ICCN was strengthened through several consultations and continued through two missions combining UNIKIN, and UNILU, as well as contacts with the Parc Marin des Mangroves to explore a new cooperation. With UNILU, some consultations were made at decision-making level to secure the clear forest reserve of Luswishi. Moreover, with our partners at UNILU, we focused on the quantification and monetization of ecosystem services provided by termites and the study of the species diversity of termites and on their inter- and intra-specific behavior in the ecosystem of miombo (clear forest typical for Katanga). Habitat monitoring and the drafting of the manual entitled "Habitats Nature Reserve Itombwe" has made significant progress. A study was launched as the first step in the process of domestication of wild mushrooms from the Parc National des Virungas. Local actors of the Bombo Lumene reserve were trained to conduct observations on the regeneration of the forest. Following the call launched by the Belgian Federal Science Policy (BELSPO) concerning the international networking of its Scientific institutions (including the Royal Institute of Natural Sciences of Belgium), the project entitled « Création d'un Réseau des Mycologues de la Région des Grands Lacs

d'Afrique» was awarded (to start in 2016). The **cooperation with UNIKIS and CSB** is supporting three scientists, working on bats, salmonnellosis and bush meat, and resulted in 2015 in several seminaries and publications.

Marine modelling in Peru and Vietnam

CEBioS organised a project formulation in **Vietnam** for a three year cooperation 2015-2017 with IMER on marine modelling. The cooperation with IMARPE on marine modelling in **Peru** was in its second year of implementation, with training of staff at RBINS.

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

Unfortunately most **interventions with Burundi** were on hold due to the difficult political situation which started in April 2015. Despite this, work progressed on e.g. the lexicon on Kibira National park, the CHM, the scientific bulletin and strengthening OBPE.

The **institutional cooperation with Université Abomey-Calavi in Benin** was in its second year of implementation, and CEBioS made a joint field visit to the study site, as well as an informal mid-term evaluation in February 2016. The 'Laboratoire d'Ecologie Appliquée' (LEA) of the 'Université Abomey-Calavi' (UAC, Benin) realised most objectives as outlined in the logframe and the annual plan for 2015. Vegetation and animals have been recorded in the local languages Waama, Biali and Gourmantché as a preparation for a lexicon, which is in final draft in good progress and will be published and presented to stakeholders in 2016. Past research results on bush fire and pastoralism were synthesised and presented to the managers of Pendjari National Park (PNP). The 'écogardes' were trained in situ on sampling plants and recognising main vegetation types, as well as on technical aspects of fire management. Two master students have finalised their thesis on certain aspects of fire management and termites in protected areas and two other students have started their research. This resulted in two submitted publications.

<u>External projects in Burundi and Tanzania</u>

Despite 3 attempts to plan a mission, the South initiative (VLIR-UOS) with UB and OBPE in **Burundi** was kept on hold due to the political situation. CEBioS organised the launch workshop of the external VLIR-UOS North South South project in **Tanzania** about the development of an integrated management plan for Lake Manyara and started a cooperation on socio-economic survey with the Belgian NGO TRIAS (to be implemented in 2016).

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. A **regional CHM workshop for Anglophone** partners was organised in Tanzania. CEBioS participated in **national CHM workshops** in DR Congo, Tanzania and Togo as well. CEBioS was active in the further development of the Aichi targets tool in the framework of the EU, as well as several international CBD meetings concerning the development of CHM (new software, awards, ...). CEBioS provided an intensive training to the 'Centre de Surveillance de la Biodiversité du bassin du Congo, CSB', in **Kisangani**, DR Congo. Three modules were given : scientific communication, data mining, CHM and the development of a secondary CHM with provincial antennae. Two **in house CHM trainings** were given for 6 persons : CHM N° 27 for 2 persons from Irak, and CHM N° 28 for 4 persons from Guinee-Bissau (1), Mali (1) en Togo (2). Several demands came to use the digitalised historical archives at RBINS for Virunga N.P. and for Fonds Leopold III.

SO3 (awareness)

A **call 'public awareness'** was launched for the partner countries. CEBioS contributed to the graphic design of the **book** 'Hasson, M., 2015. Katanga. Des animaux et des hommes, vol. 1 en 2.' In cooperation with MRAC. In the framework of the European Year for Development, a new **booth** on Biodiversity and Development was created and the **symposium** 'Biodiversity and Development: a global heritage' gathering over 25 speakers, 30 posters/booths and ca. 170 participants took place on November 26th at RBINS with the presence of Minister Alexander De Croo.

SO4 (policy mainstreaming)

CEBioS provided **environmental indicators** to the indicative joint cooperation programme of DGD with **Mali**, and reviewed for DGD the last UNEP strategy and a cooperation on green energy in **Rwanda**. The **cooperation with KLIMOS** (the DGD ACROPOLIS project on sustainable development) was very fruitful, with (1) a joint **training to the DGD and BTC** functionaries in Brussels, (2), the further development of the **KLIMOS toolkit** with biodiversity indicators, and (3) cooperation in a **paper** published in Scientometrics about the 'matata-effect' or the possible discrimination in the publication circuits for scientists from developing countries, as well as the preparation of a conceptual paper on the use in ODA of Environmental Impact Assessment, to be submitted in 2016.

CEBioS participated to an **IPBES meeting** about a scoping paper on Africa **in S. Africa** and to a capacity building round table **in India** (1st IPBES Capacity-building Forum that took place in Dehradun, India from 19 to 22 October 2015). Both benefited from the generous financial support from BELSPO to attend these meetings. CEBioS also participated to a CBD **round table about capacity building** in Brussels. CEBioS was active at **SBSSTA-19** as well, including participation in a side event on MRV.

SO5 (MRV)

The first **MRV call** has been successfully launched. An opening workshop with participants from the South was held at RBINS, involving capacity building by own and external expertise. Nine persons from Benin (4), Burundi (2), DRCongo (2) and Morocco (1) came to RBINS to participate in a one week **opening workshop** about their MRV projects.

SO6 (Nagoya Protocol)

CEBioS and NFP organised **several training sessions** at RBINS and MRAC concerning the Nagoya Protocol. OBPE organised information sessions in Burundi.

SO7 (coordination and management)

The staff has been enlarged with the **recruitment of two new scientists**, Dr. Maarten Vanhove and ir. Anne-Julie Rochette, who from January 2015 onwards, specifically focused on SO5 (MRV, lead)) and SO6 (Protocol of Nagoya, co-lead).

CEBioS organized 6 BIOPOLS meetings as well. Planning of 2016 and reporting of 2015 went smoothly. Integration into the **management cycle** of DO Nature was carried out, as well as active involvement in a mission to Denmark with RBINS to identify EU strategic objectives for European natural history museums. CEBioS participated in the ACNG exercise of drafting joint context analyses for DRC, Burundi and Benin in order to mainstream biodiversity in a spirit of finding future synergies with other Belgian actors.

The functioning of CEBioS in 2015, which is the second year of the five year plan 2014-2018, has reached 80% expenses before December 2015 (at the time of this first draft, February 2016, expenditure reached 95 %). The enhanced visibility and connection of the CEBioS programme with external actors and projects promoted a giving dynamics of cooperation and expertise development.

Luc Janssens de Bisthoven, coördinator, 13-05-2016

Part I - The year in brief

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:

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 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)
- education and public awareness (Article 13)
- the transfer of technology (Article 16)
- the exchange of information (Article 17)
- the promotion of scientific and technical cooperation (Article 18)

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.

Main milestones in 2015

1 JANUARY TO 31 DECEMBER 2015	
19-24 January	27th training session for CHM administrators, Brussels. 2 participants from Iraq (paid by Iraq), given by Han de Koeijer and Marie-Lucie Susini.
4-11 January	Mission by Han de Koeijer to the "Office Burundais de la Protection de l'Environnement" to participate in a stakeholder meeting on Ecosystem Services, close the activities from 2014 and prepare the 2015 annual plan.
18 February	OECD: Luc Janssens de Bisthoven invited to participate to debate about "Mainstreaming biodiversity into development cooperation", Paris
2 March	First information meeting on the implications of the entry in to force of the Nagoya Protocol for scientists of RBINS by Han de Koeijer, Anne Julie-Rochette and Maarten Vanhove in cooperation with the National Focal point CBD.
7 – 15 March	Organisation by Han de Koeijer and Marie-Lucie Susini of the Regional Workshop for Anglophone partner countries of the Belgian CHM, Dar Es Salaam, Tanzania (Countries: Ghana, Kenya, Liberia, Rwanda and Tanzania)
09 - 13 March	M-L Susini and Han de Koeijer participated in the 'Regional CHM workshop for Anglophone partners of the CEBioS programme, Dar Es Salaam, Tanzania'
23 March – 3 April	28th training session for CHM administrators, Brussels. 4 participants from Guinea-Bissau (1), Mali (1) and Togo (2), given by Han de Koeijer and Marie-Lucie Susini.
13 May	CEBioS has a booth at the Europe Day (Development Village at the Esplanade of the European Parliament, Brussels), in the framework of the European Year for Development 2015.
19-22 May	Anne-Julie Rochette gives an oral presentation and presents a poster at the conference "Africa Rising: Mobilising Biodiversity Data for Sustainable Development" in Cape Town, South Africa.
12 – 16 May	Participation by Han de Koeijer, as expert, in UNEPs Second Multi-Stakeholder Expert Meeting on Elaboration of options for enhanced cooperation and Synergies among Biodiversity-Related Multilateral Environment Agreements, Geneva, Switzerland.
21 May	Participation by Han de Koeijer, Marie-Lucie Susini and Maarten Vanhove in Biodiversity informatics Conference ("Empowering Biodiversity Research"), Brussels. Poster presentation on 2020 TCT reporting tool by Han de Koeijer

8 June	Second information meeting on the implications of the entry in to force of the Nagoya Protocol for scientists of RMCA by Han de Koeijer, Anne Julie-Rochette and Maarten Vanhove
15-16 June	Participation by Han de Koeijer in the EU CHM working group meeting on the 2020 TCT reporting tool, Copenhagen, Denmark.
18 June – 4 July	Mission of Maarten Vanhove to the D.R.Congo for meeting with various CEBioS partners in Kinshasa and (former) Bas-Congo province, and capacity building and Central African networking workshop on ichthyo(parasito)logy, co-organised by the development cooperation programmes of RBINS, RMCA and ISP Mb-Ng, IRD and CRH-U.
7 – 10 July	National CHM training for the use of the PTK, Arusha, Tanzania with M-L Susini and Han de Koeijer as trainers.
27 - 30 July	M-L Susini participated in the conference entitled 'Building Capacity for Conservation & Resource Management in Africa' that took place at the Desmond Tutu Conference Centre, in Nairobi, Kenya.
5-13 July	National CHM training for the use of the PTK, Arusha, Tanzania by Han de Koeijer and Marie-Lucie Susini.
14-20 July	National CHM training for Myanmar, Naypyidaw, Myanmar by Han de Koeijer, financed by GEF
27 - 30 July	M-L Susini participated in the conference entitled 'Building Capacity for Conservation & Resource Management in Africa' that took place at the Desmond Tutu Conference Centre, in Nairobi, Kenya.
1 – 9 August	Mission of Maarten Vanhove to Pretoria (South Africa) to participate as a Lead Author in the first author meeting of the IPBES RA on BES for Africa, and to meet with potential CEBioS partners in Pretoria.
09 September	M-L Susini attended the seminar entitled 'Cartographie de la coopération internationale et pistes d'action future pour la coopération belge au Burkina Faso' organised by the DGD at Palais d'Egmont, Brussels.
12-19 September	Participation by Han de Koeijer in "Informal Advisory Committee on Capacity-building for the Implementation of the Nagoya Protocol", Se CBD, Montreal, Canada
20 September	CEBioS has a booth at Bruxelles Champêtre/Landelijk Brussel.

28 September – 2 October	Opening workshop of the 2015 call on MRV of biodiversity and biodiversity policy at the RBINS in Brussels.
7-17 October	National CHM training for the use of the PTK and training in scientific writing and reporting at the Centre de Surveillance de la Biodiversité du Bassin du Congo (CSB), Kisangani, DR Congo by Han de Koeijer Luc Janssens and Maarten Vanhove, and assisted by Hilde Keunen (RMCA, freelance) for meeting with various CEBioS partners in Kinshasa (e.g. VVOB) and with a central focus devoted to the provincial antennae for biodiversity of the D.R.Congo.
19 -22 October	M-L Susini took part in 'the 1st IPBES Capacity-building Forum' as Belgian expert. The meeting took place in Dehradun, India. It was co-hosted by the Wildlife Institute of India and the National Biodiversity Authority of India. ML Susini's mission was funded by BELSPO.
28 October	M-L Susini participated in the roundtable discussion entitled 'Biodiversity for Poverty Eradication and Development, 2015-2018" held in Brussels, Belgium. She gave a presentation on 'Mainstreaming Biodiversity in developing countries: the case of Belgium'.
28 October – 8 November	Participation by Han de Koeijer in the CHM-IAC meeting and SBSTTA 19, Montreal, Canada
26-27 October	CEBioS (Maarten Vanhove, replacing Luc Janssens de Bisthoven) participates within the RBINS delegation in a mission to Copenhagen, Denmark, for a meeting among the seven largest natural history museums, to discuss a common research agenda.
14-17 December	National CHM training for the use of the PTK, Lomé, Togo by Han de Koeijer and Marie-Lucie Susini.
16-17 November	KLIMOS and CEBioS (Luc Janssens de Bisthoven, Anne-Julie Rochette, Han de Koeijer, Maarten Vanhove) organise a training on biodiversity for civil servants at DGD.
26 November	Public awareness event "Biodiversity and Development, a global heritage" organised at RBINS (Brussels) by CEBioS and various partner institutions, with Minister A. De Croo, gathering over 25 speakers, 30 posters/booths and ca. 170 participants.
6-11 December	Luc Janssens de Bisthoven and Maarten Vanhove participate in a scoping/exploration mission to Arusha and Mto-wa-Mbu (Tanzania) in the framework of a VLIR-UOS North South South-project on integrative management of the Lake Manyara Sub basin, co-organising a stakeholder workshop with scientific and NGO partners from Tanzania, South Africa, Zimbabwe and Belgium.

Where we work

In 2015, we worked with 12 + Lebanon, Myanmar countries around the world, implementing capacity building activities ranging from individual and group training to helping partner institutions manage their day-to-day activities.

Fig. 1. World map showing places of interventions of the CEBioS programme (left) and projects with external funding (right)

Fig. 2. Formulation workshop in Vietnam, IMER

Expenditure

Introduction

Table 1 shows the expenses per continent and SO (expenses in Belgium are hence not included). More than 90% of our (non-Belgium) funds targeted African institutions and grantees, with a specific focus on our partnerships in DR Congo, Burundi and Benin. Such structural partnerships benefit from support in the form of training activities in Belgium or *in situ*, of continuous e-coaching / distance training, of grants for small equipment or for activities *in situ*.

As in previous years, a smaller proportion of activities were undertaken with Central and South American and Asian countries, mainly for taxonomy or marine modelling. Support to these regions was essentially provided in the form of research and training in Belgium or research, workshops and training *in situ*.

Table 1. Expenses (%) per continent for the 6 strategic objectives in 2015.

Tableau de synthèse				
SO	Africa	Asia	South America	Total/SO
SO 1	248,858.73 €	19,798.62 €	13,253.43 €	**281,910.78 €**
SO 2	117,772.57 €	0.00 €	0.00 €	**117,772.57 €**
SO 3	89,628.96 €	0.00 €	0.00 €	**89,628.96 €**
SO 4	0.00 €	0.00 €	0.00 €	**0.00 €**
SO 5	19.470.83 €	0.00 €	0.00 €	**19,470.83 €**
SO 6	0.00 €	0.00 €	0.00 €	**0,00 €**
Coord & manag	0.00 €	0.00 €	0.00 €	**0.00 €**
TOTAL	**475,731.29 €**	**19,798.62 €**	**13,253.43 €**	**508,783.34 €**
% continent	**93.50**	**3.89**	**2.60**	**100.00**

Expenditure analysis

For all large posts (representing 961095 Euro or 89 % of total budget without structural costs), the maximum 15% deviation rule was respected. Some smaller posts (11% of total) saw larger deviations, which will be compensated in the next years of the multi-annual scheme. Deviations are explained below per Strategic Objective.

Table 2: expenses for all strategic objectives in 2015 (stand: 13 May 2016).

	Budget	engaged	Realised	open	balance	% used
SO 1 – Strengthen the scientific and technical knowledge base						
ER 1.1 – Scientific and technical expertise is built	56,250.00 €	91,410.94 €	91,467.46 €	0,00 €	-35,160.94 €	162.51
ER 1.2 – Quality scientific knowledge is produced	200,500.00 €	181,540.13 €	173,830.13 €	7,710.00 €	18,959.87 €	90.54
ER 1.3 – Monitoring data yield indicators	20,000.00 €	18,889.95 €	15,689.95 €	3,200.00 €	1,110.05 €	94.45
ER 1.4 – Scientific outputs accessible	35,000.00 €	965,59 €	965,59 €	0,00 €	34,034.41 €	2.76
Salaries M.-L. Susini, F. Muhashy, M. Vanhove, K. Baetens, K. Vrancken (6+12+2+6+3 pm)	144,863.00 €	142,246.87 €	142,246.87 €	0.00 €	2,616.13 €	98.19
Total	**456,613.00 €**	**435,053.48 €**	**424,200.00 €**	**10,853.48 €**	**21,559.52 €**	**95.28**
SO 2 – Enhance the information base						
ER 2.1 – Expertise in information management is built	50,000.00 €	40,411.39 €	39,426.39 €	985.00 €	9,588.61 €	80.82
ER 2.2 – Information flows are improved	50,000.00 €	46,556.59 €	41,620.59 €	4.936.00 €	3,443.41 €	93.11
ER 2.3 – Information used in governance	25,000.00 €	34,025.86 €	34,025.86 €	0,00 €	-9.025.86 €	136.10
Equipment ICT & technical development	3,000.00 €	8,145.72 €	8,145.72 €	0,00 €	-5,145.72 €	271.52
Salaries M.-L. Susini, H. de Koeijer, K. Vrancken (5+6+3 p	65,285.00€	66,203.51 €	66,203.51 €	0.00 €	-918,51 €	101.41
Total	**193,285.00 €**	**195,343.07 €**	**189,422.07 €**	**5,921.00 €**	**-2,058.07 €**	**101.06**
SO 3 – Contribute to awareness raising						
ER 3.1 – Baselines provide insight on awareness level	30,000.00 €	19,915.00 €	17,923.00 €	1,992.00 €	10,085.00 €	66.38
ER 3.2 - Awareness and engagement are raised	60,000,00 €	69,533.96 €	60,139.36 €	9,394.60 €	-9,533.96 €	115.89
ER 3.3 – Communication and awareness raising in Belgium	15.000,00 €	13,869.92 €	13,269.92 €	600,00 €	1,130.08 €	92,47
Salaries M.-L. Susini, H. de Koeijer, M. Vanhove, K. Vrancken (1+4+3+6 pm)	48,219.00 €	51,292.46 €	51,292.46 €	0.00 €	-3,073.46 €	106.37
Total	**153,219.00 €**	**154,611.34 €**	**142,624.74 €**	**11,986.60 €**	**-1,392.34 €**	**100.91**
SO 4 – Improve the mainstreaming of biodiversity						
ER 4.1 – Expertise of Belgian Dev. Coop. built	8,000.00 €	33,60 €	33,60 €	0.00 €	7,966.40 €	0.42
ER 4.2 – Biodiversity is mainstreamed in BDC activities	10,000.00 €	0,00 €	0,00 €	0,00 €	10,000.00 €	0.00
Salaries L. Janssens de Bisthoven + H. de Koeijer (6+2 pm)	48,441.00 €	51,967.02 €	51,967.02 €	0,00 €	-3,526.02 €	107.28
Total	**66,441.00 €**	**52,000.62 €**	**52,000.62 €**	**0,00 €**	**14,440.38 €**	**78.27**
SO 5 – Improve Knowledge on MRV (& indicators)						
ER 5.1 – Expertise of DGD and RBINS built	3,000.00 €	82,80 €	82,80 €	0,00 €	2,917.20 €	2,76
ER 5.2 – Methodologies are available	28,000.00 €	19,481.63 €	19,481.63 €	0,00 €	8,518.37 €	69,58
Salaries M. Vanhove, A.-J. Rochette (2+9pm)	36,766.00 €	38,300.24 €	38,300.24 €	0.00 €	-1,534.24 €	104.17
Total	**67,766.00 €**	**57,864.67 €**	**57,864.67 €**	**0,00 €**	**9,901.33 €**	**85.39**
SO 6 – Raise awareness & built capacities on ABS NP						
ER 6.1 – DGD and RBINS familiar with Nagoya Protocol	5,000.00 €	10,40 €	10,40 €	0,.00 €	4,889.60 €	0,21
ER 6.2 – Awareness is raised	10,000.00 €	11,509.42 €	10,712.42 €	797,00 €	-1,509.42 €	115,09
Salaries M. Vanhove (2 pm)	16,503.00 €	12,472.56 €	12,472.56 €	0.00 €	4,030.44 €	75,58
Total	**31,503.00 €**	**23,992.38 €**	**23,195.38 €**	**797.00 €**	**7,510.62 €**	**76,16**
SO 7 – Coordination and management						
ER – Programme is efficiently, effectively managed	2,000.00 €	1,542.83 €	1,542.83 €	0.00 €	457,17 €	77.14
Salaries L. Janssens de Bisthoven, V. Pinton, M. Agarad (6+12+12pm)	109,259.00 €	116,409.14 €	116,409.14 €	0.00 €	-7,150.14 €	106.54
Total	**111,259.00 €**	**117,951.97 €**	**117,951.97 €**	**0.00 €**	**-6,692.97 €**	**106.02**
TOTAL GENERAL	1,080,086.00 €	1,036,817.53 €	1,007,259.45 €	29,558.08 €	43,268.47 €	95.99
Structural costs (1GDGCD2)						
Calculated with TMA of 7,75%	87,300.00 €	87,300.00 €	87,300.00 €	0,00 €	0,00 €	100.00
TOTAL GENERAL WITH STRUCTURAL COSTS	1,167,386.00 €	1,120,517.63 €	1,094,559.45 €	29,558.08 €	43,268,47 €	95.99

The implementation of the year plan 2015 started in January. By December 2015, we attained a budget execution rate of >80 % and by February 2016, 95%.

Due to the multi-year format of the programme, the remaining annual balances will be added to the 2016 budget and beyond (see annual plan 2016).

The distribution of expenses per type of activity

Table 3: Expenses for salaries, operations and equipment in 2015 (stand March 2016).

2015	Budget	Engaged	Realised	Open	Balance	% used
Salaries	469,336.00 €	478,891.80 €	478,891.80 €	0.00 €	-9,555.80 €	102.04
Operations	607,750.00 €	535,574.10 €	493,866.16 €	41,707.94 €	72,175.90 €	88.12
Equipment	3,000.00 €	8,145.72 €	0.00 €	8,145.72 €	-5,145.72 €	271.52
Total without structural costs	1,080,086.00 €	1,022,611.62 €	972,757.96 €	49,853.66 €	57,474.38 €	94.68
Structural costs	87,300.00 €	87,300.00 €	87,300.00 €	0.00 €	0.00 €	100.00
Total with structural costs	**1,167,386.00 €**	**1,109,911.62 €**	**1,060,057.96 €**	**49,853.66 €**	**57,474.38 €**	**95.08**

Points of comments:

- All justifications of expenses 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 general tables.
- Equipment: 5145 € were spent more than the budget of 3000 €, because we it was planned to invest in a server with more capacities every 3 years, so it should be seen on the multi-annual budget.

SO 1 – Strengthen the scientific and technical knowledge base

Table 4: Expenses for SO1 in 2015.

	Budget	engaged	Realised	open	balance	% used
SO 1 – Strengthen the scientific and technical knowledge base						
ER 1.1 – Scientific and technical expertise is built	56,250.00 €	91,410.94 €	91,467.46 €	0,00 €	-35,160.94 €	162.51
ER 1.2 – Quality scientific knowledge is produced	200,500.00 €	181,540.13 €	173,830.13 €	7,710.00 €	18,959.87 €	90.54
ER 1.3 – Monitoring data yield indicators	20,000.00 €	18,889.95 €	15,689.95 €	3,200.00 €	1,110.05 €	94.45
ER 1.4 – Scientific outputs accessible	35,000.00 €	965,59 €	965,59 €	0,00 €	34,034.41 €	2.76
Salaries M.-L. Susini, F. Muhashy, M. Vanhove, K. Baetens, K. Vrancken (6+12+2+6+3 pm)	144,863.00 €	142,246.87 €	142,246.87 €	0.00 €	2,616.13 €	98.19
Total	**456,613.00 €**	**435,053.48 €**	**424,200.00 €**	**10,853.48 €**	**21,559.52 €**	**95.28**

Points of comment:

- ER 1.1. : dépense 162% : Nous avions prévu d'accueillir 15 stagiaires. C'est seulement au moment de l'évaluation que nous avons décidé d'en accueillir 20. C'est parce qu'il y avait un reliquat conséquent sur le budget 2014 que nous avons accepté qu'on alloue plus d'argent à ce volet en 2015. Cela se justifie par le fait que si on avait pris seulement 15 stagiaires en 2015, presque la totalité d'entre eux auraient été des stagiaires de 2014 et donc il n'y aurait pas eu de nouveau candidat. Or en ajoutant 5 places, cela nous a permis d'avoir de nouveaux bons éléments comme Hamed Odountan du Bénin, et des stagiaires venant de pays où on souhaite éventuellement travailler plus à l'avenir (Afrique de l'Est) comme les 2 stagiaires ougandais de Wouter Dekoninck.
- ER 1.2.: one GTI project on reptiles exceeded the budgeted mission costs (4000 euro) till 6600 Euro because the planned mission concerned both Benin and RDC as negotiated. Another GTI project in South Africa adavnced all costs during the mission and hence posted the operational and mission expenses on mission. Further, for the cooperation with RDC, some saldo from 2014 (8200 Euro) was spent in 2015 as well. For the cooperation with Kisangani, some mission costs were not used as they were provided by a VLIR –IUS programme at UNIKIS. The formulation mission in Vietnam (marine modeling) has been allocated to remnants from 2014, hence creating some underspending in 2015.
- ER 1.4. : expenses 2,7% : a volume of AbcTaxa has been published in 2015, but still on an engagement taken in 2014. Three lexica (Bénin, RDC, Burundi) are in advanced state, but could not be printed in 2015. For Burundi, it is due to the security situation. For Bénin, it is due to the late start of the project in 2014. Moreover, the budgets for the posts ER 142 will be used in 2016 for generating output material from the projects of previous years.

SO 2 – Enhance the information base

Table 5. Expenses for SO2 in 2015.

SO 2 – Enhance the information base						
ER 2.1 – Expertise in information management is built	50,000.00 €	40,411.39 €	39,426.39 €	985.00 €	9,588.61 €	80.82
ER 2.2 – Information flows are improved	50,000.00 €	46,556.59 €	41,620.59 €	4.936.00 €	3,443.41 €	93.11
ER 2.3 – Information used in governance	25,000.00 €	34,025.86 €	34,025.86 €	0,00 €	-9.025.86 €	136.10
Equipment ICT & technical development	3,000.00 €	8,145.72 €	8,145.72 €	0,00 €	-5,145.72 €	271.52
Salaries M.-L. Susini, H. de Koeijer, K. Vrancken (5+6+3 p	65,285.00€	66,203.51 €	66,203.51 €	0.00 €	-918,51 €	101.41
Total	**193,285.00 €**	**195,343.07 €**	**189,422.07 €**	**5,921.00 €**	**-2,058.07 €**	**101.06**

Points of comment:

- ER 2.1.: 80% expenses: some individual projects spent less than expected. The Rwanda project decided not to take the funds because of other external funds.
- ER 23: the regional meeting for west Africa, held in Febr. 2016 and posted on the 2015 budget saw more CHM member states as planned in the five year programme, hence the

increase. It also included an evaluation of the cooperation with IUC (8100 instead of 3000 Euro).

- ER 24: Equipment ICT & technical development: 271% expenses is due to the acquisition of a server with higher capacities.

SO 3 – Contribute to awareness raising

Table 6. Expenses for SO3 in 2015.

SO 3 – Contribute to awareness raising						
ER 3.1 – Baselines provide insight on awareness level	30,000.00 €	19,915.00 €	17,923.00 €	1,992.00 €	10,085.00 €	66.38
ER 3.2 - Awareness and engagement are raised	60,000,00 €	69,533.96 €	60,139.36 €	9,394.60 €	-9,533.96 €	115.89
ER 3.3 – Communication and awareness raising in Belgium	15.000,00 €	13,869.92 €	13,269.92 €	600,00 €	1,130.08 €	92,47
Salaries M.-L. Susini, H. de Koeijer, M. Vanhove, K. Vrancken (1+4+3+6 pm)	48,219.00 €	51,292.46 €	51,292.46 €	0.00 €	-3,073.46 €	106.37
Total	**153,219.00 €**	**154,611.34 €**	**142,624.74 €**	**11,986.60 €**	**-1,392.34 €**	**100.91**

Points of comment:

- ER 3.1.: 66% expenses: some individual projects spent less than expected and there weren't enough projects submitted to the call. This will change in 2016 as we will make it mandatory to carry out a baseline study for new countries. One project had a considerable delay in signing the contract due to local administrative difficulties, hence influencing the total spending on ER.

SO 4 – Improve the mainstreaming of biodiversity

Table 7. Expenses for SO4 in 2015.

SO 4 – Improve the mainstreaming of biodiversity						
ER 4.1 – Expertise of Belgian Dev. Coop. built	8,000.00 €	33,60 €	33,60 €	0.00 €	7,966.40 €	0.42
ER 4.2 – Biodiversity is mainstreamed in BDC activities	10,000.00 €	0,00 €	0,00 €	0,00 €	10,000.00 €	0.00
Salaries L. Janssens de Bisthoven + H. de Koeijer (6+2 pm)	48,441.00 €	51,967.02 €	51,967.02 €	0,00 €	-3,526.02 €	107.28
Total	**66,441.00 €**	**52,000.62 €**	**52,000.62 €**	**0,00 €**	**14,440.38 €**	**78.27**

Points of comment:

- ER 4.1.: unspent because the activities in 2015 were in Belgium and did not require spending, such as integrating biodiversity in KLIMOS toolkit, working on a paper with KLIMOS on Environmental Impact Assessment, or in house training of functionaries of DGD and BTC. There were also no political conferences in 2015 (COP). Any balances will be used in the COP year 2016 by the team.

- ER 4.2.: unspent because reviewing documents does not cost and drawing rights from embassies is a starting (and learning) process. Embassies now start to react to the planning of CEBioS. This post should be better spent in the next years.
- In 2016-2017 CEBioS could organise introductory workshops with embassies and stakeholders in cooperation with KLIMOS for e.g. Burkina Faso, Guinée Conakry, Palestina and Algeria and others. Regional workshops are possible, to be discussed with DGD.

SO 5 – Improve knowledge on MRV (& indicators)

Table 8: Expenses for SO5 in 2015.

SO 5 – Improve Knowledge on MRV (& indicators)						
ER 5.1 – Expertise of DGD and RBINS built	3,000.00 €	82,80 €	82,80 €	0,00 €	2,917.20 €	2,76
ER 5.2 – Methodologies are available	28,000.00 €	19,481.63 €	19,481.63 €	0,00 €	8,518.37 €	69,58
Salaries M. Vanhove, A.-J. Rochette (2+9pm)	36,766.00 €	38,300.24 €	38,300.24 €	0.00 €	-1,534.24 €	104.17
Total	**67,766.00 €**	**57,864.67 €**	**57,864.67 €**	**0,00 €**	**9,901.33 €**	**85.39**

Points of comment:

- ER 5.1.: the 3000 € were left unspent, since the staff responsible for MRV was only recruited in 2015, ER 5.1. activities (e.g. congress South Africa) was spent on the unspent 2014 budget.
- ER 5.2.: 69% spending: one MRV project (Morocco) had a considerable delay in signing the contract due to local administrative difficulties, hence influencing the total spending on ER 5.2.

SO 6 – Raise awareness & built capacities on ABS NP

Table 9. Expenses for SO6 in 2015.

SO 6 – Raise awareness & built capacities on ABS NP						
ER 6.1 – DGD and RBINS familiar with Nagoya Protocol	5,000.00 €	10,40 €	10,40 €	0,.00 €	4,889.60 €	0,21
ER 6.2 – Awareness is raised	10,000.00 €	11,509.42 €	10,712.42 €	797,00 €	-1,509.42 €	115,09
Salaries M. Vanhove (2 pm)	16,503.00 €	12,472.56 €	12,472.56 €	0.00 €	4,030.44 €	75,58
Total	**31,503.00 €**	**23,992.38 €**	**23,195.38 €**	**797.00 €**	**7,510.62 €**	**76,16**

Points of comment:

- ER 6.1.: also, resources for SO6 were rather spent on salaries due to the type of activities, rather than operational costs, hence the unspent ER 6.1, also because 2015 was not a COP year.

SO 7 – Coordination and management

Table 10. Expenses for SO7 in 2015.

SO 7 – Coordination and management						
ER – Programme is efficiently, effectively managed	2,000.00 €	1,542.83 €	1,542.83 €	0.00 €	457,17 €	77.14
Salaries L. Janssens de Bisthoven, V. Pinton, M. Agarad (6+12+12pm)	109,259.00 €	116,409.14 €	116,409.14 €	0.00 €	-7,150.14 €	106.54
Total	**111,259.00 €**	**117,951.97 €**	**117,951.97 €**	**0.00 €**	**-6,692.97 €**	**106.02**

No comments

External projects 2015

Table 11. external projects and origin of funding.

Project/ activity	South partners	North/global partners	Total Budget	CEBioS contribution
VLIR-UOS South Initiative: Monitoring of Lake Tanganyika (CEBioS is co-promotor)	OBPE, UB, Burundi	VUB	75000, 2015-2016	Until now no mission due to bad political situation, meetings with VUB and communication with BU
VLIR-UOS North South South: Decision support system for lake Manyara (CEBioS is partner)	NM-AIST, Tanzania, UNZI (Un. Zimbabwe), UWC (S Africa)	KU Leuven, UGent	75000, 2015-2016	Luc Janssens de Bisthoven and Maarten Vanhove have organised a workshop in their working time. CEBioS financed half of the ticket of Luc due to conflicting agendas and a high ticket price. (rest missions paid by project). One premaster student Sebastiaan Verbesselt (KU Leuven) developed a survey at RBINS for this project.
An ichthyo-parasitological workshop in Bas-Congo in support of a Central African network in fish parasitology and to enhance scientific collaboration within the D.R. Congo		RMCA	€ 10 000, funded by DGD-RMCA	CEBioS paid ticket of Maarten Vanhove, due to activities related to CEBioS in Kinshasa and Parc Mangroves (+Kisantu, ERAIFT, Unikin VVOB, Ambabel, CHM NFP).
CHM training (CEBioS is executing training)	Iraq, Myanmar, Lebanon (ministeries environment	GEF	Missions, ca. 6000	Han de Koeijer has given short training in Myanmar in his working time, no other financing (missions paid by GEF through ministries). Lebanon was trained by Morocco CHM fp.
IPBES meeting In India (capacity building) and in South Africa (scoping paper)	India, South Africa	IPBES	Missions, ca. 6000	The missions of Maarten Vanhove (South Africa) and Marie-Lucie Susini were partially covered by BELSPO

Training activities

Fig. 3. Training in taxonomy (GTI), Mouhamadou Kone and Lombart Mesmer Maurice Kouakou are sorting their ant specimens from Côte d'Ivoire at the RBINS, under the supervision of Dr W. Dekoninck.

Training constitutes the core of the capacity-building 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.

Table 12. Overview of **training efforts in 2015** (number of trainees per programme component, activity and country).

	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 (5), D. R. Congo (4), Morocco (2), Togo (1), Uganda (2) and Vietnam (1)			
S0 1.2- Quality scientific knowledge is produced				
1.2.1.(A) Taxonomic research is strengthened – *in situ* workshops				Côte d'Ivoire (12), D.R. Congo (3), Benin (3), South Africa (2) and Vietnam (7).
1.2.2. Cooperation with OBPE				Burundi (14)
1.2.2. Cooperation with UNIGOM				DR Congo (15)
1.2.2. Cooperation with UAC				Benin (9)
1.2.3. (C) Cooperation with UNIKIS	DR Congo (3)			
1.2.4 Marine modeling	Peru (2)			Peru(8)

SO2.1 Expertise in information management is built Training workshops	Guinée-Bissau(1), Iraq (2), Mali (1), Togo (2)	Tanzania (17), Liban (16), Myanmar (25) Togo (23),
SO2.3 Information used in governance		Tanzania (17)
SO3.2		DR Congo (42)
SO4.1 DGD training "Ecosystem services, biodiversity and reward mechanisms"	DGD civil servants (10)	
SO5.2 Opening workshop of MRV projects	Benin (4), Burundi (2), DRCongo (2), Morocco (1)	

Distance learning

The process of 'distance learning' has continued in 2015. It took many forms, pending on the type of support needed by our partners. For the CHM, demand-based ad hoc support by e-mail for the web masters was provided regularly.

Fig. 4. Mr. Ayaovi and Dr. W. Dekoninck (RBINS)

For the **GTI,** the approach is different. Taxonomy is a complex science that highly depends on the studied taxon, explaining why a single person cannot achieve distance learning efficiently.

Distance learning thus takes the form of sharing of resource material through our 'GTI reader' website (http://www.taxonomy.be/gti_course/). It also consists of sustained support throughout the year by the promoters of GTI projects and by the mentors of our trainees. In 2015, such support took the form of review and correction of draft scientific papers, translation of papers into English (or improving the quality of English), production of illustrations and maps, search for literature, etc.

Awareness raising

Awareness raising has a special SO however also in other SOs there are activities who's 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 are :
Poster sessions + oral presentations:
Anne-Julie Rochette, poster and presentation at "Mobilising biodiversity data for sustainable development", South Africa, 19-22 May
Han de Koeijer, poster at the Bio-informatics Conference, Brussels, 21 May as well as CEBioS event "Biodiversity and Development, a global heritage": 26/11
Han de Koeijer, oral presentation of the TCTool in UNEPs Second Multi-Stakeholder Expert Meeting on Elaboration of options for enhanced cooperation and Synergies among Biodiversity-Related Multilateral Environment Agreements, Geneva, Switzerland. May, Geneva, Switzerland.

Stands:

- The Europe Day (draft booth presented): 09/05, 30.000 visitors, Development Village, Esplanade of the European Parliament.
- Bruxelles Champêtre/Landelijk Brussel, together with the CBD NFP: 20/09, 80.000 visitors, Place des Palais, Brussels.
- CEBioS event "Biodiversity and Development, a global heritage": 26/11, 170 participants, RBINS

Part II. Institutional cooperation

Introduction

Our institutional cooperation concentrates on OBPE (Burundi, previously INECN) and UAC (Benin). Both started a three year programme in 2014. For the institutional cooperation on marine modeling with IMER (Vietnam) and IMARPE, we refer to the chapter under SO1, 1.2.4.(D).

We also collaborated with the following institutions for in situ workshops on taxonomy related to ecosystem services: the Université Nangui Abrogoua (ex Abobo Adjamé), UFR Sciences Naturelles, Abidjan, Côte d'Ivoire; the Universidad Tecnica Particular de Loja (UTPL) in Ecuador; the University of Kisangani, Kisangani, in D. R. Congo; the Vietnamese Academy of Science and Technology, Institute of Ecology and Biological Resources, Department of Insect Systematics, Hanoi, Vietnam and the Vietnamese Academy of Science and Technology, Vietnam National Museum of Nature, Hanoi, Vietnam (VNMN).

Grantees coming from the following institutions visited the RBINS or another taxonomic research facility in Belgium thanks to our funding: Université d'Abomey-Calavi, Laboratoire d'Ecologie Appliquée, Cotonou, Benin ; Faculté des Science et Techniques de Dassa, Benin ; OBPE, Burundi ; Faculté des Sciences & Ecole Normale Supérieure, Université de Yaoundé I, Cameroon ; Université Nangui Abrogoua (ex-Université Abobo Adjamé) Abidjan, Côte d'Ivoire; Université Nangui Abrogoua, Abidjan, Côte d'Ivoire ; Centre de recherche en Hydrobiologie (CRH-UVIRA) D.R. Congo ; Faculté des Sciences et Sciences appliquées/Université Officielle de Bukavu, D.R. Congo ; Pontificia Universidad Católica Del Ecuador (PUCE), Ecuador ; Université Péléforo Gon Coulibaly (ex Université de Korhogo), Côte d'Ivoire, UFR Biosciences/ Université Félix Houphouët-Boigny, Côte d'Ivoire, Missouri Botanical Garden, Antananarivo, Madagascar and Faculté des sciences de Tétouan, Morocco.

We have long term partnerships [1]for the CHM with:

- Agence de l'Environnement et du Développement Durable, Ministère de l'Environnement et de l'Assainissement, Mali
- Centre National de Floristique, Université de Cocody, Abidjan, Côte d'Ivoire
- Conseil national de l'Environnement pour un Développement durable (SE/CNEDD), Niger
- Direction Générale des Forêts et des Ressources Naturelles, Benin
- Direction Nationale de La Biodiversité et des Aires Protégées, Guinea
- Ministère de l'Aménagement du Territoire, de l'Eau et de l'Environnement (MATEE), Morocco
- Ministère de la Production, de l'Environnement, de l'Énergie, de l'Industrie et de l'Artisanat, Comoros
- Ministère de l'Aménagement du Territoire et de l'Environnement, Algeria
- Ministère de l'Environnement et du Développement Durable, Burkina Faso
- Ministère de l'Environnement, Conservation de la Nature et Tourisme, DR Congo
- Ministère de l'Environnement, de la Protection de la Nature et du Développement Durable, Cameroon
- Ministry of Environment, Science and Technology, Ghana

[1] Long term partnerships are based on institutional contacts, mostly with CHM focal points

- Office National pour l'Environnement, Madagascar
- Rwanda Environmental Management, Rwanda
- Vice-Presidents office, Tanzania

Some partnerships are active (see details under CHM), while others are on hold (e.g. Mali, Guinea, Rwanda) until new projects are selected.

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)

OBPE submitted its annual report 2015 in April 2016, with more than 20 annexes. The annexes can be consulted on demand. They concern mission reports, guidance for researchers, for decision makers, about the protocol of Nagoya, for communities, a draft of a lexicon and so on.

Rapport 2015

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

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

Pour l'an 2015, des collectes des données sur les sentiers écologiques dans les trois parcs nationaux de la Ruvubu, Kibira et Rusizi ont été menées trimestriellement par les responsables des aires protégées sur base des fiches LEM. Les fiches LEM complétées ont été toujours envoyées au siège de l'OBPE pour leur enregistrement dans une base de données en Excel (Annexe électronique 1). En même temps, les activités de supervision ont été menées semestriellement pour constater si le système de collecte de données est maitrisé (Rapports en annexes 1,2,3).

N.B.: Au cours de l'activité de supervision du premier semestre, il a été constaté que les responsables des aires protégées commettaient beaucoup d'erreurs dans l'enregistrement des données et certaines données ont été abandonnées pour certains secteurs. Il a été ainsi décidé d'organiser un atelier de prise de décision sur les nouvelles orientations de suivi de la dynamique des habitats. Il s'agissait en fait d'une réunion de formation additionnelle pour corriger les erreurs dans l'utilisation des fiches LEM (Rapport en annexe 4).

1.1.2 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

Dans le souci de renforcer les connaissances taxonomiques des agents chargés du suivi de la dynamique des habitats, des herbiers ont été confectionnés sur base des échantillons issus des études de référence sur le suivi de la dynamique des habitats et des armoires pour les contenir ont été fabriqués et acheminées aux Parcs Nationaux de la Kibira, Ruvubu et de la Rusizi. Le personnel des aires protégées ont été formés pour leur usage. Il s'agit des herbiers qui contiennent l'essentiel des espèces principales rencontrées dans les sentiers écologiques (rapport en annexe 5a).

De plus, 6 armoires ont été également disponibilisées pour renforcer l'herbarium de l'OBPE dans le souci d'avoir un herbarium remplissant les normes internationales (Annexe 5b).

Toujours dans le souci de renforcement les connaissances dans la collecte des données floristiques, un guide sur la flore et les habitats du Parc National de la Ruvubu pour le suivi de leur évolution et un lexique vernaculaire de la flore du Burundi (des parcs nationaux de la Ruvubu, Kibira et Rusizi) ont été confectionnés. Au cours du mini-atelier de leur validation, les participants ont proposé qu'il y ait un comité de lecture du guide. Cette lecture a été finalement faite et le document préfinal est disponible (Annexe électronique 2 sous dropbox). Pour le lexique (Annexe électronique 3), les participants ont recommandé qu'il faut recueillir plusieurs données en provenance des chercheurs botanistes de l'université du Burundi pour avoir un lexique national et non un lexique se limitant seulement aux trois parcs.

N.B. : Au niveau de l'herbarium de l'OBPE, l'encodage et l'étiquetage doivent continuer suite à l'immensité de l'activité et aux herbiers très nombreux. Pour le guide et lexique, leur finalisation et impression doivent continuer.

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

Pour assurer la collecte des données sur les sentiers écologiques d'une manière efficace, il était prévu d'assurer l'envoi vers la centrale des données collectées avec des tablettes à travers l'internet. Suite à la crise qui a secoué le Burundi, cette activité qui nécessitait un formateur Belge sur l'utilisation des tablettes n'a pas eu lieu.

1.2.3. Organiser un atelier régional d'échange d'expériences sur les meilleures pratiques et les leçons apprises sur le suivi de la dynamique des habitats (Bénin, Burundi et RDC, Rwanda)

Il était prévu un atelier régional d'échange d'expériences qui allait être organisé au Burundi sur les meilleures pratiques et les leçons apprises sur le suivi de la dynamique des habitats en faveur du Bénin, Burundi, RDC et Rwanda. Cette activité n'a pas encore eu lieu suite à la même raison d'insécurité.

N.B. : Compte tenu de la persistance de l'insécurité au Burundi surtout sur terrain, il pourrait être possible que ces deux activités (1.1.3 et 1.2.3) puissent s'organiser à la même période en RDC. Une équipe burundaise pourrait facilement se déplacer facilement et assister à ces deux activités.

(Résultat attendu 2 du cadre logique pas applicable pour 2015)

Résultat attendu 3: Des publics cibles sont sensibilisés à la biodiversité

3.1.2. Confectionner des outils de sensibilisation sur les aires protégées suivant les groupes cibles

Pour cette activité, trois livrets de sensibilisation des institutions et ONGs, des communautés riveraines, les administratifs provinciaux et communaux) ont été confectionnés, validés dans un mini-atelier (Annexes électroniques 4,5,6) et sont en train d'être traduits en kirundi avant leur impression.

3.1.3. Organiser des séances de sensibilisation des populations riveraines des aires protégées par groupes cibles suite aux résultats de 3.1.1. et 3.1.2.

Les séances de sensibilisation n'ont pas encore faites. Après l'impression des livrets en langues accessibles, on procédera à l'organisation des ateliers au mois de mars 2016.

3.2.2. Confectionner des outils de sensibilisation sur le Protocole de Nagoya suivant les groupes cibles (suite aux résultats 3.2.1.)

Pour cette activité, trois livrets de sensibilisation des Chercheurs, des tradipraticiens, des décideurs) ont été confectionnés, validés dans un mini-atelier (Annexes électroniques 7,8,9). Ces trois livrets devront être soumis pour observation à un expert formateur en communication dans le domaine de l'APA, avant leur traduction en kirundi, puis leur impression et utilisation en sensibilisation.

3.2.3. Organiser des séances de sensibilisation des groupes cibles sur le Protocole de (suite aux résultats 3.2.1 et 3.2.2.)

Cette activité n'est pas encore accomplie suite à l'insécurité qui règne au Burundi. En effet, cette activité devrait commencer par la formation par d'un groupe d'experts nationaux en communication spécialisés dans le domaine de l'APA. De plus, on devrait mettre en place et renforcer un comité consultatif sur les questions en rapport avec le Protocole de Nagoya et organiser deux réunions en leur faveur. Une proposition d'un comité national APA a été faite et soumise au Ministre ayant l'environnement dans ses attributions pour approbation. Le Ministre y a mis des observations qui restent à intégrer afin de son adoption.

3.3.2. Confectionner des outils de sensibilisation sur les problèmes clés de la biodiversité suivant les groupes cibles (suite aux résultats 3.3.1.)

Pour cette activité, trois livrets de sensibilisation des institutions et ONGs, des communautés locales et autochtones, les administratifs provinciaux et communaux) ont été confectionnés, validés dans un mini-atelier (Annexes électroniques 10,11,12) et sont en train d'être traduits en kirundi avant leur impression.

Résultat attendu 4: Renforcement du CHM et du MRV

4.1.3. Suivi via entre autres l'organisation de réunions périodiques des Points focaux interinstitutionnels du CHM

Les points focaux interinstitutionnels se sont retrouvés en réunions trimestrielles pour nourrir le site Web du CHM (Rapports en annexes électroniques 13,14,15,16 et pages web) .

4.1.4. Recruter un consultant chargé d'appuyer le Point Focal du CHM dans la collecte et le postage des informations sur le site web du CHM pour 8 mois

Le Point Focal National a été appuyé par une personne ressource œuvrant en consultant dans la collecte et la diffusion des informations (Rapport des activités annuelles en annexe électronique 17).

4.2.1. Publier et diffuser annuellement le bulletin scientifique de l'INECN

Après l'adoption du nouveau bulletin «Bulletin scientifique sur l'Environnement et la Biodiversité» par le Comité Scientifique, il a fallu faire une demande au centre de gestion de l'ISSN en France pour nous donner le nouveau numéro ISSN. Selon les règles de ce centre, il est en train d'analyser notre site web (Page web) et seulement un ID de ce dossier nous est offert: Bib ID 2462890 correspondant à la version en ligne.

N.B. : Pour l'an 2015, il était prévu de produire deux numéros 14 et 15 de l'ancien bulletin. Actuellement, on va produire le bulletin N°1 (14) du fait que le numéro spécial du bulletin qui allait être consacré au Symposium de Goma n'a reçu qu'un seul article qui sera en fin de compte publié dans le bulletin N°1.

4.2.2. Publier et diffuser «la flore des plantes ligneuses du Burundi» dans ABC, TAXA

La flore des plantes ligneuses du Burundi est en train d'être finalisée et sera disponible et soumise à ABC TAXA en fin mars 2016.

4.3.6. Importer des livres dans le domaine de biodiversité (sur le lac Tanganyika et les écosystèmes centrafricains) en 3 lots

Suite à l'insécurité qui règne au Burundi, l'importation des livres en rapport avec le lac Tanganyika et les écosystèmes d'Afrique centrale n'a pas encore eu lieu.

CONCLUSION

A l'analyse des actions menées, le constat est que plusieurs activités ont été interrompues par l'insécurité au Burundi. Considérant qu'une paix relative en train de venir progressivement au Burundi, il est recommandé que les Experts chargés de différentes formations puissent se disponibiliser rapidement pour différentes activités au Burundi.

Rapport sur l'avenant 2014 effectué en 2015

1. INTRODUCTION

Dans le cadre du programme de recherche, échange d'information, sensibilisation et conservation de la biodiversité au Burundi conclu entre l'OBPE et l'IRScNB, des actions ont été menées autour du résultat attendu global suivant: La consolidation des mécanismes de suivi de la biodiversité, d'échange d'information, de sensibilisation du public pour la conservation de la biodiversité et des services écosystémiques au Burundi et sous le résultat intermédiaires(RI) suivant:

RI2-Evaluation et valorisation des services écosystémiques dans les aires protégées

2. REALISATIONS

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

2.1.2. Mener une étude spécifique pour l'estimation de la valeur économique des SE sélectionnés sur base d'une étude bibliographique faite sur les SE

Cette activité n'a pas encore eu lieu du fait qu'il y avait d'abord la nécessité de faire une formation par un expert Belge sur la façon de conduire une étude scientifique d'évaluation des services écosystémiques.

2.2.2. Mener une recherche sur la filière commerciale et communautaire des champignons

La recherche sur la filière commerciale et communautaire des champignons a été menée dans les forêts claires du Paysage Protégé de Gisagara à Est du Pays et à la Réserve Naturelle de Rumonge au Sud du pays (SW 1 , 2). Les activités de terrain de recherche viennent d'être achevées en date du 23 janvier 2016. Les étudiants de la Faculté des Sciences économiques ayant menée la recherche sont en phase de rédaction.

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

Cette activité n'a été débuté que partiellement du fait qu'il y avait nécessité d'une formation de l'étudiant et trois cadres de l'OPBE sur la conduite des pépinières des essences ectomycorrhiziques par un expert belge. Ce dernier n'a pas pu venir au Burundi suite à l'insécurité au Burundi. Dans l'entretemps, des graines ont été collectées et un site d'expérimentation a été identifié.

2.2.4 Organiser une formation des éco-gardes et les communautés locales sur l'exploitation rationnelle des champignons

La formation des éco-gardes et les communautés locales sur l'exploitation rationnelle des champignons n'a pas encore eu lieu du fait qu'il était lié à la présence d'un expert belge comme formateur.

2.2.5. Mener des recherches sur la taxonomie des champignons

Pour cette activité, il est retenu de faire un condenser des études faites en une étude sur la productivité des champignons. Actuellement, les dernières études sur la productivité des champignons sont en cours de finissage. Pour résoudre certains problèmes d'ordre taxonomique, certains échantillons ont été envoyés au Jardin Botanique de Meise pour une détermination taxonomique par Dr Jérôme Degreef. La rédaction du condensé doit débuter avec le mois de mars 2016.

2.3.1. Mener des recherches sur la taxonomie des pollinisateurs

Une étude de l'influence des pollinisateurs sauvages en milieux agricoles des Parc Nationaux de la Kibira a été menée dans un cadre plus large d'un mémoire de master (SW). De plus, une visite pour la taxonomie des pollinisateurs sur base des collections faite a été faite NDAYIKEZA Longin à l'IRScN de Belgique sous l'encadrement de Dr Alain Pauly (SW).

2.4.1 Mener une recherche sur le rotin (palmier rotang)

Une étude de distribution, de caractérisation et d'essai de mise en culture du palmier rotang a été faite (SW). La rédaction va prendre fin avec le mois d'Avril 2016.

2.4.2 Mener une recherche sur le bambou

Une étude de distribution et de caractérisation du bambou de montagne est en cours (SW). Elle a été interrompue momentanément par l'insécurité dans la forêt de la Kibira.

2.4.3 Mener une recherche sur les macrophytes en milieu aquatique, typologie des 'wetlands'

Cette activité pourra se faire dans le cadre du Projet SI VLIR-UOS « Renforcement des capacités pour assurer la biosurveillance de la biodiversité du lac Tanganyika au Burundi » qui n'a pas également débuté tôt suite à l'insécurité au Burundi.

3. CONCLUSION

A l'analyse des actions menées sur le résultat intérimaire « Evaluation et valorisation des services écosystémiques dans les aires protégées », le constat est que plusieurs activités ont été interrompues par l'insécurité au Burundi. Considérant qu'une paix relative en train de venir progressivement au Burundi, il est recommandé que les Experts chargés de différentes formations puissent se disponibiliser rapidement pour différentes activités au Burundi. Il est très important que les activités concernant les champignons puissent se faire avant la fin des pluies donc avant le mois de Mai 2016.

Institutional cooperation with Université Abomey-Calavi (UAC)

Mission CEBioS évaluation au Bénin

- Debriefing de la mission d'évaluation sur le terrain de février 2016 à l'ambassade de Belgique, avec Mme. Hanelore Delcour. *Il est clair que l'ambassade n'a pas de fonds opérationnels ni de coopération déléguée qui pourrait fournir un support pour nos activités, comme par exemple l'atelier alumni du GTI.* Des instructions claires pour le prochain PIC seront là en septembre 2016. Il sera important pour CEBioS d'y contribuer. Les deux secteurs de la coopération belge au Bénin sont l'agriculture et la santé ; tous deux ont un côté opérationnel et un côté institutionnel, notamment le renforcement de ministères, structures, agences. Trois filières sont soutenues : le riz, l'anacardier et le maraichage. Un laboratoire de sécurité alimentaire a été certifié. La BE travaille avec l'UE et la GIZ. Une vague de pensions va toucher tous les ministères ce qui va provoquer beaucoup de recrutements parmi les jeunes, mais malheureusement beaucoup de retards et de perte de mémoire institutionnelle. CEBioS mentionne sa participation au processus des ACC. Nous mentionnons également le problème des déchets d'hôpitaux auquel le ministère de l'environnement tente de faire qq chose. Une approche plus intégrée serait plus utile.

Fig. 5 : silo traditionnel dans un village des AVIGREFS. / mangroves/ pythons au temple à Ouidah, animal sacré dans le culte du Vaudun. (Photos@Luc-Janssens de Bisthoven)

- Visite d'une **école** à Tounougou où le projet de sensibilisation soutenu par CEBioS a eu lieu : affiches, potager de démonstration protégé par une enceinte. Chaque jour un élève est désigné pour aller chercher de l'eau. Les élèves informent parents et amis sur l'importance de la biodiversité. Effet multiplicateur. Il convient également de mentionner le **club des écoliers** (plus de 200) organisé pour l'environnement.

Fig. 6: école de Tounougou, potager de sensibilisation (projet CEBioS-CHM). (Photos@Luc-Janssens de Bisthoven)

- Route le longs de la **réserve de chasse** où se trouvent les villages Wama, Gurantché et Baribé faisant parties des AVIGREFS. Chasse de trophée avec un quota de 3 lions par an, donnant 1 million de CFA par lion. Egalement phacochères, antilopes et buffles. Les éléphants ne sont pas chassés. Le long de cette réserve cynégétique il y a une zone d'utilisation de 5 km où les villageois peuvent faire des champs et collecter le bois mort. Cependant nous constatons une **dégradation de la foret Guinéenne**, des tas de bois vert au bord de la route pour le commerce. La chasse au francolins est permise (au fusil). Les écogardes n'ont pas de solution immédiate pour cette déforestation illégale : que faire du bois confisqué : il est donné à des communautés. Comment démanteler la filière commerciale ? Quel est le rôle des politiciens ?

Fig. 7: commerce de bois (Photos@Luc-Janssens de Bisthoven).

- Egalement inquiétant est la présence de **champs de coton** qui n'est pas organique. Le coton est collecté par endroits pour être chargé sur de gros camions. Même dans la réserve de chasse il y a des pistes illégales pour chercher le bois.

Fig. 8: toute la route du nord est bordée de coton/ village traditionnel au bord de la réserve de chasse de la Pendjari. (Photos@Luc-Janssens de Bisthoven)

- Egalement beaucoup de **déchets** causés par les sacs plastiques.
- Traversée du parc de la Pendjari. Beaucoup **d'animaux**, surtout aux mares : hippotragues, bubales, hippopotames, éléphants, buffles, phacochères, kobs de Buffon, oribi, redunca, singe patas, singe grivet, babouins, guibs harnachés, waterbuck. Le lendemain également une lionne et un céphalophe à flanc roux. Egalement grues couronnées, outarde de Denham et une multitude d'autres oiseaux.
- Nous visitons deux des 9 **placeaux**, endroits où un hectare d'un habitat représentatif a été balisé à la peinture verte, où le feu est interdit (pas respecté), et où les écogardes inscriront sur des fiches LEM (formation faite par Francois) le changement de l'habitat sur des carrés de 50x50 m.

Fig. 9: discussion et marquage des placeaux dans le P.N. de la Pendjari pour le monitoring des habitats. (Photos@Luc-Janssens de Bisthoven)

Fig. 10: quelques mammifères du P.N. de la Pendjari:, Kob de Buffon, éléphant, reedbuck redunca, bubale, hyppotrague (Photos@Luc-Janssens de Bisthoven).

Le site national CHM du Bénin:

http://bj.chm-cbd.net/cooperation/coop/cooperation-bilaterale/partenariat-benin-belgique/cooperation-irscnb-uac-chm/documents-produits-dans-l-execution-du-projet

Rapport 2015 de l'UAC-LEA

Le rapport annuel 2015 pour la coopération avec l'UAC a été soumis en mars 2016 avec 4 annexes. Celles-ci peuvent être consultées sur demande. Il s'agit de :

Annexe 1 : Budget chronogramme 2015
Annexe 2 : Rapport de mission Octobre 2015
Annexe 3 : Rapport de mission de supervision des étudiants sur le terrain en Août 2015
Annexe 4 : Rapport de mission de Décembre 2015

INTRODUCTION

Dans le cadre du programme de partenariat entre l'Institut Royal des Sciences Naturelles de la Belgique (IRSNB) et l'Université d'Abomey Calavi (UAC), un mémorandum d'entente a été signé entre ledit institut et le Laboratoire de l'Ecologie Appliquée de l'Université d'Abomey Calavi pour la période 2014-2016.Le programme de coopération entre l'UAC et l'IRSNB, expliqué dans ce mémorandum d'accord 2014-2016 vise à consolider la recherche, l'échange d'information, la sensibilisation et la conservation de la Biodiversité au Bénin. Le programme se trouve à l'interface entre la recherche académique et l'application des résultats de recherche pour une gestion durable des aires protégées dans la région du Parc National de la Pendjari (PNP) et de ses services écosystémiques. De façon

spécifique le partenariat a pour objectif de (i) renforcer les capacités de l'Université d'Abomey-Calavi à répondre aux préoccupations de la Direction du Parc National de la Pendjari (DPNP), et des AVIGREFs sur la gestion des feux et leurs impacts sur les habitats et la faune dans la Réserve de Biosphère de la Pendjari, tout en valorisant l'expertise de l'IRSNB ; (ii) informer et sensibiliser les acteurs et les bénéficiaires des services inhérents au parc (entre autres CENAGREF et AVIGREFs) sur les valeurs de ces services écosystémiques et (iii)contribuer au réseau CHM national pour renforcer la coopération scientifique et technique. Pour atteindre ces objectifs un cadre logique de travail, déclinant les objectifs en des activités annuelles a été élaboré et exécuté chaque année. Le présent document est le rapport d'exécution des activités programmées pour l'année 2015.

1-ACTIVITES PROGRAMMES EN 2015

Selon le cadre logique de travail de 2015 (voir annexe1), les activités programmées se présentent comme suit :

- ✓ La mise en œuvre de modules d'information/formation au profit des étudiants sur la CDB, le CHM et le Protocole de Nagoya sur l'APA;
- ✓ La publication de la synthèse des recherches passées sur le CHM;
- ✓ L'UAC et l'IRSNB simplifient les contenus des résultats scientifiques déjà disponibles ; ce qui facilite leur transfert vers les usagers
- ✓ Le vocabulaire vernaculaire et les connaissances traditionnelles relatives à la biodiversité sont collectés, analysés et publiés
- ✓ Le lexique est produit, et disponible en version électronique et papier, et distribué ;
- ✓ La recherche sur les feux et parcours est effectuée.
- ✓ Les résultats des recherches sont transférés ou restituées aux gestionnaires du PN de la Penjari (Cenagref, DPNP, Avigref)
- ✓ Publication des nouveaux résultats de recherche sous la forme adéquate sur le site Web du CHM et autres réseaux adéquats
- ✓ 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
- ✓ 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 (Supplying Basic Equipment and Documentation)

2-NIVEAU DE REALISATION DES ACTIVITES

2.1 Activité 1.3.3 : La mise en œuvre de modules d'information/formation au profit des étudiants sur la CDB, le CHM et le Protocole de Nagoya sur l'APA

Cette activité a été réalisée à travers une conférence animée au profit des étudiants pour les informer sur la CBD, le CHM et le protocole de Nagoya sur l'APA. La conférence a été animée à l'Université d'Abomey Calavi le 6 janvier par Akpona Hughues et Akpona Jean-Didier du CHM et a connu la participation de plus 150 étudiants.

2.2 Activité 1.3.4 : La publication de la synthèse des recherches passées sur le CHM

Cette activité a été réalisée tout au long de l'année. Ainsi les documents issus de recherches passées dans le cadre des activités du partenariat ont été mis à la disposition du CHM pour publication. Ainsi les documents tels que les mémoires des deux étudiants de Masters de 2014, la synthèse réalisée en 2014 sur les recherches passées et des photos marquantes des travaux de terrain ont été mis à la disposition du CHM pour publication. Le lien ci-contre :

http://bj.chm-cbd.net/cooperation/coop/cooperation-bilaterale/partenariat-benin-belgique/cooperation-irscnb-uac-chm/documents-produits-dans-l-execution-du-projet

est celui permettant d'accéder aux documents publiés sur le site du CHM.

2.3 Activité 2.1 : L'UAC et l'IRSNB simplifient les contenus des résultats scientifiques déjà disponibles; ce qui facilite leur transfert vers les usagers

Cette activité de simplification des résultats a commencé dans le cadre de la rédaction du lexique et doit être poursuivie en 2016 en vue de sa finalisation avec le lexique.

2.4Activité 2.2 : Le vocabulaire vernaculaire et les connaissances traditionnelles relatives à la biodiversité sont collectés, analysés et publiés

Cette activité a démarré depuis 2014 et a été poursuivie en 2015. Ainsi des connaissances traditionnelles relatives à la gestion du feu et au vocabulaire vernaculaire des plantes et des animaux ont été complétées en 2015. Ainsi des espèces de plantes et d'animaux ont été nommées en langue vernaculaire Biali, Gourmantche et Waaba. Ces informations rentreront aussi en ligne de compte pour la rédaction du lexique qui est en cours d'être finalisé.

2.5 Activité 2.5 : Le lexique est produit, et disponible en version électronique et papier, et distribué

La rédaction du lexique a beaucoup évolué en 2015 mais n'est pas encore finalisée. En 2015, lors de la mission d'Octobre 2015 (voir rapport de mission en annexe 2) le plan de contenu du lexique proposé par les chercheurs de l'UAC, a été présenté aux gestionnaires. Ces derniers l'ont amendé et le plan de contenu a été approuvé. Suite à l'approbation du plan de contenu du lexique par les gestionnaires, la rédaction a réellement été effective entre Novembre et Décembre 2015. La finalisation peut être faite dans le premier trimestre 2016.

2.6 Activité 3.1 : La recherche sur les feux et parcours est effectuée

La recherche sur les feux et parcours a aussi été effectuée en 2015. Deux mémorants Masters appuyés chacun par un mémorant Licence sont en train de finaliser leur mémoire. En effet un premier mémorant Master de 2015 du nom de KOGOU Simon aborde la dynamique des habitats du point de vue des groupes et traits fonctionnels des plantes. Alors que le second du nom de EDALO Victoire investigue les facteurs déterminants les perceptions locales sur les services écosystémiques des différentes zones de la RBP et l'effet du feu sur lesdits services. Les deux mémorants ont tous collecté

déjà leur donnée sur le terrain et sont présentement en phase de rédaction. Les mémorants de Licence qui les ont appuyés ont déjà soutenu leur mémoire.

Par ailleurs, durant le séjour des étudiants sur le terrain, une mission de supervision a été faite sur le terrain pour les appuyer. Cette mission de supervision des étudiants sur le terrain a été dirigée par le coordonnateur le Prof. Marcel HOUINATO et accompagné par le Dr Thierry HOUEHANOU. Au cours de la dite mission le chronogramme budget 2015 a été présenté aux étudiants tout en leur expliquant davantage la thématique de recherche de chacun. Les étudiants ont été ensuite évalués sur leur niveau d'évolution dans la collecte de leur donnée. Des orientations ont été données à chacun pour mieux réussir la phase de collecte de donnée de terrain. Le rapport de la dite mission est présentée en annexe 3 pour plus de détails.

2.7 Activité 3.2 : Les résultats des recherches sont transférés ou restituées aux gestionnaires du PN de la Penjari (Cenagref, DPNP, Avigref)

Cette activité a été exécutée en Décembre 2015 au cours d'une mission à la Direction du Parc National de la Pendjari (voir rapport de mission en annexe 4). Ainsi les résultats issus des recherches de 2014 ont été présentés aux acteurs locaux. En moyenne 12 acteurs locaux (8 éco gardes, 2 AVIGREF et 2 DPNP) ont participé à cette séance de restitution. Les résultats restitués sont relatifs à la dynamique des habitats/parcours naturels et aux services écosystémiques des habitats selon les perceptions des populations locales. Les résultats synthétisés issus de l'effet des termitières sur la dynamique des habitats ont montré que :

- ✓ les termitières conservent significativement les ligneux et les Forbes alors que les graminoïdes et les légumineuses, sont plus abondantes dans les habitats de savane sans occurrence de termitières.
- ✓ Certaines espèces de Commelinaceae, de Sapindaceae et deAntheriaceae sont confinées aux termitières
- ✓ La production primaire nette de biomasse aérienne de la strate herbacée n'est pas influencée par les termitières alors qu'elle sous l'influence de la richesse spécifique globale et celle des graminoïdes puis l'indice de surface foliaire de l'espèce herbacée dominante.

A l'issue de ces résultats présentés, il ressort que la richesse des graminoïdes peut être utilisée comme un indicateur de suivi de l'état des habitats et d'estimation de la productivité dans les terres de parcours de la Réserve de Biosphère de la Pendjari. Il est donc recommandé que les activités de gestion et d'aménagement de la réserve visent à favoriser la conservation des graminoïdes en générale et celle des Poaceae en particulier sans pour autant compromettre les autres groupes fonctionnels.

Les résultats synthétisés issus de la perception locale sur les services écosystémiques et de l'effet du feu ont montré que :

- ✓ l'agriculture et la chasse sont les principales activités qui nécessitent l'usage du feu alors que les autres activités telles que la recherche de bois de chauffe, l'élevage, l'extraction du miel et les rites cultuels utilisent dans une moindre mesure les feux de végétation
- ✓ selon la perception locale, le feu affecte différemment les services écosystémiques et ceci de façon négative pour la majorité des services écosystémiques sauf la production de repousse issue des plantes fourragères.

2.8 Activité 3.3.2 : Publication des nouveaux résultats de recherche sous la forme adéquate sur le site Web du CHM et autres réseaux adéquats

La publication des nouveaux résultats de recherche sous la forme adéquate est en cours. En effet des manuscrits issus sur les résultats issus des travaux de recherche de 2014 sur les feux et parcours sont en cours de rédaction. La rédaction du manuscrit sur l'effet des termitières sur les groupes fonctionnels des parcours est en cours de finalisation. Ce manuscrit pourra être soumis pour publication dans le premier trimestre de 2016. Quant au manuscrit relatif aux perceptions locales sur les services écosystémiques et l'effet du feu, la rédaction est aussi en cours et pourra être finalisée en 2016. C'est après la publication des résultats que les articles seront mis sur le site Web du CHM et autres réseaux sociaux pour une large diffusion. Donc cette activité doit se poursuivre en 2016.

2.9 Activité 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 a été exécutée mais devra être poursuivie en 2016 pour l'appropriation plus des critères de collecte de données. En effet dans le cadre de l'exécution de la dite activité une première mission réalisée en Octobre 2015 (voir rapport de mission en annexe 2) a permis de mettre à la disposition des agents de terrain une fiche simplifiée de collecte de donnée pour le suivi de la dynamique des habitats et de l'effet du feu. Ladite fiche présentée aux agents de terrain au cours de cette mission a été amendée et corrigée. Elle a été aussi amendée par Dr François Muhashy lors de sa mission d'évaluation à mi-parcours en Novembre 2015. Après ces amendements, la fiche a été finalisée et utilisée à nouveau lors d'une mission de Décembre 2015 pour entrainer les agents de terrain sur les critères pertinents de collecte de donnée à utiliser en vue de son appropriation. Par ailleurs cette mission n'étant pas suffisante pour l'appropriation de la technique par les agents de terrain, l'activité doit être poursuivie en 2016.

2.10 Activité 4.3 : 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 (Supplying Basic Equipment and Documentation)

Cette activité n'a pas connu un niveau d'exécution majeur en 2015. En effet la conception de la base de données doit suivre l'activité 4.2 sur l'appropriation des critères pertinents de collecte de donnée sur la dynamique des habitats. Par ailleurs vue la période courte sur laquelle les activités de 2015 ont été exécutée, la base de donnée n'a donc pas pu être conçue.L'exécution de cette activité doit donc être poursuivie en 2016.

CONCLUSION

De façon globale, les activités budgétisées prévues en 2015 ont été presque toute exécutées sauf l'activité 4.3 sur la base de données. Cela est dû principalement à la courte durée sur laquelle les activités de 2015 ont été exécutées. D'autres activités telles que la mise en œuvre de modules d'information/formation au profit des étudiants sur la CDB, le CHM et le Protocole de Nagoya sur l'APA, la collecte des données liées au vocabulaire vernaculaire et les connaissances traditionnelles relatives à la biodiversité, la publication de la synthèse des recherches passées sur le CHM, la recherche sur les feux et parcours, le transfert ou la restitution des résultats de recherche aux gestionnaires du PN de la Pendjari ont été totalement exécutées. Par contre les activités telles que la

simplification des du contenu des résultats de recherche, la rédaction du lexique, la ppublication des nouveaux résultats de recherche sous la forme adéquate sur le site Web du CHM et autres réseaux adéquats, l'appropriation des critères pertinents par les gestionnaires pour la collecte des données sur la dynamique des habitats ne sont pas encore exécutées totalement et devraient donc être poursuivies en 2016.

De tout ce qui précède le chronogramme de 2015 a été exécuté en majorité dans son entièreté. Cependant quelques activités de 2015doivent être reprogrammées en 2016 pour leur achèvement complet.

Part III – Detailed output per strategic objective (SO)

SO 1. The RBINS strengthens the scientific and technical knowledge base on biodiversity and on its linkages with ecosystem services and poverty reduction.

Background

Despite technological advances such as DNA barcoding or cyber taxonomy and large scale programmes such as the European EDIT or the United States' PEET project, taxonomic knowledge remains scarce and there seems to be only little, if any, speeding up of the rates of species description. Capacity needed to maintain and build taxonomy and taxonomic collections is fragmented or even non-existing in developing countries where the bulk of biodiversity is situated. Governments, through the Convention on Biological Diversity, have acknowledged the existence of this problem and have termed it the "taxonomic impediment". To alleviate this obstacle the Global Taxonomy Initiative (GTI) has been installed and made operational. One of the staff of the DGD-unit at RBINS is the Belgian focal point for GTI.

In Belgium, the Royal Belgian institute of Natural Sciences, as the National Focal Point to the GTI, coordinates and organizes the activities needed to implement the objectives of the GTI.

In 2014, activities focussed on the provision and/or facilitation of taxonomic training both in Belgium and in partner countries: transfer of technology to selected institutions, delivery of taxonomic expertise to colleagues in the South, and liberation of taxonomic data via our website (http://www.taxonomy.be/). Whenever possible, we orientated activities such as research projects so as to favour the integration of a poverty-reduction vision. Through two of its former sub-programmes, "Tackling the taxonomic impediment" (GTI) and "Supporting biodiversity inventories, monitoring and assessments" (IMAB), our cooperation programme has long been strengthening the scientific and technical knowledge base on biodiversity. It has been doing so by capitalizing on the robust expertise of RBINS in the following aspects: i) the identification, monitoring and assessment of components of biodiversity (from taxonomic identification to ecological studies), (ii) the study and modeling of ecosystem functioning and (iii) the scientific foundations of conservation biology. Our mission of building scientific capacities in developing countries has proven efficient and will remain central in the coming framework programme.

Biodiversity is essential for general human well-being. The ecosystem services, i.e. the benefits derived from ecosystems, offer an exceptional instrument for conceptualizing the links between human development and biodiversity. Acknowledging the relevance of this perspective for poverty reduction, we are resolute in addressing it in our capacity building activities for the 2014-2018 programme. Specific objective 1 will strive to improve the scientific and technical knowledge on the above mentioned linkages.

It should be noted that the programme provides short term capacity building without the objective of obtaining a degree (Ms or PhD). However, many scientists are in the process of obtaining their thesis through research and the programme directly contributes to obtaining this degree through access to tools, material and knowledge. Therefore, in the logframe the number of graduates is given as a target, albeit being indirect or 'proxy'.

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 result 1.1 Scientific and technical expertise is built

Logframe (partim):

Expected results (output)	Output indicators	Report 2015
1.1 Scientific and technical expertise is built	National authorities use the information provided by SO1 in the national indicator processes 12-18 students trained / year will produce: 8 posters and/or oral presentations given at national or international events/ year; 5 publications in scientific journals or general media/ year; 3 who graduate (Master or Ph. D.)/ year;	20 trainees visited Belgium (see table 3) In 2015, 7 short symposiums were organised throughout the year so that the trainees could present their work at the end of their stays: • On 11/06/2015, Ms Flora Kpan Tokouaho and Mr Sèdjro Gilles Armel Nago presented their work on amphibians from Côte d'Ivoire and Benin, under the supervision of Dr Zoltan Nagy. • On 18/06/2015, Ms Souad Sahib from the Sciences Faculty of Tetouan, Morocco gave a presentation entitled 'Hoverflies (Diptera Syrphidae) of Morocco: a taxonomic and ecological study'. • On 17/07/2015, Hamed Olaniran Odountan from UAC, Benin, presented his work on the 'Ecologie comparée des macroinvertébrés et bioindication de la qualité de l'eau des lacs Nokoué et Ahémé (Sud-Benin)'. • On 25/09/2015, Mouhamadou Kone and Lombart Mesmer Maurice Kouakou, both from Côte d'Ivoire, presented their work on African ants (identification and digitization) at the RBINS. • On 01/12/2015, Joseph Lushombo Matabaro from DR Congo presented his work on the ecology of Lake Kivu introduced populations of the Lake Tanganyika Poecilid fish, Lamprichthys tanganicanus in Eastern Africa. • On 03/12/2015, Mr Ayaovi Agbessenou from Togo, gave a presentation entitled 'Establishing the taxonomic identity of sweet potato weevil Cylas species-complex in six regions in Ghana'. • On 09/12/2015, Zerubabeeli Naturinda and Ronald Muhereze from Uganda, presented their research on 'the impact of certification on biodiversity in smallholder coffee systems. Ant species as indicators for diversity'. 2 GTI trainees successfully defended their Ph.Ds:

		• Mr Sèdjro Gilles Armel NAGO defended his Ph. D., on January 28, 2015 at the Université d'Abomey-Calavi, Benin, on the theme: 'Amphibian ecological patterns and habitat disturbance in savanna ecosystem: implications for biomonitoring and conservation issues'. • Mr Moïssou LAGNIKA defended his Ph. D. thesis on the 'Diversité faunistique et qualité de l'eau des puits des communes de Lokossa, Parakou et Pobè au Bénin' on May 29, 2015 at the Université d'Abomey-Calavi, Bénin. Selection of the scientific outputs of actual or former GTI trainees in 2015: • New publication in Zootaxa issue 4021 (1) entitled 'Sawflies of Ethiopia (Hymenoptera: Argidae, Tenthredinidae) by FRANK Koch, Alain Pauly, Jean-Luc Boevé and GTI alumnus Zewdu A. Hora. • New article in the Journal of Parasitology (issue 101(4)), entitled 'Distribution of Thelastomatoid nematodes (Nematoda: Oxyurida) in endemic and introduced cockroaches on the Galapagos Island archipelago, Ecuador' with GTI alumnus Henri Herrera from the Charles Darwin Foundation as co-author. • An article describing a new genus and 2 new species of Nematods by GTI alumnus Jans Morffe Rodriguez in Papéis Avulsos de Zoologia (São Paulo), vol.55 no.6. • An article entitled 'Four new representatives of the genus Allocyclops Kiefer, 1932 from semi-consolidated subsoil aquifers in Benin (Copepoda, Cyclopoida, Cyclopidae)' co-authored by GTI trainee Moïssou Lagnika in Subterranean biology, issue 16: 1-36. Dr Kanvaly Dosso, GTI alumnus, was promoted 'Maître Assistant' by the 'African and Malagasy Council for Higher Education' (CAMES). Dr Tenon Coulibaly, GTI alumnus, got a lecturer position at the Université Peleforo Gon de Korhogo in Côte d'Ivoire!
Activities	**Report 2015**	
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	

Table 13: logframe (partim) for SO1, 1.1.

Activities

Early 2015, the Belgian GTI NFP officially launched its 12th external call for proposals for capacity building in taxonomy and access to collections in Belgium.
After evaluation, 20 taxonomists were selected out of the 72 applications. The young taxonomists were invited in Belgium for a short training (4 weeks). The selection criteria were the country and institution of origin, 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 20 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,…).
They came from the following countries: Benin (4 people), Burundi (1), Côte d'Ivoire (5), D. R. Congo (4), Morocco (2), Togo (1), Uganda (2) and Vietnam (1).
Our visitors were trained at the RBINS, Meise Botanic Garden (MBG) and Université Libre de Bruxelles (ULB). See table 4 for the full list of trainees and details.

Career advancement of GTI alumnus Dr Kanvaly DOSSO, from Université Nangui Abrogoua in Ivory Coast

We are very proud to announce that one of our GTI alumni, Dr Kanvaly DOSSO, has been recently promoted 'Maître Assistant' by the 'African and Malagasy Council for Higher Education' (CAMES).
African and Malagasy Council for Higher Education (CAMES) - See more at: http://www.guninetwork.org/guni.network/institutional-members/strathmore-university-1#sthash.Rb8MHbgf.dpuf
African and Malagasy Council for Higher Education (CAMES) is an intergovernmental institution for integrating higher education systems. It is made up of 17 countries

Table 14. List of guest researchers for the taxonomic training and access to collections in Belgium in 2014 (sorted per country)

NAME	COUNTRY	VISIT PERIOD	RESEARCH TITLE	TAXA	RELEVANCE TO DEVELOPMENT	AFFILIATION	TRAINING LOCATION
LAGNIKA Moïssou	Benin	18.10 to 27.11.2015	Taxonomie et systématique des Oligochètes dulçaquicoles du Benin	Oligochaets	Assessment of drinkable water + health issues	UAC	RBINS
LOKO YEYINOU Laura Estelle	Benin	31.10 to 27.11.2015	Diversité des termites (Insecta: Isoptera), principaux ravageurs des tubercules d'igname (Dioscorea sp.) et résistance des variétés locales au Benin	Isopteres	Pest management	UAC	ULB
NAGO Sèdjro Gilles Armel	Benin	16.05 to 18.06.2015	Initiative Amphibiens du Benin	Amphibians	Conservation and management of protected areas	UAC	RBINS
ODOUNTAN Olaniran Hamed	Benin	21.06 to 18.07.2015	Ecologie comparée des macroinvertébrés et bioindication de la pollution du lac Nokoué et du lac Ahémé.	Macro invertebrates	Assessment of drinkable water + pollution	UAC	RBINS
NDAYIKEZA Longin	Burundi	03.11 to 28.11.2015	« Etude de l'influence de l'anthropisation du milieu écologique sur la diversité des pollinisateurs autour des Parcs Nationaux de la KIBIRA ET RUVUBU au Burundi ».	Bees	Pollination + agriculture	UB	RBINS
KPAN TOKOUAHO Flora	Côte d'Ivoire	17.05 to 13.06.2015	Impact des changements climatiques sur les communautés d'Amphibiens dans le Parc National de Taï (Côte d' Ivoire)	Amphibians	Conservation and management of protected areas + climate change assessment	Université Félix Houphouët Boigny	RBINS
DOSSO Kanvaly	Côte d'Ivoire	16.08 to 12.09.2015	Initiation à la l'utilisation du microscope morphométrique et aux techniques de dissection pour une identification aisée et fiable des espèces de termites	Termites	Bioindicators and agriculture	Université Nangui Abrogoua	ULB
KONE Mouhamadou	Côte d'Ivoire	02.09 to 26.09.2015	Etude taxonomique et Numérisation des fourmis de Côte d'Ivoire	Insects	Agriculture and bio-indicators	Université Péléforo Gon Coulibaly	RBINS
KOUAKOU Lombart Maurice	Côte d'Ivoire	06.09 to 26.09.2015	Assessment of the diversity of native, exotic ant species and identification of potential invasive ant species in Côte d'Ivoire	Ants	Invasive species	Station d'Ecologie de LAMTO	RBINS
YIAN Gouvé Claver	Côte d'Ivoire	04.10 to 31.10.2015	Taxinomie, Ecologie et Services Ecosystémiques des Macromycètes du Parc National du Banco	Mushrooms	Food	Université Félix Houphouët-Boigny	MBG

LUSHOMBO Joseph Matabaro	D.R. Congo	02.11 to 05.12.2015	Comparative molecular ecology of native and Lake Kivu introduced populations of the Lake Tanganyika Poecilid fish, *Lamprichthys tanganicanus*, Eastern Africa.	Fish	Food and sustainable fisheries	Université Officielle de Bukavu	RBINS
MILENGE KAMALEBO Héritier	D.R. Congo	04.10 to 31.10.2015	Taxonomie des champignons du genre *Marasmius* (Basidiomycètes) des forêts de montagne de l'Est de la République Démocratique du Congo. Cas du Parc National de Kahuzi-Biega	Mushrooms	Food	Université Officielle de Bukavu	MBG
BIRINGANINE MUGOLI Elisabeth	D.R. Congo	04.10 to 31.10.2015	Diversité et écologie des champignons comestibles des forets à Michelsonia et Uapaca dans le massif d'Itombwe (RD Congo)	Mushrooms	Food	Centre de Recherche en Sciences Naturelles de Lwiro	MBG
KASONGO WA NGOY KASHIKI Bill	D.R. Congo	03.10 to 05.12.2015*	Etude de la systématique, la taxonomie et la microscopie des champignons du Katanga (RD. Congo)	Mushrooms	Food	Université de Lubumbashi	MBG
RAHMOUNI Imane	Morocco	31.10 to 28.11.2015	Les Cyprinidae du Maroc et leurs Monogènes branchiaux : systématique, phylogénie et biogéographie	Fish parasites	Fisheries	Université Mohammed V-Souissi	RBINS
SAHIB Souad (See fig. 4)	Morocco	25.05 to 21.06.2015	Les Syrphidés (Diptera: Syrphidae) du Maroc: étude taxonomique, cytotaxonomique et écologique	Arthropods	Biological control of pests and agriculture	Université Abdelmalek Essaadi	RBINS
AGBESSENOU Ayaovi	Togo	08.11 to 05.12.2015	Establishing the taxonomic identity of sweet potato weevil Cylas species-complex (Coleoptera: Brentidae) in four West African Countries.	Insects	Pests and agriculture	University of Ghana	RBINS
NATURINDA Zerubabeeli	Uganda	08.11 to 10.12.2015	Sustainable land use and resilient livelihoods in the landslide-prone region of Mount Elgon, Uganda (SureLive)	Ants	Agriculture and sustainable land use	Busitema University	RBINS
MUHEREZE Ronald	Uganda	08.11 to 10.12.2015	Sustainable land use and resilient livelihoods in the landslide-prone region of Mount Elgon, Uganda (SureLive)	Ants	Agriculture and sustainable land use	Busitema University	RBINS
DO Cuong **	Vietnam	-	Prioninae of Vietnam, Taxonomical Revision and Distribution	Insects	Conservation and management of protected areas	Institute of Prevention Medicine	RBINS

Fig. 11. Ms Souad Sahib from Morocco working with her tutor at the RBINS (Photo@Marie-Lucie Susini)

The trainings were evaluated by having tutors and trainees filling out evaluation forms. 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 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 the projects carried out by our visitors along with their scientific reports can be found on our website (http://www.taxonomy.be/gti_calls/grants_awarded/).

In 2015, seven short symposiums were organised throughout the year so that the trainees could present their work at the end of their stays:

- On 11/06/2015, Ms Flora Kpan Tokouaho and Mr Sèdjro Gilles Armel Nago presented their work on amphibians from Côte d4ivoire and Benin, under the supervision of Dr Zoltan Nagy.
- On 18/06/2015, Ms Souad Sahib from the Sciences Faculty of Tetouan, Morocco gave a presentation entitled 'Hoverflies (Diptera Syrphidae) of Morocco: a taxonomic and ecological study'.
- On 17/07/2015, Hamed Olaniran Odountan from UAC, Benin, presented his work on the 'Ecologie comparée des macroinvertébrés et bioindication de la qualité de l'eau des lacs Nokoué et Ahémé (Sud-Benin)'.
- On 25/09/2015, Mouhamadou Kone and Lombart Mesmer Maurice Kouakou, both from Côte d'Ivoire, presented their work on African ants (identification and digitization) at the RBINS.
- On 01/12/2015, Joseph Lushombo Matabaro from DR Congo presented his work on the ecology of Lake Kivu introduced populations of the Lake Tanganyika Poecilid fish, *Lamprichthys tanganicanus* in Eastern Africa.
- On 03/12/2015, Mr Ayaovi Agbessenou from Togo, gave a presentation entitled 'Establishing the taxonomic identity of sweet potato weevil *Cylas* species-complex in six regions in Ghana'.

- On 09/12/2015, Zerubabeeli Naturinda and Ronald Muhereze from Uganda, presented their research on 'the impact of certification on biodiversity in smallholder coffee systems. Ant species as indicators for diversity' (see fig. 5).

Fig. 12. Poster to announce the GTI symposium organised at the RBINS on 09/12/2015.

In 2015, we continued our alumni programme and maintained contact with our former visitors and trainees. We were very pleased to announce that two of our alumni successfully defended their Ph.Ds in 2015:

- Mr Sèdjro Gilles Armel NAGO successfully defended his Ph. D., on January 28, 2015 at the Université d'Abomey-Calavi, Benin, on the theme: 'Amphibian ecological patterns and habitat disturbance in savanna ecosystem: implications for biomonitoring and conservation issues'.
- Mr Moïssou LAGNIKA defended his Ph. D. thesis on the 'Diversité faunistique et qualité de l'eau des puits des communes de Lokossa, Parakou et Pobè au Bénin' on May 29, 2015 at the Université d'Abomey-Calavi, Bénin (See fig. 6). His GTI Belgian tutor, Dr Patrick Martin from the RBINS, received funding from the Belgian GTI to attend the Ph.D. defense as a member of the jury.

Both Moïssou and Gilles sent the Belgian GTI team their acknowledgements and expressed the fact their GTI trainings were decisive for their research and their Ph.Ds.

Fig. 13. Picture from the public Ph. D. defence of Mr Moïssou Lagnika (Photo@P. Martin).

We have 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.
Here is a selection of the scientific outputs of actual or former GTI trainees in 2015:

- New publication in Zootaxa issue 4021 (1) entitled 'Sawflies of Ethiopia (Hymenoptera: Argidae, Tenthredinidae) by FRANK Koch, Alain Pauly, Jean-Luc Boevé and GTI alumnus Zewdu A. Hora.
- Article in the Journal of Parasitology (issue 101(4)), entitled 'Distribution of Thelastomatoid nematodes (Nematoda: Oxyurida) in endemic and introduced cockroaches on the Galapagos Island archipelago, Ecuador' with GTI alumnus Henri Herrera as co-author.
- Article describing a new genus and 2 new species of Nematods by GTI alumnus Jans Morffe Rodriguez in Papéis Avulsos de Zoologia (São Paulo), vol.55 no.6.
- Article entitled 'Four new representatives of the genus Allocyclops Kiefer, 1932 from semi-consolidated subsoil aquifers in Benin (Copepoda, Cyclopidae)' co-authored by GTI trainee Moïssou Lagnika in Subterranean biology, issue 16: 1-36
- 2 articles co-authored by Hamed Odountan published in the Journal of Environmental Protection, 2015, 6, 1402-1416 (dx.doi.org/10.4236/jep.2015.612122) and in the Open Journal of Ecology, 2016, 6, 62-73 (dx.doi.org/10.4236/oje.2016.62007) both published with Open access.

Dr Kanvaly Dosso, was promoted 'Maître Assistant' by the 'African and Malagasy Council for Higher Education' (CAMES). Here is Dr Dosso's testimony to the Belgian GTI staff: 'Cette distinction est un couronnement de l'ensemble des activités pédagogiques et de recherche que j'ai menées durant mes deux premières années dans la profession d'enseignant chercheur. Je vous dédie cette promotion en reconnaissance de l'aide précieuse que votre institution m'apporte depuis quelques temps afin de garantir une bonne qualité des résultats de mes recherches.'

Moreover Dr Tenon Coulibaly, GTI alumnus, got a lecturer position at the Université Peleforo Gon de Korhogo in Côte d'Ivoire and thanked us deeply for the support we provided him!

Dr Sèdjro Gilles Armel Nago got a position of assistant in Animal resources management at University of Parakou, National School of Protected Areas Management located in Kandi, Benin.

Finally, we would like to highlight the participation of three GTI students during the symposium entitled 'Biodiversity and development, a global heritage' organised by CEBioS on 26/11/2015 (see fig. 7). The presentations were the following:

- Imane Rahmouni (Université Mohammed V, Rabat, Morocco) presented her work on Cyprinid Fishes from Morocco.
- Longin Ndayikeza (Université du Burundi) presented his work on pollinators in Burundi.
- Dr Laura Loko (Faculté des Sciences et Techniques de Dassa, Bénin) presented her work on termites from Benin.

Dr M-L Susini, as Belgian GTI NFP, gave a short presentation entitled 'Taxonomy and the Global Taxonomy Initiative'. More on CEBioS website: http://www.biodiv.be/cebios2/events/biodiv-dev/nl/presentaties

Fig.14. GTI students with CEBioS staff at the symposium on 26/11/2015 (Photo@T. Hubin)

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.

Logframe (partim):

Expected Results	Output Indicators	Report 2015
1.2 Quality scientific knowledge is produced **(4 parts: A, B, C, D)** 1.2.1.(A) taxonomic research is strengthened	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.	The 5 projects selected in 2015 were: • Training of trainers in ant, bee and insect taxonomy in Western Africa at Station d'écologie de LAMTO, Ivory Coast' by Dr Wouter Dekoninck • 'A step further in the Entomodiversity of Vietnam (part VI)' by Jérôme Constant and Dr Patrick Grootaert • 'Taxinomie, systématique et biodiversité des oligochètes des eaux souterraines du Bénin' by Dr Patrick Martin • 'Advancing herpetological research and collection building in Africa by North-South and South-South networking' by Dr Zoltan T. Nagy • 'Exploration and conservation of the algal and echinoderm biodiversity of Kwazulu-Natal, South Africa – building modern voucher collections and increasing local taxonomic capacity' by Dr Yves Samyn.
1.2.2.(B). the monitoring of habitats for the management of ecosystems is strengthened	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 over 5 years : 2 PhD students, 6 master students finalised their thesis,	B **Memoirs of master's degree completed and successfully defended** **-Kulondwa Sainzoga Shadrack** : « Influence du type d'habitat sur les traits des constructions (caractéristiques physiques) de *Cubitermes sp* et leur diversité spécifique dans le Miombo ». Uder upervision by Prof. Mujinya Bazirake basile (UNILU). -**Nday Lenge Heritier** « Evaluation du taux de décomposition de sept espèces thermitophiles de la réserve forestière de Luiswishi ». Supervision by Prof. Mujinya Bazirake Basile (UNILU **PhD projects** **- Ntumba Ndaye François** «Quantification et la monétarisation des services écosystémiques d'approvisionnement inhérents aux termitières des écosystèmes du Miombo ».

1.2.3. (C). taxonomic research and the monitoring of lowland forests at the University of Kisangani is strengthened	5 oral contributions (participation to meetings, conferences, lectures, seminaries…) 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).	This research is co-supervised by Professors Mujinya Bazirake basile and Prof Ngoie Schutcha (UNILU) and Dr François Muhashy Habiyaremye (l'IRSNB); **-Patrick Kasangiji A Kasangiji** « Influence des interactions interspécifiques et des conditions environnementales sur le comportement de construction des termites du genre *Cubitermes* dans le Katanga méridional ». Supervision by Prof. Mujinya Bazirake basile (UNILU). The drafting of the manual entitled "Habitats Nature Reserve Itombwe" has made significant progress workshop held in Goma in 2014 on the "knowledge of mushrooms **Contributions scientifiques dans des ouvrages collectifs** Kes Hillman Smith, François, Muhashy Habiyaremye, Jerome Amube & John Siddle. Ch. 13 - Habitat change and fire management in Garamba. In Hillman Smith K., J. Kalpers, L. Arranz & N. Ortega (Eds) 2014. Garamba, Conservation in Peace and War. Published by the authors. 448pp. ISBN: 978-9966-1851-0-5. **Papers** Mangambu Mokoso, J., Muhashy Habiyaremye, F., Robbrecht, E., Janssen, T., Ntahobavuka Habimana, H. and Van Diggelen, R. 2015 - Ptéridophytes : Bio indicateurs des changements opérés sur la structure des forêts de zone de montagnes du Parc National de Kahuzi-Biega à l'Est de la R.D. Congo. International Journal of Innovation and Scientific Research ISSN 2351-8014 Vol. 16 No. 2 Jul. 2015, pp. 350-370 c 2015 Innovative Space of Scientific Research Journals. http://www.ijisr.issr-journals.org/ **Mémoires** **Ceux qui ont été achevés et défendus avec succès (2014-2015)** **DEA**

1.2.4.(D) Application of the COHERENS model for integrated coastal management and monitoring of ecosystems	D A 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.	Gbeffe A. K. 2015 – Impact of Termite Mounds on the Net Primary productivity and Diversity of Plant Functional Groups in Pendjari Biosphere Reserve (Benin, West Africa) 45 p. + Annexes **Master** Sabi Lolo Ilou, B. 2015 – Impact des feux de végétation sur les services écosystémiques dans la réserve de biosphère de la Pendjari au Nord-Bénin. UAC **64 p.** **• En cours de préparation (2015-2016)** **DEA** Kogou, S. Evaluation des Savoirs Endogènes sur la Gestion des Feux de Végétation et de l'Impact de la Pression Anthropique sur la Dynamique des Habitats dans la Réserve de Biosphère de la Pendjari. Master Edalo, V. Perception locale sur l'impact des feux de végétation en relation avec les services écosystémiques dans la Réserve de la Biosphère de la Pendjari Licence Adantin, A. Diagnostic de la direction du Parc National de la Pendjari et impact des feux de végétation sur les services écosystémiques Deguenonvo, B. Diagnostic de la direction du Parc National de la Pendjari et perception locale sur l'impact de la gestion des feux de végétation dans cet écosystème C • In 2015 we organized research stays for three Congolese scientists. • Project titles: 1. Falay Dadi Sadiki: 'Understanding of epidemics of invasive salmonellosis in Central-Africa'

		2. 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)' 3. Prescott Musaba Akawa: 'Phylogéographie, zoonose et biodiversité des chauves-souris de la forêt de basse Altitude (Kisangani, RDC)'. A1 publications Jacquet F., Denys C., Verheyen E., Bryja J., Hutterer R., Kerbis Peterhans J.C., Stanley W.T., Goodman S.M., Couloux A., Colyn M., Nicolas V. 2015. Phylogeography and evolutionary history of the Crocidura olivieri complex (Mammalia, Soricomorpha): from a forest-based origin to a broad expansion across Africa. BMC Evolutionary Biology (2015) 15:71 DOI 10.1186/s12862-015-0344-y Bohoussou K. H., Cornette R., Akpatou B., Colyn M., Kerbis Peterhans J., Kennis J., Sumbera R., Verheyen E., N'Goran E., Katuala P., Nicolas V. 2015. Patterns of diversification and historical biogeography of the Afrotropical rodent genus Malacomys (Rodentia, Muridae). Journal of Biogeography (2015) doi:10.1111/jbi.12570 Falay D., Kuijpers L.M.F., Phoba M.-.F, De Boeck H., Lunguya O., Vakanyaki E., Bertrand S., Vanhoof R., Devlieger H., Van Geet C., Verheyen E., Ngbonda D., Jacobs J. (resubmitted). Microbiological and clinical findings of an outbreak of non-typhoid Salmonella bloodstream infection associated with severe anemia, Oriental Province, Democratic Republic of the Congo. PLOS Neglected Tropical Diseases Participations at international conferences 9th European Congress on Tropical Medicine and International Health (ECTMIH), 6-10 September 2015, Basel , Switzerland. Royal Academy For Overseas Sciences Multidisciplinary Workshop, Vulnerable Coastal Areas (Brussels, Thursday 10 December 2015) Abstracts in meetings

		1. Laudisoit A., Baelo P, Mussaw Awazi M, N. Van Houtte, Rouquette R., Amundala N, Leirs H, and Verheyen E. 2015. Biodiversity, Bushmeat and Monkeypox in the Democratic Republic of the Congo: another viral threat upon larger cities? 9th European Congress on Tropical Medicine and International Health (ECTMIH), 6-10 September 2015, Basel , Switzerland. page 30-31 2. Laudisoit A. , Verheyen E., Collet M., Muyaya B., Mauwa C., Ntadi S., Michel B., Leirs H., Janssens de Bisthoven L., Vanhove M., Micha J-Cl;. 2015. The coastal pearl of the Democratic Republic of the Congo: the Mangrove Marine Park, a neglected RAMSAR site. Poster presentation at the Royal Academy For Overseas Sciences Multidisciplinary Workshop, Vulnerable Coastal Areas (Brussels, Thursday 10 December 2015), page 2 3. Verheyen E. 2015. A tale about knowledge and empowerment: Rebuilding biodiversity related capacities in the DR Congo. 2015. Poster presentation at CEBioS meeting: 'Biodiversiteit en ontwikkeling: Erfgoed op wereldschaal'. Koninklijk Belgisch Instituut voor Natuurwetenschappen , 26/11/2015, page 18 D Training in Belgium • 3 students from Peru • 2 students from Vietnam Formulation mission Vietnam • Official launch of web-site with forum maintenance

Activities	Report 2015
1.2.1.(A) Supporting taxonomic research through Prospecting new partnerships in e.g. East Africa Call for 4-5 'classical' projects Follow-up of projects and publications/dissemination/reporting	done
1.2.2.(B). Supporting the monitoring of habitats for the management of ecosystems through For DRC, Burundi, Benin **Training + Follow up**	See Part II, institutional Cooperation for Bénin and Burundi

•Workshops + Follow up subsequent practice •Syllabi preparation •Expert missions •Supplying Basic Equipment and documentation •Collecting data on habitats state – Data base (feeding + exploitation) •Lexica (Redaction + Publication) **Promotion of research** •Contribution to the identification of the topics • Supporting theses: preparation + publications •Help to Implement the recommendations issued by research •Attending the yearly Coalition pour la Conservation au Congo (CoCoCongo Coalition pour la Conservation au Congo –CoCoCongo Une plateforme d'appui à l a conservation des Aires Protégées regroupant l'ICCN et ses partenaires) meeting	
1.2.3. (C). Cooperation with the University of Kisangani for the taxonomic study and the monitoring of lowland forests through Selection of 3 PhD candidates with a relevant research programme Training of the selected PhD candidates in Belgium (RBINS, RMCA, Flemish and Francophone universities, & when necessary foreign experts) Expert missions for local follow up of progress made by 3 PhD students Financial support for field work, equipment, documentation, transport Financial support for 3 PhD thesis defence	3 students came to Belgium. E. Verheyen had missions to Kisangani.
1.2.4.(D) Application of the COHERENS model for integrated coastal management and monitoring of ecosystems through Setting up and implementing partnerships Supporting development of web sites Supporting visitor programmes Facilitating communication between independent participants Distance E-coaching Producing marine policy reports Coaching towards an independent use of the COHERENS model and its applications	Training in Belgium • 3 students from Peru • 2 students from Vietnam Formulation mission Vietnam Official launch of web-site with forum maintenance

Coaching in developing site-specific applications with the code in function of policy needs, i.e. develop a site specific biological module or wastewater module Workshop for advanced users Support with scientific arguments for stakeholders Establishing links between physics, sedimentation and biodiversity is scientifically documented.	

Table 15: logframe (partim) for SO1, 1.2.

Activity 1.2.1. (A). Supporting taxonomic research

The 12th internal GTI call for proposals was launched in early 2015. This call was addressed to RBINS researchers. The project must be built around the provision of training to students, scientists and/or technicians in the South. The project must contribute to strengthen local institutions. It must also have an applied component that either targets the conservation or sustainable use of biodiversity or that is essential to better understand the services provided by ecosystems.

We selected 5 high quality projects.

The selected projects are the following:

1. 'Training of trainers in ant, bee and insect taxonomy in Western Africa at Station d'écologie de LAMTO, Ivory Coast' by Dr Wouter Dekoninck
2. 'A step further in the Entomodiversity of Vietnam (part VI)' by Jérôme Constant and Dr Patrick Grootaert
3. 'Taxinomie, systématique et biodiversité des oligochètes des eaux souterraines du Bénin' by Dr Patrick Martin
4. 'Advancing herpetological research and collection building in Africa by North-South and South-South networking' by Dr Zoltan T. Nagy
5. 'Exploration and conservation of the algal and echinoderm biodiversity of Kwazulu-Natal, South Africa – building modern voucher collections and increasing local taxonomic capacity' by Dr Yves Samyn.

As usual, 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. 'Training of trainers in ant, bee and insect taxonomy in Western Africa at Station d'écologie de LAMTO, Ivory Coast' by Dr Wouter Dekoninck

Most countries of Western Africa, like Ivory Coast, Sierra Leone, or Togo have a megadiverse entomofauna. Nevertheless, entomological diversity, including ants of these regions remains poorly known. Recent ant surveys by Dr. Yeo Kolo hosted at Lamto ecological station and other sites in Ivory Coast (Yeo, 2006; Yeo et al., 2011), as well as entomological studies at Lamto in the context of earlier GTI 2 projects (Tomasovic & Dekoninck, 2014; Limbourg, 2014) indicated that its entomological and especially its ant fauna is extremely rich, unique and taxonomically important. Moreover first results also indicate that this special entomofauna is sensitive to global changes such as deforestation, climate modification and probably also introduction of invasive species.

Besides general attention for soil-dwelling entomofauna groups, the main focus of this year in depth taxonomy training of local Western African Trainers in Taxonomy (further called WATTs) will be on ants and bees but as well on the other insect fauna of Ivory Coast in general. Ants and bees are one of the most informative and tractable groups for biodiversity evaluation and monitoring because they are ecologically and numerically important, sensitive to environmental changes and easy to collect in a standardised way. Unfortunately, in Ivory Coast, ants (Kone et al., 2012) and bees (several publications in prep.) are only recently studied. These recent studies indicate a very diverse fauna which has important implications on other entomofauna groups.

The general aim of this project was to enhance the knowledge on entomofauna and standing ant and bee taxonomic capacity in Western Africa, starting in Ivory Coast. The specific aims of the project were to provide a training to 4 young West-African Teachers in Taxonomy (further called WATTs) from Ivory Coast to develop the skills to train young scientist Bachelor and Master students in entomology and to teach them how:

- to disentangle the taxonomic status of several assumed ant and bee species and genera;
- to organize a 8 day-long ant/bee course (22/01-29/02/2016) on ant and bee taxonomy and ecology in the LAMTO research station (presentation of LAMTO see film on https://www.youtube.com/user/Halicte). This training was followed by 13 Ivorian students and 2 students of Republic of Guinea and 3 WATTs from Ivory Coast, one WATT working in Sierra Leone;
- to develop a reference-type collection, using the best modern sampling and curation techniques;
- to understand the importance of a good practice of adding type and other material to a collection;
- to (re)describe species and genera;
- to deposit specimens in the LAMTO and RBINS' entomological collections to provide high quality reference material allowing local and international specialists to study the individuals collected in the future.

To attain this objective, these WATTs were supervised by an international team of 4 European and 2 Ivorian taxonomists (with focus on myrmecology and apidology) and collection curation during one week. The course was composed of lectures (in French and English), laboratory works, and field samplings in order to give a thorough overview of why and how to train students working on ants/bees.

Fig. 15: Five Ivorian students and instructor Thibaut DELSINNE (France) ready to collect bees in front of the Bandama river which borders LAMTO (Photo@Wouter Dekoninck).

The main objective of this project was to train 4 young scientists how to train students to collect and recognize one of the listed entomofauna groups and launch them in a profound collaboration with RBINS taxonomical specialist or international collaborators. It is important that the trained young scientists can rely on specialists connected with RBINS to develop their own taxonomical studies and training skills. Also 13 students biology of the Université Nangui Abrogoua Abidjan and Republic of Guinee were invited so the WATTs immediately had real students to practice. Moreover these students also benefited from the course to receive a general training in ant/bee taxonomy.

Finally another long-term objective was to continue in developing in LAMTO/Abidjan a modern reference collection of regional, national, and international importance, using the best international standards, and to provide material allowing state-of-the-art mounting and study of the specimens. These collections - however already started in 2013, 2014 - needed further elaboration to develop to a reference-collection for the region.

During the training, the high instructor to WATTs ratio, as well as the high WATTs to student ratio allowed the instructors to supervise the young scientists individually. Moreover the complementary experiences and specialities of the instructors contributed to the high-quality level of the course.

During the day, field work and labo work were programmed from 8:00 am until 5:30 pm. Each evening at least two lectures of instructors and/or WATTs were planned. Some students also presented their bachelor work. These presentations are available online here.

Fig. 16: Laboratory work at Lamto Ecological Research Station during the ant/bee course(Photo@Wouter Dekoninck).

During the course, four groups of students, WATTs and instructors were formed. Each group worked on a specific topic. In this working groups, time between field work, lab work and discussions with the instructors and WATT was designated according to the specific program within each working group. In each group students, WATTs and instructors worked together on a specific topic of research linked to running research programs at Lamto with special attention for taxonomy and collection management. At the end of the course, the students presented their results as a Powerpoint presentation.

All relevant information is available here.

Project 2. 'A step further in the Entomodiversity of Vietnam (part VI)' by Jérôme Constant and Dr Patrick Grootaert

The project aims to go on developing knowledge and study of Vietnamese entomofauna. It is the continuation of the 2014 GTI project 'A step further in the Entomodiversity of Vietnam (part V)' with the addition of 2 new Vietnamese colleagues of the Vietnam National Museum of Nature (VNMN).

The project can be divided into 4 parts. The first part deals with the entomofauna inventories in selected natural areas of northern Vietnam, the second part deals with the assessment of the entomological collections of VNMN, the third part with the workshop given in VNMN about captive breeding of stick insects and citizen science initiative on taxonomy in primary schools, and the last part with the communication efforts about the project.

1. Entomological Inventories

Four sites have been sampled: Ba Vi National Park, Ba Be National Park, Cham Chu Nature Reserve and Me Linh Biodiversity Station. The locations range in altitude 150-1600m asl. The highest altitude explored was around 1200m in Ba Vi. Light trapping was done each night, whenever possible in 2 places the same night (when power sources were available). Sweeping, beating and sight collecting was done during all day and also during the night, using headtorches and torches.

As a general trend, the insects were fairly abundant and specimens belonging to most insect groups were collected. The material brought back to be included in the collections of RBINS has been attributed the General Inventory number 33.092.
Several papers by the participants dealing with new species collected during the GTI missions from 2010 to 2015, or illustrating the progress of their GTI collaboration, were recently published or are submitted for publication (see GTI website here). Most of those papers are published in online, international, peer-reviewed, open-access journals so that they are easily available to all scientists worldwide at no cost. More are on the way.

The rangers and authorities expressed great interest in the scientists' work who received precious help from them. About 1200 photographs documenting insects and biotopes were taken during the fieldwork. They will be used to illustrate scientific papers etc... The species lists will be provided to the authorities of the different national parks by H.T. Pham.

2. Assessment of the VNMN entomological collections

On August 1st, 2014 H.T. Pham started to work as Head of the Specimens Collections Department at the Vietnam National Museum of Nature (VNMN). The Museum now plans to relocate the collections in bigger and better equipped rooms, what is necessary to reach the high standards of a national museum with international ambitions in terms of research and reference position.

New good quality drawers have been purchased and will be very useful to store the growing entomological collections of the institution. A mass of material remains unmounted on cotton layers and, as such, is unavailable for scientific research. We propose to prioritize the mounting of those specimens which will greatly increase the richness and interest of the VNMN entomological collections. A complete check of the unidentified Auchenorrhyncha specimens revealed a new species of Nogodinidae of the genus *Orthophana*, which was described by JC and HTP and named *Orthophana maichiae* in honour of Maichi, the daughter of Prof. Nguyen Trung Minh, director of VNMN.

3. Seminars on "Captive breeding of Stick Insects" (by J. Bresseel) and on "An innovative Citizen-Science project: Primary school pupils helping scientists to describe a new Stick Insect" (by J. Constant)

Two seminars were given at VNMN this year by RBINS visitors JB and JC. The audience (15+ persons) was from VNMN, IEBR and Hanoi University:

- The seminar on captive breeding of stick insects was asked for by VNMN because the institutions has some projects of new exhibition with living insects, like in the "vivarium" at RBINS. Interests of captive breeding for scientific and pedagogic purpose, as well as the technical aspects, were explained.
- The second seminar on a citizen-science project which included children into the scientific process of the description of a new species, received also a lot of interest, especially from some participants who are involved in education process at different levels. The RBINS researchers would like to export that kind of activities to Vietnam, which were organised in Belgium with the support of the Belgian GTI NFP (see also https://www.naturalsciences.be/en/news/item/2677/).

4. Communication

The organisation of the citizen-science activity in primary schools is an output of this GTI project. It received attention from the media and the Dutch-speaking TV program for kids "Karrewiet" broadcasted a short document filmed in one of the schools (https://www.ketnet.be/Karrewiet/10-maart-2015-wandelende-tak). It was also treated in the "Journal des enfants", a French-speaking paper designed for children, and even in a Japanese science information journal for kids and teenagers. A short documentary was made and provided on youtube by the Dutch-speaking science information journal EOS (https://www.youtube.com/watch?v=Wvfjkqv-7ug). This activity will also be highlighted in the 2015 annual report of RBINS.

Fig. 17: Pupils visiting the Museum's vivarium on 27 April 2015 during the closing event of the citizen-science project at the RBINS (Photo@Marie-Lucie Susini).

In March 2015, a paper describing three new species of stick-insects from Vietnam by JB and JC led to an invitation to the Dutch-speaking TV show "De schuur van Scheire" (https://www.youtube.com/watch?v=QzEDHUznTag). They had the opportunity to communicate about their GTI project in Vietnam and on taxonomy more generally. This event received also quite a lot of attention from the media in the Dutch-speaking part of Belgium as the presenter, Lieven Scheire is quite famous there (https://www.naturalsciences.be/nl/news/item/2691).

To conclude, 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.

The new participant, Mr Van Dat Nguyen (VDN), showed great interest during the fieldwork and capacities to spot the specimens in the jungle and to learn quickly from the "field taxonomy training". After three weeks of fieldwork, he was able to identify many specimens to family level. Numerous new species were found during the 2015 expedition. A few of them were described in the meantime and many more will be described in the future by member of the staff or by specialists abroad.

As a biodiversity hotspot, Vietnam contains many more species of insects than what in currently recorded. We have collected a lot of new species which await description. The lack of time and specialists (taxonomists) heavily impedes the progress of the knowledge of Vietnamese entomodiversity. In the meantime, habitats are destroyed or damaged and it is clear that there is an emergency to document and protect the natural richness of the country.

The researchers wish to go further with their collaboration between the RBINS and VAST (VNMN + IEBR). Many projects of new papers are on their way and the staffs are very motivated to go on. They hope to receive continued support from GTI NFP. Large areas within the country have not yet been sampled.

Fig. 18: Left to right: Phasmid *Lonchodes* sp., typical landscape at Ba Be National Park, *Macrocheraia grandis* (Photo@Jerôme Constant).

Project 3. '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:

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 :

a) de fournir une liste détaillée et une collection de référence des oligochètes des eaux souterraines à l'échelle nationale ;
b) 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» ;

c) 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 ;
d) 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) ;
e) 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. 19 : Echantillonnage du puits BEN002 (Sékou Tankpa) (Photo@P. Martin).

Les résultats obtenus sont les suivants :

Base de données « Eaux souterraines du Bénin »

L'ensemble des données récoltées a été encodée dans un fichier Excel comprenant 7 onglets (Stations – 105 enregistrements, Puits – 105 enregistrements, Ech Eau – 43 enregistrements, Ech Faune – 151 enregistrements, Métadonnées, Spécimens EtOH – 110 enregistrements, Métadonnées Spécimens EtOH), dont l'architecture a été conçue en vue de la création future d'une base de données relationnelle sous Access.

Cette base de données contient toutes les informations sur les puits échantillonnés en juillet 2015 mais également celles concernant les puits échantillonnés par Moïssou Lagnika au cours de sa thèse de doctorat. 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. Les documents relatifs à la base de données sont disponibles sur le site du PFN GTI belge ici.

Banque de tissus de référence : Oligochètes du Bénin

Le matériel d'oligochètes a été identifié sommairement, après examen à la loupe binoculaire, et un fragment postérieur de chaque spécimen a été prélevé en vue d'analyses moléculaires. Les fragments ont fait l'objet d'extraction de l'ADN (54 extraits). Les parties restantes sont conservées individuellement dans des tubes séparés et font l'objet d'une banque de tissus de référence. Ce matériel de référence sera utilisé ultérieurement pour les études morphologiques en complément des résultats moléculaires. A ces spécimens viennent s'ajouter plusieurs spécimens récoltés en 2013 et 2014 par Moïssou Lagnika et préservés en éthanol à des fins de traitement moléculaire. A ce jour, la banque de tissu contient 110 spécimens représentatifs de plusieurs familles et genres, les Naididae (*Aulophorus, Dero, Pristina*), les Haplotaxidae (*Haplotaxis*), les Enchytraeidae (non identifiés) et les Phreodrilidae (non identifiés).

Banque de tissus de référence : autres groupes

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 futures dans le cadre d'autres collaborations potentielles

« DNA barcoding » des oligochètes du Bénin et base de données moléculaires

Au cours de ce projet, la formation donnée à M. Lagnika a permis l'obtention de 16 séquences COI. Elles constituent la première étape devant mener à l'élaboration d'une base de données « DNA barcoding » des oligochètes aquatiques du Bénin et constituent des résultats préliminaires encourageants quant à l'adéquation du protocole utilisé et la faisabilité du projet.

Analyses physico-chimiques

Les analyses physico-chimiques donnent des résultats assez bons, compte tenu des normes de l'OMS en termes de potabilité de l'eau. Quelques valeurs anormales sont observées pour le fer, les nitrates, l'ammonium et le fluor. Ces valeurs peuvent poser des risques pour la santé des populations utilisatrices sur le long terme.

Des analyses en composantes principales (ACP), suivie d'une classification hiérarchique ascendante réalisée à partir des données physico-chimiques permettra ultérieurement de caractériser les puits et d'établir une typologie des stations. Associées à une projection des taxons récoltés sur les deux premiers axes de l'ACP, elles permettront de tester dans quelle mesure la faune stygobie des puits révèle la qualité physico-chimique de l'eau. Ce travail nécessite un investissement important dans l'identification de la composante faunique, lequel est toujours en cours.

En matière de renforcement des capacités, la mission d'échantillonnage a permis de compléter le matériel des partenaires béninois en sorte qu'ils soient autonomes pour des missions futures (pH-mètre, conductivimètre, oxymètre, receveur GPS, appareil photo), flacons et alcool pour échantillons, caisse en aluminium, etc.

Les capacités des partenaires béninois sont également renforcées par :

a) La construction d'une base de données géo-référencée des puits traditionnels du Bénin ;
b) La production de clés d'identification interactives des principaux genres du Bénin dans le programme XPer2 (gratuit, sous licence « Creative Commons ») ;
c) Une formation taxonomique aux oligochètes aquatiques donnée à M. Moïssou Lagnika ;

d) Une formation aux techniques de séquençage de l'ADN dans le cadre du DNA barcoding donnée à M. Moïssou Lagnika ;
e) Une introduction à l'étude de la faune des eaux souterraines et des oligochètes aquatiques donnée aux étudiants du laboratoire d'Hydrobiologie appliquée (Masters 1 et 2).

Sous réserve d'un financement pour les prochaines années, ce projet sera étendu à d'autres régions du Bénin afin d'obtenir une image réaliste de la biodiversité des eaux souterraines à l'échelle du pays.

A plus court terme, les développements futurs envisagés sont les suivants :

a) identification et DNA barcoding de tous les spécimens d'oligochètes échantillonnés ;
b) construction d'une base de données « DNA barcoding » de référence comme aide à l'identification des oligochètes des eaux souterraines ;
c) basculement de la base de données des stations et échantillons du format Excel vers le format Access ;
d) échantillonnage dans d'autres régions, représentatives des principaux bassins hydrographiques du pays ;
e) préparation de publications scientifiques.

Figure 20 : Echantillonnage du puits BEN010 (Kpakpame Zadramé)(Photo@M. Lagnika).

Project 4. 'Advancing herpetological research and collection building in Africa by North-South and South-South networking' by Dr Zoltan T. Nagy

Due to the lack of concerted and intensive surveys in the past and infrastructural and logistic challenges in the present, the herpetofauna of Central Africa, and partly that of West Africa is poorly known. This leaves a large gap in our understanding of Afrotropical amphibian and reptile diversity and hence an enormous potential for exploration.

In the last years (2008-2014), Z. Nagy and his colleagues focused their activities on intensive field work at different sites in the Democratic Republic of the Congo (DRC) with the ambitious aim to create a reference collection of amphibians and reptiles and trained a few key persons in the country. In addition to these expeditions, network building has been done.

With the current proposal they would like to extend this network by targeting a circle of prospective students and to extend the project to another, West African country, Benin. With on-site field trainings, 2-day intensive workshops and other capacity building measures they tried to help establishing a basis for long-term, independent research. Consequently, they wanted to inspire and support the creation of a South-South network in herpetological research. Facilitating and supporting such South-South collaborations and networking will make an important step in implementing biodiversity assessments and formulating advises to nature conservation in Africa – beyond country borders.

The 1st part of the project took place in Benin. The mission was carried out in October 2015. Together with a colleague from UAC, Benin, Dr Gilles Nago, Dr Z Nagy visited two universities in the country (University Abomey-Calavi in Abomey-Calavi in the southern part, and the University of Parakou in Kandi and Parakou in the northern part of the country).

They made a series of meetings, met the rector of the University Abomey-Calavi, contacted professors of several institutes and visited the zoological collection of the University Abomey-Calavi and a number biological laboratories. Furthermore, Z. Nagy gave two times two lectures (in Abomey-Calavi and in Kandi) to interested colleagues and students: one about molecular genetics and DNA barcoding, another one about this capacity building project and herpetological research activities in Central Africa (mostly in the Democratic Republic of the Congo). One of the main aims of this trip was networking, both among researchers from Benin, West Africa and Europe, as well as also between colleagues from Benin and the DRC. Possibilities of collaborations were extensively discussed. In addition, the researchers visited two field sites and spent two times two days there. The selected field sites included a fragment of dry forest at Niaouli (Southern part of the country) and an extensive savannah in the northernmost tip of Benin; the Pendjari National Park. They got logistic support from both universities.

During these field surveys, they also collected some specimens of amphibians and reptiles. The following field methods were applied: digital call recording of frog specimens, manual and automated recording of environmental data, handling and euthanasia of amphibian and reptile specimens, collecting tissue samples for molecular genetic (DNA and RNA), pathological and protein analyses; preserving and mounting specimens for wet and dry collections, data recording and databasing for bioinventory using current standards.

The 2nd and last part of the project consisted in a trip to DR Congo. Dr Z. Nagy spent 10 days in November and December 2015 in Kinshasa and Kisangani. Most time of this short period was spent in Kisangani, at the Centre de Surveillance de la Biodiversité (CSB), University Kisangani.

Dr Z. Nagy participated in several meetings both in Kisangani and Kinshasa with colleagues, collaborators and a few students. Beside partners and collaborators listed in the project proposal, new prospective collaborators were found: Loving Musubaho Kako-Wanzalire (Goma), Franck Masudi Muenye Mali (Kisangani) and Albert Lotana Lokasola (Kinshasa). Among others, extensive information material was given to all of these new colleagues. A few field sites in the close vicinity of Kisangani were visited. Some of these with uncomplicated access will serve for field sites of students for the experimental part of their thesis work.

Fig. 21: Left to right: Dry forest habitat of the Niaouli forest, southern Benin; audience at the presentation of Z.T. Nagy in Kandi, University of Parakou (Benin) and agama lizard, typical fauna element of the savannah habitats in North Benin (Photo@Zoltan).

Furthermore, Dr Z. Nagy presented the same two lectures in Kisangani that were also presented in Benin earlier this year: one about molecular genetics and DNA barcoding, another one about this capacity building project and herpetological research activities in Central Africa (mostly in the Democratic Republic of the Congo). One of the main aims of this trip was networking, both among researchers from the DRC and Europe, as well as between colleagues from the DRC and other, mostly West African countries. Possibilities of collaborations were extensively discussed.

Project 5. Exploration and conservation of the algal and echinoderm biodiversity of Kwazulu-Natal, South Africa – building modern voucher collections and increasing local taxonomic capacity' by Dr Yves Samyn.

The marine biodiversity of South Africa is particularly rich, and is characterized by an astonishing level of endemism (+30%). Despite considerable efforts in the last few decades, the country still lacks sufficient human and institutional capacity to identify and monitor its marine biodiversity adequately. The present project aims to augment standing taxonomic and curatorial capacity for algal and echinoderm biodiversity.

The project will work through three complementary approaches:

1) hands-on training in sampling algae and echinoderms through SCUBA-diving, snorkelling and hand-picking at low tides;
2) build-up of new state of the art reference collections (including relevant literature) in South Africa and where possible also in Belgium;
3) training of South African students, regional ecologists, biodiversity researchers and conservation officers in the identification and collection management of algae and echinoderms.

To achieve these approaches sampling of all five classes of echinoderms and green, brown and red macroalgae (seaweeds) will be done in different sites along the coast of the province KwaZulu-Natal, respecting all national and international legislation, followed by an intensive course on the identification of the sampled echinoderms and algae and the preparation of the samples for definite preservation in the collections of the South Africa Museum and the herbarium of the University of Cape Town with duplicates in the Royal Museum for Central Africa, the Royal Belgian Institute of Natural Sciences and the herbarium of the University of Gent if possible.

Next to this core taxonomic formation, introductory courses on nomenclature, anatomy and phylogeny will also be given. Important short-term outcomes of this project will be updated checklists of the

surveyed sites as well as scientific publications in peer-reviewed journals that will document eventual shifts in species distribution. This project will lead to a long-term taxonomic capacity in South Africa because the main trainees will act as duplicators in the nature conservation institute and the university to which they are attached. These institutional links, coupled to international cooperation, ensure that the project will be successful.

The project took place from 6 to 26 January 2016.

In total 25 sampling efforts of which 19 by SCUBA diving and 6 by intertidal collecting were undertaken. 338 samples of algae were collected. As all herbarium specimens have been deposited in the BOLUS herbarium, future benefits arising from this project will be shared with S. African scientists, *i.a.* through joint utilisation of data and ensuing publications. Subsamples of algae for future molecular systematics have been deposited in the collection of the University of Gent. 349 Echinoderm specimens were collected. Samples for subsequent molecular analysis have been collected. These are now stored at the RBINS, awaiting future study.

During the last weekend of the expedition a capacity building workshop was organized at the University of KwaZulu-Natal. During the preparations of this workshop the program was slightly adjusted to incorporate also an introduction to the biogeography of S. Africa, a presentation prepared by Prof Bolton. All given presentations can be found on the website of the Belgian GTI here.

The workshop was attended by 19 students (9 women and 10 men) and by the scientists and technicians involved in the project. During the first day of the workshop, the theoretical morning sessions were altered with hands-on session on echinoderms in the afternoon. During the second day, the same was done, but this time with hands-on training in algal taxonomy. After the workshop, each participant received a certificate of attendance.

Fig. 22: Prof E. Thandar and Dr Y. Samyn demonstrate the use of ossicles in identifying sea cucumbers.

To conclude, according to the organizers, this project can be called successful in terms of capacity building and in terms of scientific output. However, it is a pity that no night-diving could be done due to logistic and time-constraints as this would have boosted the diversity of the catch of echinoderms.

Activity 1.2.2. (B). Supporting the monitoring of habitats for the management of ecosystems

The annual reports for 2015 written by our institutional partners OBPE (Burundi) and UAC (Benin) are reported under Part II Institutional cooperation. The reporting here concerns specifically the capacity building activities involving CEBioS staff, especially Dr. François Muhashy.

Table of contents

(all pictures by François Muhashy)

1. Partnerships in DR Congo

1.1. Activities with ICCN, UNILU: Katanga, in the forest reserve of Luswishi (Katanga)

1.1.1. RBINS mission on the field in March 2015

This follow up of the preparation of forest reserve of Luswishi as a model site that can serve in the monitoring of habitats and in promoting the ecosystem services that are inherent to termite mounds comprises two main components:

1.1.1.1. Consultations to secure the Reserve

We found that the area of natural vegetation was replaced by food crops (cassava and maize fields, etc.) in several places and that trees such as *Parinari curatellifolia* were skimmed and exploited in carpentry. The most severe threat was the wish by some deciders at the level of the province who wanted to make it their private property (Fig. 23).

To face this situation, we promoted consultations that increased the engagement of Dean of the Faculty of Agriculture and his collaborators and we obtained the support from the General Secretariat of the administration UNILU, to take steps to stop the intrusions in the reserve.

Fig. 23 : forêt de type Muhulu luxuriante mais déjà en voie d'être convertie en ferme.

The following decisions were taken and applied later:

- Ask the governor of Katanga province to intervene to stop intrusions in this estate;
- Intensify visits to the reserve by researchers and students through internships and memories preparations;
- Placing billboards at various points, showing the public constantly the scientific status of this area;
- materializing better the limits using a tractor around the reserve so that it is distinguished from neighboring properties.

1.1.1.2. Research on dynamics of habitats and ecosystem services

- During the mission mentioned above we co-supervised on the field four UNILU the work of Four UNILU students who undertook research in the reserve. This support helped refine the types of habitats.
- They were recognized in correspondence to the following vegetations types: - grass savannas dominated by *Loudetia simplex* and *Hyparrhenia spp*.; -steppe savanna ; - Sub-shrub savanna; - shrub savannah ; -tree savanna ; -woodland ; - Clear forests (Miombo); - remnant dense dry forests (Muhulu).
- Concerning the ecosystem services our observations inspired among other things a direct assessment. For example productivity in edible mushrooms or tubers of yams (Pl. 2) can be established for a duration and a forest area considered; the monetary value of that quantities can be determined by reference to market prices.
- But if it were to assess the soil fertilization with Termite, the approach would be rather indirect. A deduction may be made considering the costs of inputs required on a field without termite to ensure production identical to that provided by termitosol.
- The experience drawn from the mission facilitated the development of a new contract for the continuation of research on ecosystem services.

Fig. 24 : Igname (*Dioscorea sp.)* en période de floraison, panicules bien visibles sur la liane.

1.1.2. Implementing of contract N° 2015/SO1-BES-2.2/68

With our partners at the UNILU, we focused on the quantification and monetization of ecosystem services provided by termites and the study of the species diversity of termites and on their inter- and intra-specific behavior in the ecosystem of miombo. The preparation of memoirs of master's degree and of PhD theses was launched:

•Theses of master's degree completed and successfully defended

-Kulondwa Sainzoga Shadrack : « Influence du type d'habitat sur les traits des constructions (caractéristiques physiques) de *Cubitermes sp* et leur diversité spécifique dans le Miombo ». Uder upervision by Prof. Mujinya Bazirake basile (UNILU).

The termites identified belong to the following taxa:
Cubitermes (ugandensis, pallidiceps et oblectatus), *Allognathotermes sp., Basidentitermes sp., Amitermes sp., Trinervitermes sp., Crenetermes sp.* et *Pseudacanthotermes sp.* Some of them are illustrated on Fig. 25.

Fig. 25: Images des espèces capturées lors de l'identification.

-Nday Lenge Heritier « Evaluation du taux de décomposition de sept espèces thermitophiles de la réserve forestière de Luiswishi ». Supervision by Prof. Mujinya Bazirake Basile (UNILU).

The objective of this study was to evaluate the decomposition rate of seven of termitophilous plant species in an experiment in situ.

• PhD projects

- Ntumba Ndaye François «Quantification et la monétarisation des services écosystémiques d'approvisionnement inhérents aux termitières des écosystèmes du Miombo ».

This research is co-supervised by Professors Mujinya Bazirake basile and Prof Ngoie Schutcha (UNILU) and Dr François Muhashy Habiyaremye (l'IRSNB);

-Patrick Kasangiji A Kasangiji « Influence des interactions interspécifiques et des conditions environnementales sur le comportement de construction des termites du genre *Cubitermes* dans le Katanga méridional ». Supervision by Prof. Mujinya Bazirake basile (UNILU).

Activities with ICCN, UOB, UNIGOM

Lexicon of habitats types and of the dominant plants in the Itombwe Natural Reserve (RNI)

The drafting of the manual entitled "Habitats Nature Reserve Itombwe" has made significant progress especially when Prof Masumbuko Ndabaga participated in this task during his visit at IRSNB (29.11 - 20.12/2015) (Fig. 26).

A detailed plan of chapters was established. The geolocation of data from sites considered was done on two different maps, one showing the eastern part and the other the western part of the Reserve.

Out of three hundreds photographs of plant species (trees, shrubs and herbs), serving to characterize the vegetation and their dynamics, 155 pictures were selected to illustrate the lexicon draft.

Tables of Latin names and their correspondent in five local languages (common names): Kifuliru, Kibembe, Kinyindu, Kinyarwanda and Kivira were also finalised.

Species groups which distinctly characterize one or another mountain altitudinal interval (low plateaus or highlands) were pointed out.

Fig. 26: Professor Masumbuko Ndabaga Céphas (UOB) and Dr F. Muhashy (RBINS) in a work session organized in December 2015.

1.2.2.Enhancement of the management of ecosystem services

1.2.2.1. In the Virunga National Park

The support of the research in this ecosystem followed the recommendations made at the workshop held in Goma in 2014 on the "knowledge of mushrooms that are to be valorized, especially those which are spontaneous and edible in the African Great Lakes Region" (Burundi, Rwanda and DR Congo).

Mr Jean-Claude Rizinde Hakizimana who was among 15 scientists entirely sponsored by RBINS at this event was encouraged to focus his DEA memoir at the UNIKIS on the "Inventory and Ecology of Edible mushrooms in the North Sector of the PNVi". This research is co-supervised by Prof. Honorine Ntahobavuka (UNIKIS), Dr Jerome Degreef (JBM) and Dr François Muhashy (RBINS).
He inventoried mushrooms in different types of forest habitats (Fig. 27), along the altitudinal gradient from the Semliki valley, up to the high montane belt of the Ruwenzori massif.
During his first field mission, 77 mushroom specimens were collected, dried and conserved. An ethnomycological investigation that he performed at the same time helped to establish a list of vernacular names of mushrooms in the three languages of the ethnic groups most represented in Ruwenzori sector, thus the Nande, Mbuba and Bambuti. It turned out that edible fungi from PNVi contribute much in feeding local communities and as source of their income.

Fig. 27 : prolifération de *Termitomyces microcarpus* à Kilya (PNVi) . Photo Jean -*claude Rizinde 2015.

This study is the first step in the process of domestication of wild mushrooms from the PNVi. The ultimate ambition is to promote the availability of mushrooms, to ensure that this resource can generate income for people in the vicinity of the park and it help to reduce the pressures on biodiversity.
A second field mission will take place in April 2016, after which Mr Rizinde will endeavour to isolate live strains of edible species in order to use them in mushroom farming.

1.2.2.2. In the "Réserve Naturelle de l'Itombwe »

•Mushrooms

To implement the contact IRSNB-UOB 2015/So1-BES-2.2/63 the team of Prof. Masumbuko Ndabaga carried out a research mission in these mountains of the Western bank of the Tanganyika Lake. Miss Biringanine Mugoli Elisabeth collected mushrooms from different forest habitats, where they are very abundant (Fig. 28).

The aim of her work was to compare the edible mushroom species in *Michelsonia microphylla* forests with those harvested in the forests dominated by *Uapaca spp.* and *Gilbertiodendron dewevrei*. The other objective was to assess the income drawn from fungi trade for the local population.
To date, 23 edible species were collected, most of which were identified after painstaking microscopic studies at the Botanical Garden Meise.

Fig. 28 : Biringanine Elisabeth à la récolte de *Lentinus sajor-caju* dans la Réserve Naturelle d'Itombwe

Nevertheless the knowledge of species represented by several specimens of the genera *Cantharellus* and *Termitomyces* remains problematic. New specimens should be collected in the coming months and kept in order to analyze their DNA. We expect that molecular studies reveal new taxa.

•Wild populations of coffee trees

During the mission mentioned above, wild populations of coffee trees were also discovered. A set of material was collected and preserved in silica gel and the corresponding specimens were brought to JBM herbarium (Belgium) where they are to be used for phylogenetic investigation. One of the objectives is to know whether these Rubiaceae are parents of grown coffee, in this case the "Arabica" which is well known in the Albertine rift; which could suggest the importance of populations of these plants as a genetic bank that it would be necessary to preserve.

Collaboration with ICCN, UNIKIN, ERAIFT, WWF

1.3.1. At the level of the general directorate of the ICCN

Two missions in the DRC in 2015, one of which was devoted largely to activities that involved the UNILU in the monitoring of habitats in the Luswishi reserve (Katanga), the other aimed to train the RDCBL staff on the monitoring of the évolution of habitats, were also an opportunity for conducting consultations with the authorities at the DG of ICCN. As consequence MM Kisuki Mr Mathe (DT) and Paul Nlemvo, Director of National Parks and Dr. Wilungula Balongelwa Cosma (DG) recommended the following:

- Extension of our activities (UOB -IRSNB) on (i) the presentation of the knowledge prerequired for the rehabilitation of Rusizi Natural Reserve; (Ii) Monitoring of fauna and flora in the Mbondo Wildlife Reserve (Fizi), Province of South Kivu;
- Continuation of the promotion of knowledge that can help to facilitate the development of activities that can create employment to local populations (especially pygmy communities which are highly dependent on forests for their needs) and provide them with alternative income.

Thus it was recommended in particular to continue the valorization of mycoflora services , to support ongoing research on wild coffee from RNI undertake assessments of the populations of *Prunus africana.*
- The need of more support to research on the dynamics of habitats and organization of workshops to upgrade the knowledge of ICCN staff in this area was also emphasized.

1.3.2. In the Reserve of Bombo–Lumene

Etat des lieux

The forests were relatively well preserved until 2009. The clearing was practiced heavily to expand the areas assigned to agriculture and to prepare charcoal for the urban market of Kinshasa.

Due to conservation measures strengthened along these last three years, a slow but real reinstallation of wildlife is fortunately now confirmed. The rangers reported the presence of antelopes, buffaloes, jackals, wild pigs, pythons; even *Cossypha heinrichi*, the bird with a white head, was rediscovered recently in the site where it had not been seen for 20 years.

Regarding the monitoring of RDCBL, during his mission in DRC from 3 to 15 July 2015, Dr. François Muhashy (RBINS) trained the local actors to conduct observations on the regeneration of the forest in this reserve (Fig. 29). Nine people, including the rangers and two young researchers who prepared previously their memoir of master degree on ecosystem services in this site with the support of the RBINS (2013-2014) took part in this training. The detailed list of participants is provided en annexe 00000.

Exercises were focused on the use of a GPS to localize the sites of observation, how to recognize habitats types and to collect standardized data on the evolution of the vegetation. The physiognomical criteria, especially the stratification and the surface covered, as well as the floristical composition of dominant plants were taken into account.

Fig. 29 : entraînement à la collecte des données standardisées sur l'évolution des habitats.

For each station examined, these applications were concluded by synthesis formula that reflected the physiognomic descriptors.
This training was conducted interactively. The answer of each participant was discussed.

Main conclusions from the observations on the dynamics of habitats subsequently to the forests destruction

• Shrubs and trees are increasing, which tends to afforestation. At the same time, there is expansion of an invasive species « *Chromolaena odorata* ».This is a perennial fast-growing herb, native to South America and Central America. It was introduced in tropical regions including Africa. It densely covers the surface, which hinders installation and / or the development of other plants.

• It has become more difficult to find plants known for their usefulness in the daily lives of population in the vicinity of the reserve. Indeed, plants such *Scorodophloeus zenkeri (Mimosaceae), Gnetum africanum (*Gnetaceae*), Sarcocephalus latifolius (Rubiaceae), Morinda morindoides (Rubiaceae), Psorospermum febrifugum (Clusiaceae),* etc., have been heavily damaged.
However this situation could improve if the monitoring continues to be strengthened and that this results in the reappearance of these species in preforest recruits that usually develop into young secondary forests and these into old secondary forests.

Ultimately, this stage can be succeeded by that of mature forest, mesophilic semi-deciduous, probably that of *Paramacrolobium coeruleum* that existed on this site until 2013.

Launch of Monitoring along a transect through the relict forest located at the MUA track

The mission team began installing the transect. It was agreed that Mr Baudouin Matuba (ERAIFT -ICCN) and Miss Florence Kamana (UNIKIN) and Miss B. Bokoma Eveline, a new researcher who had been assigned to the RDCBL would continue and complete this device, so that it can serve as a benchmark for the monitoring of the evolution of this forest.

It was also decided to demarcate permanent plots on which will be conducted studies of regeneration, change in the floristic composition and structure of secondary forests that dominate this forest island. The protocol to follow was outlined and demonstrations on how to apply it were conducted in the field during training.

A project prepared according to the call of BELSPO 2015 to promote the international networking of federal scientific institutions (ESFS)

Following the call launched by the Belgian Federal Science Policy (BELSPO) concerning the international networking of its Scientific institutions (including the Royal Institute of Natural Sciences of Belgium), Dr. François Muhashy submitted a project entitled « Création d'un Réseau des Mycologues de la Région des Grands Lacs d'Afrique». This project was selected definitively; which allows the MycoRGL network

to get € 29,990 in addition to financial contributions inherent to the institutions involved. The total amount available to the network thus reaches almost € 40,000.

The objectives set in the agreement between BELSPO and the Royal Institute of Natural Sciences of Belgium for the project are i) the establishment of a network and the formalization of its functioning; ii) standardization of methods for assessing the productivity of mushrooms in the region; iii) promoting the use of such methods as tools for valuation of mushrooms in all the forests of the region.
Specifically, two workshops that showcase the field, will be held in the region in the next three years.
By October 2018, the Network's operating rules will be formalized; the number of mycologists in the Great Lakes region of Africa will have increased; a list of edible mushrooms from the forest areas in the region will have been published.
The methodology of research on the productivity of mushrooms will be standardized for the whole territory; a database on mushrooms will be created and its content supplied by each of the network members; a website will be constructed and will facilitate the sharing of data by mycologists (with login forum) and, more broadly, will disseminate this information to the entire scientific community and the general public (open access).

1.5. Publications

Contributions scientifiques dans des ouvrages collectifs

Kes Hillman Smith, François, Muhashy Habiyaremye, Jerome Amube & John Siddle. Ch. 13 - Habitat change and fire management in Garamba. In Hillman Smith K., J. Kalpers, L. Arranz & N. Ortega (Eds) 2014. Garamba, Conservation in Peace and War. Published by the authors. 448pp. ISBN: 978-9966-1851-0-5.

Papers
Mangambu Mokoso, J., Muhashy Habiyaremye, F., Robbrecht, E., Janssen, T., Ntahobavuka Habimana, H. and Van Diggelen, R. 2015 - Ptéridophytes : Bio indicateurs des changements opérés sur la structure des forêts de zone de montagnes du Parc National de Kahuzi-Biega à l'Est de la R.D. Congo. International Journal of Innovation and Scientific Research ISSN 2351-8014 Vol. 16 No. 2 Jul. 2015, pp. 350-370 c 2015 Innovative Space of Scientific Research Journals. http://www.ijisr.issr-journals.org/

Manuscripts reviewed for the Bulletin of the Royal Academy of the Overseas Sciences

Saive, M., Danflous, J-P., Soulaimana, H., Fauconnier, M-L. - Phytochemical Study of Plants of Interest for cosmetics in Mayotte

Dougnon, V., Bankolé, H. Dougnon, J., Ahoyo, T., Accrombessy, S., Lamine Baba-Moussa, L. Biodigestion en anaérobiose des fientes de poulets : Impacts sur la qualité hygiénique des feuilles de *Solanum macrocarpon* Linn (Solanaceae)

Visites

- Prof. Houinato Marcel: 20-22.09.2015 – Partenariat IRSNB-UAC: Exécution du programme 2015

- Prof. Mujinya Bazirake Basile 24.09.2015 - Le point sur la mise en oeuvre du contrat IRSNB-UNILU N° 2015/So1-BES-2.2/68 d'instauration d'un système de suivi de la dynamique des habitats sur termitosols et de monitoring des services écosystémiques inhérents aux termitières dans la forêt claire de Kiswishi, à 30 Km de Lubumbashi.

2. Partnership with the OBPE in Burundi

Please consult pg. 29.

3. Partnership with the 'Université d'Abomey- Calavi' (UAC), Benin

Fig. 30: T-shirt with awareness message, Bénin.

3.1. Avancement de la recherche

Deux mémoires de master ont été préparés et défendus à l'université avec le soutien du programme IRSNB-UAC durant l'année académique 2014 -2015. Deux autres sont en cours d'élaboration. Durant cette séance il a été décidé de rencontrer les jeunes chercheurs impliqués en vue d'un échange sur les résultats obtenus et les détails sur les recherches en cours (voir point 3.3.)

Mémoires

Ceux qui ont été achevés et défendus avec succès (2014-2015)

DEA

Gbeffe A. K. 2015 – Impact of Termite Mounds on the Net Primary productivity and Diversity of Plant Functional Groups in Pendjari Biosphere Reserve (Benin, West Africa) 45 p. + Annexes

Master

Sabi Lolo Ilou, B. 2015 – Impact des feux de végétation sur les services écosystémiques dans la réserve de biosphère de la Pendjari au Nord-Bénin. UAC 64 p.

• En cours de préparation (2015-2016)

DEA

Kogou, S. Evaluation des Savoirs Endogènes sur la Gestion des Feux de Végétation et de l'Impact de la Pression Anthropique sur la Dynamique des Habitats dans la Réserve de Biosphère de la Pendjari.

Master

Edalo, V. Perception locale sur l'impact des feux de végétation en relation avec les services écosystémiques dans la Réserve de la Biosphère de la Pendjari

Licence

Adantin, A. Diagnostic de la direction du Parc National de la Pendjari et impact des feux de végétation sur les services écosystémiques

Deguenonvo, B. Diagnostic de la direction du Parc National de la Pendjari et perception locale sur l'impact de la gestion des feux de végétation dans cet écosystème

Les applications avec les acteurs dans le PNP

Conformément au programme 2015, un premier entraînement des éco-gardes sur la collecte des observations sur les impacts des feux a eu lieu en octobre dans le PNP. L'enregistrement des données sera intensifié en décembre durant une campagne prévue sur le terrain, dans laquelle 8 gardes de faune et pisteurs seront impliqués pendant 15 jours.

Une première version de la fiche MDH qui sera employée pour récolter ces données est prête et elle a été fournie aux agents du parc pour qu'ils puissent déjà s'exercer à l'utiliser et s'exprimer sur l'adéquation de cet outil.

Le lexique. Il est en cours de conception. Un plan a été élaboré.

3.2. Outils didactiques

• Fiche MDH

Suite aux échanges eus durant la première réunion (point 3.1.) une deuxième version de la fiche a été apprêtée. Un exemplaire est déjà mis à la disposition du délégué de l'IRSNB pour qu'il fasse des suggestions sur ce document. Le délégué de l'IRSNB a noté les siennes directement dans le fichier et l'a mis à la disposition de l'équipe de l'UAC (Annexe 2)

•Lexique

Les participants conviennent que chacun puisse fournir des suggestions concernant le plan de ce manuel. Le délégué de l'IRSNB a noté les siennes directement dans le fichier et a mis la version comprenant des commentaires à la disposition de l'équipe de l'UAC (Annexe 3).

•Base des données

Les participants constatent ensemble qu'elle n'a pas encore été conçue. En plus au niveau de l'UAC il s'avère que les chercheurs n'avaient pas encore compris que la base des données sera alimentée non seulement par l'information qui sera collectée à l'aide de la fiche MDH par des éco-gardes et les AVIGREF mais aussi par les résultats des mémoires. Au préalable le contenu de ces derniers devra être simplifié.

Compte tenu de cette situation, le délégué de l'IRSNB a proposé de s'inspirer de l'encodage des données qui a été effectué durant l'atelier qu'il a animé à l'OBPE en 2014 (annexe 4). Cette présentation et la mise de tableaux excel à la disposition de partenaire de l'UAC facilitera une prise de décision rapide pour concevoir la base des données sur les types des feux et leurs impacts sur les habitats et les SE.

N.B. Durant cette réunion les participants ont entériné notre demande d'aller sur le terrain pour nous rendre compte des progrès dans l'auto-appropriation des connaissances scientifiques sur l'usage des feux et de leurs impacts sur les habitats et les animaux du PN Pendjari.

3.3. Le point sur la collaboration entre l'UAC et le CHM Benin. 17.11.2015

Cette réunion a été focalisée sur l'optimalisation des synergies entre l'UAC et le CHM. Les représentants de ces deux entités béninoises ont fait le point sur l'état de transfert des connaissances scientifiques sur les feux AU CHM et ce dernier à ceux qui sont impliqués dans la gestion du PNP et au public dans son ensemble. Le rapport rédigé par Mr Akgpona Jean Didier (point focal a.i. du Bénin) exprime les réalisations et les aspirations dans le cadre de cette collaboration (annexe 1).
•Rencontre avec les Prof. Brice Sinsin (Recteur de l'UAC) et Houinato Marcel (coordinateur du projet IRSNB-UAC)

3.4. Réunion avec les représentants du CENAGREF

•Obtention des éléments de l'avant-projet d'aménagement de la Réserve de la Biosphère de la Pendjari.
Conformément la demande reçue deux mois plus tôt par Madame Brigitte Decadt (BELSPO) qui voulait disposer du plan d'aménagement de cette Réserve, nous avions écrit aux partenaire de l'UAC et ces derniers s'étaient adressés au DP Pendjari en sollicitant ce document. Finalement il nous a été fourni durant la mission de novembre ! Ce retard est probablement relatif à la grande taille du fichier dudit plan qui ne pouvait dès lors pas nous être envoyé par e-mail.

•The meeting held prior on the observations of habitats in this park.

Four presentations were given and discussed. These include the intervention of Dr François Muhashy (RBINS) on "the experiences drawn from the programmes carried out previously in DR Congo and Burundi" and Professor Marcel Houinato's presentation on "the results of the research that are available on wildfires in Benin".

During these sessions, vocabulary and relevant concepts that need to be simplified have been identified and the following other points were underlined:

- It was noted that no previous study relates specifically to the PNP. Yet it was clear that acquiring the capacity to choose the type of fire to be applied specifically to each type of vegetation of the PNP is one of the major concerns of managers of the park.
- It was recommended that the project can provide specific answers to various locations in the park.
- It has become necessary to simplify the content of the studies conducted elsewhere, especially in classified forests and to apply them to the PNP.
- Given that the most advanced work was focused on the evaluation of biomass, this element needs to be consolidated by a section on quality, as it constitutes a major factor of attractiveness of animals.

•Préparation de l'entraînement des éco-gardes

Fig. 31 : échanges entre Mr Kouto Méryas, DP (à droite sur la photo) dans son bureau à Tanguiéta avec l'équipe de l'UAC et le délégué de l'IRSNB.

Nous avons fait le point sur la mise en oeuvre du programme du partenariat IRSNB-UAC dans le PNP comme au point 3 ci-dessus. Cette réunion a abouti aux décisions suivantes:
-Se rendre dans le parc avec les éco-gardes pour les entraîner à utiliser la fiche d'enregistrement des observations des impacts des feux sur les habitats et les SE. Impliquer principalement les personnes qui ont été déjà entraînées à cet exercice durant la mission de l'UAC en octobre 2015. En vertu de ce critère la liste des participants fut déterminée (Fig. 31).

•Collaboration entre les divers acteurs au PNP

Les AVIGREF

Jusqu' en novembre 2015 aucun membre de l'AVIGREF n'était impliqué dans le monitoring des feux dans le cadre du programme IRSNB-UAC. Des renseignements obtenus à ce sujet indiquaient que Mr Yoa Kassa D. Augustin, superviseur du « programme Coton » qui a représenté les AVIGREF lors de la formulation de notre programme en avril 2014 avait été muté dans un autre service et que son remplaçant n'était pas encore intéressé au programme IRSNB-UAC.
Selon le DP le rôle de chacune des parties prenantes au PNP était en cours de redéfinition ; les textes officiels attribuent la pleine responsabilité au CENAGREF, quitte à ce dernier de s'associer d'autres intervenants. Par ailleurs les chefs des municipalités avoisinant le parc sont pressentis comme représentants légaux de la population et ils devraient jouer un rôle plus important que celui d'une quelconque association telle que les AVIGREF. Nous avons noté que la collaboration de la direction du PNP et de la police était au bon fixe.

Le GIZ

Cette institution a aménagé des pare-feux entre les grandes entités du territoire du parc. C'est à l'intérieur de ces ensembles que les parcelles permanentes de monitoring des habitats et des SE sous l'action des feux ont été délimitées. Ces pare-feux protègent notre dispositif expérimental contre des incendies accidentels et de ceux qui seraient pratiqués par des braconniers au risque de perturber les expériences menées dans le cadre du programme IRSNB-UAC.
En marge de la réunion, nous avons demandé et obtenu un rendez-vous à Mr Bio Yacoubou Bassirou, Conseiller Technique Sénior du programme GIZ dans lel e PNP en vue d'échanger sur des synergies à développer d'avantage. La réunion a été fixée au 25.11.2015 à Natatingou (voir point 4.3).

3.5. Utilisation de la fiche de collecte des données sur les feux et leurs impacts

•Principaux avis concernant l'adéquation de la fiche de collecte des données.

Les difficultés signalées par les agents du PNP sont notamment

- l'hétérogénéité du niveau du personnel affecté à la collecte des données, quelques personnes ayant plus de connaissances et des expériences pratiques que leurs collègues. En effet, les éco-gardes ont eu plus d'occasions d'entraînement alors que les pisteurs viennent à peine d'être associés à cette activité.

- Peu de noms scientifiques connus des usagers de la fiche

Le délégué de l'IRSNB a saisi cette occasion pour réitérer l'importance de la simplification des connaissances scientifiques à travers des outils didactiques, principalement la fiche MDH adaptée et le lexique ; la nécessité des entrainements fréquents à l'usage de ces outils et la confection d'herbiers.

• Rendez-vous à Mr Bio Yacoubou Bassirou, Conseiller Technique Sénior du programme GIZ

En plus de ce qui est rapporté au point 4.1, l'autre information concernant l'appui de la GIZ au PNP consiste à élaborer un dossier qui rencontre les critères d'accès au fonds fiduciaire que la banque africaine de développement affecte à la gestion des savanes de l'Afrique de l'Ouest.

Activity 1.2.3.(C) Cooperation with the University of Kisangani for the taxonomic study and the monitoring of lowland forests

This report summarizes the activities that have been specifically financed by the DGD-RBINS framework agreement. Reports on complementary activities carried out in Kisangani (REFORCO project) are provided in the annual report of the DGD-RMCA framework agreement for 2015.

Supervision of the work of three Congolese PhD students

In 2015 we organized research stays for three Congolese scientists.

Project titles:

1. Falay Dadi Sadiki: 'Understanding of epidemics of invasive salmonellosis in Central-Africa'
2. 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)'
3. Prescott Musaba Akawa: 'Phylogéographie, zoonose et biodiversité des chauves-souris de la forêt de basse Altitude (Kisangani, RDC)'.

Activities

- The stays of Falay Dadi Sadiki and Casimir Nebesse Mololo, were preceded by three previous visit to the laboratories of their Belgian supervisors (respectively Dr Jan Jacobs of the ITM, and Erik Verheyen, at the RBINS/UAntwerpen & external expert Victor van Caeckenberghe UAntwerpen). Hence their stay continued the training they already received concerning laboratory practices (analyses), data analyses, and reporting (drafting reports & scientific publications). For Prescott Musaba Kasawa, who was selected to replace the late Philibert Tazole, it was only the second visit abroad.

- To ensure that their stays would be as efficient as possible, Falay Dadi Sadiki and Casimir Nebesse Mololo were asked to prepare a detailed overview of the status of their work, including a detailed planning before coming to Belgium.

- Falay Dadi Sadiki and Casimir Nebesse Mololo, were subjected to interactive sessions to further elaborate their programmes, to prepare their laboratory work, and to analyse their results. They were also assisted with the actualisation of their literature database, and were asked to list the missing links (data, analyses) that may be required to make their data publishable in international scientific journals.

- Falay Dadi Sadiki's attempt to secure an Individual PhD Sandwich Scholarship Programme (ITM-DGD) failed, despite the fact that he received a mail confirming that his project was awarded. With Dr. Jan Jacobs, he has decided to resubmit this redrafted proposal. Trying to obtain this scholarship through a second attempt. This seems a worthwhile strategy as this "sandwich grant" would allow him to spend the doctoral research time partly in the home institute/country and partly at ITM.

- Casimir Nebesse Mololo, was given the opportunity to overview the data he has gathered during the last three years. This allowed him to make a detailed inventory of his data, and to detect gaps he needs to fill in order to be able to complete his theses (Master thesis to be defended in February 2016, PhD defence possibly at the end of 2017)

- During his first stay at the RBINS, Prescott Musaba Kasawa was given the opportunity to learn how to find and gather recent literature on his subject, followed by some exercises on how to use this information to further elaborate his PhD project proposal. Special attention was given to making a combined inventory of all the bat samples he and his co-workers had already collected during previous field campaigns ((including the Congo2010 expedition). Finally, he received a brief theoretical initiation in DNA barcoding (molecular identification of animal species) in the molecular laboratory of the RBINS. Moreover, he learned to extract, amplify and sequence mitochondrial DNA from ethanol fixated tissues, which resulted in a first overview of the genetic variation, and genetic structuring in 7 widespread taxa.

Fig. 32. Fishing gear, near Yangambi, Congo River (photo@LucJdB)

Outcomes

- The outcome of the last visit of Falay Dadi Sadiki was an unsuccessful grant application (Individual PhD Sandwich Scholarship Programme (ITM-DGD)) that would allow him more facilities to continue his PhD research project. With the support of jan Jacobs (ITM) his application was improved and resubmitted.

- The outcome of the visit of Casimir Nebesse Mololo builds on the results of his previous stay. More in particular, he was assisted in the structuring of all earlier obtained data: (i) collected material and the corresponding documentation, (ii) results of molecular bar-coding of bush-meat samples from in and around Kisangani, (iii) the overview of the bush-meat market activities in Kisangani since 1979 till today, (iv) the comparison of the molecular identifications and the species names given to the purchased bush-meat, (v) the analyses of the proportion of protected species sold on markets, (differences observed in species composition of animals sold in the main and peripheral markets in the region), (vi) attempt to infer the profit margin of various bush-meat

products marketed, (vii) the details of the different types of mammals sold as bush-meat in Kisangani.

- Further, it should be noted that the 3 ex-grantees Bapeamoni, Gambalemoke, Mukinzi having a PhD are now nominated as "professeur associé" at UNIKIS.

Publications

Papers

- Jacquet F., Denys C., Verheyen E., Bryja J., Hutterer R., Kerbis Peterhans J.C., Stanley W.T., Goodman S.M., Couloux A., Colyn M., Nicolas V. 2015. Phylogeography and evolutionary history of the Crocidura olivieri complex (Mammalia, Soricomorpha): from a forest-based origin to a broad expansion across Africa. BMC Evolutionary Biology (2015) 15:71 DOI 10.1186/s12862-015-0344-y
- Bohoussou K. H., Cornette R., Akpatou B., Colyn M., Kerbis Peterhans J., Kennis J., Sumbera R., Verheyen E., N'Goran E., Katuala P., Nicolas V. 2015. Patterns of diversification and historical biogeography of the Afrotropical rodent genus Malacomys (Rodentia, Muridae). Journal of Biogeography (2015) doi:10.1111/jbi.12570
- Falay D., Kuijpers L.M.F., Phoba M.-.F, De Boeck H., Lunguya O., Vakanyaki E., Bertrand S., Vanhoof R., Devlieger H., Van Geet C., Verheyen E., Ngbonda D., Jacobs J. (resubmitted). Microbiological and clinical findings of an outbreak of non-typhoid Salmonella bloodstream infection associated with severe anemia, Oriental Province, Democratic Republic of the Congo. PLOS Neglected Tropical Diseases

Participations at international conferences

- 9th European Congress on Tropical Medicine and International Health (ECTMIH), 6-10 September 2015, Basel , Switzerland.
- Royal Academy For Overseas Sciences Multidisciplinary Workshop, Vulnerable Coastal Areas (Brussels, Thursday 10 December 2015)

Abstracts in meetings

1. Laudisoit A., Baelo P, Mussaw Awazi M, N. Van Houtte, Rouquette R., Amundala N, Leirs H, and Verheyen E. 2015. Biodiversity, Bushmeat and Monkeypox in the Democratic Republic of the Congo: another viral threat upon larger cities? 9th European Congress on Tropical Medicine and International Health (ECTMIH), 6-10 September 2015, Basel , Switzerland. page 30-31
2. Laudisoit A. , Verheyen E., Collet M., Muyaya B., Mauwa C., Ntadi S., Michel B., Leirs H., Janssens de Bisthoven L., Vanhove M., Micha J-Cl;. 2015. The coastal pearl of the Democratic Republic of the Congo: the Mangrove Marine Park, a neglected RAMSAR site. Poster presentation at the Royal Academy For Overseas Sciences Multidisciplinary Workshop, Vulnerable Coastal Areas (Brussels, Thursday 10 December 2015), page 2
3. Verheyen E. 2015. A tale about knowledge and empowerment: Rebuilding biodiversity related capacities in the DR Congo. 2015. Poster presentation at CEBioS meeting: 'Biodiversiteit en

ontwikkeling: Erfgoed op wereldschaal'. Koninklijk Belgisch Instituut voor Natuurwetenschappen , 26/11/2015, page 18

Main issues encountered/solved

- With the facilities of the CSB fully functional on the Science faculty campus, the local scientific staff enjoys a more reliable internet and electricity supply, which allows them to carry out their academic and scientific tasks more effectively than before. During 2015, the financial support of the CSB functioning was assured via delegated collaboration between Belgium and the EC through FLEGT/CSB.

- During 2015, part of the CEBioS budget was used to allow Hilde Keunen to assist the CSB team with the finalisation of an application for Worldbank support. The application was submitted and the proposed activities approved. The approval of the corresponding financial part of the application is pending.

Fig. 33. Centre de Surveillance de la Biodiversité, Kisangani, RD Congo

Recurrent problems

- Many Congolese researchers, read, write and speak English insufficiently well to independently write manuscripts that are acceptable for international scientific journals. Although Falay Dadi Sadiki has made significant progress, this remains a difficulty that we will have to continue to address. We have suggested that PhD students should be priority target audiences for the 'Academic English' modules that are offered in UNIKIS through the VLIR CUI project. Should this not suffice, new initiatives aiming at strengthening the capacity of the local scientific community need more specific/specialized language courses that are better tailored to the needs of their target audience. This issue was also addressed in the Strategic Plan of the CSB and the developed activities programme for the CSB will provide additional training in English academic writing for the CSB personnel, including the academic personnel of the University of Kisangani.

- The lack of basic skills of Congolese trainees to analyse data remains a real concern. Basic statistical skills are very limited, and the lack of experience using software packages to statistically

analyse results is a fundamental issue. From now on, we have decided to provide every trainee with the following free software packages:

- PAST (http://folk.uio.no/ohammer/past/) and accompanying training to ensure improved data analysis, with functions for data manipulation, plotting, univariate and multivariate statistics, ecological analysis, time series and spatial analysis, morphometrics and stratigraphy.

- MEGA (http://www.megasoftware.net/) is an integrated tool for conducting sequence alignment, inferring phylogenetic trees, estimating divergence times, mining online databases, estimating rates of molecular evolution, inferring ancestral sequences, and testing evolutionary hypotheses. MEGA is used by biologists in a large number of laboratories for reconstructing the evolutionary histories of species and inferring the extent and nature of the selective forces shaping the evolution of genes and species.

Activity 1.2.4. (D). Application of the marine modelling to integrated coastal management and monitoring

Activities of 2015:

1. Formulation mission Vietnam (14 April – 18 April 2015)
2. Improving capacity building skills
    a. official launch of the web-site
    b. Introduction of mini-lectures
3. Training
    a. Peru: Introduction to hydrodynamic models and advanced hydrodynamic modelling (20 September -29 October 2015)
    b. Vietnam: Introduction to hydrodynamic models and advanced hydrodynamic modelling (1 December - 23 December 2015)
4. Field trip

1. Formulation mission Vietnam

In 2015 we focused on establishing a cooperation (2015-2017) with Vietnam, more specifically with IMER (Institute of Marine Environment and Resources, Hai Phong, contact person: Vu Duy Vinh). A formulation mission was organized (14-18 April 2015) in Hai Phong with representatives from 15 different stakeholder institutes. During that mission the focus of the project is defined. The focus of the cooperation is on capacity building for physico-hydrodynamic models to manage biodiversity loss in Halong bay. Hydrodynamic models are the cornerstone of many applications that protect marine coastal ecosystems, the physical modules are additions to the hydrodynamic model that elaborate on processes related to water mass movements (for example sediment transport, oil spill, pollution). Appendix A contains the Memory of Understanding between RBINS and IMER that resulted from this formulation mission. A summary of the regional analysis can be found in the boxed text.

After analysis of the situation and the budget it was realized that only one chain of processes could be considered. It was chosen to focus on processes related to, because sedimentation processes are involved in many of mechanisms leading to biodiversity loss (landfill of Halong Bay and pollution).

Formulation mission in Vietnam, April 2015

The regional analysis made during the the stakeholder meeting of the mission to Vietnam 2015 revealed 8 different causes of biodiversity loss in Halong bay and showed that there is a direct connection between the ecosystem health of the bay and the well-being of its human population. Five of causes can be brought back to increased population, one to climate change, one to lack of knowledge by local fishermen and two to bad management of the area. The exact mechanisms of leading to a bad ecosystem-health and a decreased well-being of the population are exposed....

...Both the tourism and the fish sector become unsustainable because of the experienced biodiversity loss. This leads to impoverishment of the local villagers and a decrease of GDP. In conclusion it can be said that the consequences of the biodiversity loss in Ha Long .
bay can be divided into two clusters, one series of chained events leads to a loss of the ecosystem health, the others chain of events leads to an increased unemployment rate. The analysis also revealed that there are three self-enforcing mechanisms that play a role in the loss of biodiversity in the region.

Fig. 34: Visiting IMER, left the plankton lab, right the AAS to measure heavy metals. Halong Bay, the study site, some threats such as heavy shipping with oil spills, sedimentation, overfishing, tourism, urbanisation (Photo@L. Janssens)

2. Improving capacity building skills

a. Official launch of the website

The web-site was official launched during 2015. The launch had as a side effect an increased number of downloads and registrations of people from the beneficiary countries of the CeBioS programme. The url of the web site: http://odnature.naturalsciences.be/coherens/documentation

b. Introduction of mini-lectures

As more experience is gained in training people, it becomes clear that often the participants lack essential background skills (either scientific or ICT related). For this, remedial guest lectures are introduced in the programme, sometimes on demand of the participants, sometimes as part of the training. Several domain experts of the RBINS institute are engaged to give these lectures. The current available mini-lectures are:

- Particle tracking module (oil spill)
- Getting the best out of your computer with parallel computing on a laptop
- Getting the best out of your computer by using the computing optimisation schemes wisely
- Variability and mechanistic modelling: data assimilation
- Using satellite data for boundary conditions or validation of your model
- Sediment modelling: case study of the North Sea
- How to make an effective presentation
- Basic programming skills (FORTRAN and python)

3. Training

a. Peru: Introduction to hydrodynamic models and advanced hydrodynamic modelling (20 September -29 October 2015)

During the months of September and October a six week training course was organized. There were four students. One bachelor, one master, a PhD student and a high level professional researcher (see picture). The PhD student originates from Colombia, her participation was related to a former cooperation RBINS had with Colombia in the framework of this CEBIoS programme. The diversity of skills in the group was high, which required a high level of differentiation, especially in the first week, the next weeks were more open as the students worked on their individual set ups. The two novices to hydrodynamic modelling were paired, the Colombian student was a welcome participant as her English was well, in contrast to the Peruvian novice.

Fig. 35: trainees from Peru after the closure meeting of the capacity building at RBINS.

The Peruvian bachelor and master students here already last year and they finalized the work done during the previous workshop (Chimbote and Paracas), they also worked independently on a new case study in Caillau. This study site was not selected during the formulation mission, but is recently hot topic at IMARPE as the waste pipe from Lima that enters the marine waters in Callau is come under public interest regarding to pollution. Further on this test case was ideal as a first independent study as the availability of data is plenty. The third Peruvian participant worked on Sechura bay area. The evaluation for a six weeks course instead of a four weeks course was positive, the participants confirmed that in this time it was more feasible to end the setup of their case study. It will be aimed to have longer training courses in the future. Appendices B, C and D present their final powerpoint presentation. One of the participating students is hired by IMARPE in their marine modelling programme.

During training it developed activities related to the configuration and implementation of numerical tools in the application of the numerical model in the four study regions. This was used as an opportunity of transfer knowledge about the development of and techniques used in such numerical tools, hence a combination of technical support and knowledge transfer it developed during this stage of the project. The tools needed for this project are all based on a numerical tool to describe the hydrodynamic processes in each region. Hence, in each case study was initiated with a hydrodynamic application. After this first application, the studies will be directed in a serial of specific applications of the numerical tool for each specific case study that will be performed.
To implement the numerical model, the Marine Institute of Peru between 2012 and 2015 performed different oceanographic monitoring in the study regions (Callao Bay, Chimbote Bay, Sechura Bay and Paracas Bay), for record data of temperature, salinity, wind, and ocean currents on the surface and in the water column, also depth data were obtained (bathymetry). These data were used for validation and to initialize the numerical model (initial and boundary conditions).

The physical data were complemented with by the collection of water samples to determine the concentration of dissolved oxygen, nutrients and sediment in surface and in the water column, these data will be used in the second part of the project, with this new application of numerical tools.
The results are presented as horizontal distributions and time series in the surface layer and bottom during the time simulation in the study regions.

During year 2016, It is programmed to implement, tools numerical, that allow the application of the numerical model with the purpose of simulating the distribution of nutrients, dissolved oxygen, Plankton, and get better modeling of hydrodynamics in the different selected bays.
It is expected to develop work whose title is "Optimal description of the Hydrodynamics and coastal circulation pattern in the Bay of Sechura; Implications nutrient transport".

Activities Peru- 2015

Hydrodynamic setup: In general for each region of study selected, in the execution model was used the option baroclinic for consider internal forces within the equations of motion. The tide was imposed by the harmonic components. Hydrodynamic runs were performed over a tidal cycle in 24 hours. Then the scenario of simulation was just with wind and finally for both physical forcings (wind and tide).

Bahía de Sechura

The main problem of Sechura bay is a high concentration of phosphates associated with the distribution and transport of nutrients in the marine waters.
Numerical tools were developed in the implementing the COHERENS numerical model for to simulate the spatial and temporal distribution of marine currents under conditions of tide, wind and both (wind and tide). The simulation period was 3 months between January and March 2015.
The computational domain is constructed by the option GRID of the Surfer program in its version 12.0, a mesh calculation using the same software then was transformed, to place the data in the format required by COHERENS.

Bahía del Callao

Was implemented and adapted the COHERENS model, to simulate hydrodynamics, related only, with dynamics of coastal currents, on the distribution in the surface and sub-surface, using as physical forcing, the system of winds and tides together and separately. Besides the currents were simulated as time series for selected plans on monitoring conducted during 2014 IMARPE oceanographic stations.

Bahía de Chimbote

Was implemented and adapted the COHERENS model, to simulate hydrodynamics, related only, with dynamics of coastal currents, on the distribution in the surface, using as physical forcing, the system of winds and tides by separately.

Bahía de Paracas

Was implemented and adapted the COHERENS model, to simulate hydrodynamics, related only, with dynamics of coastal currents, on the distribution in the surface, using as physical forcing, the system of winds and tides by separately.

Plankton setup

Develop implementation and adaptation of COHERENS model, to simulate the biological part related to the distribution of plankton in the Bay of Callao.

Sediment setup

Develop implementation and adaptation of COHERENS model, to simulate the biological part related to the distribution of sediments in the Bay of Chimbote.

Status of activities

Log frame

Activity	2014	2015	2016
Training in Belgium on the use of marine numerical tools	x	x	
look for correct physical boundary conditions (bathymetry, tides, wind, rivers, …)	x	x	
run the model for different periods and validate the results	x	x	
writing a thesis	x	x	
e-consultation	x	x	
setting up a plankton model		x	
do the necessary adjustments to the plankton code		x	
train people in the use of plakton models		x	
e-consultation		x	x
setting up a sedimentation model		x	
do the necessary adjustments/manipulations to the code		x	
train people in the use of sedimentation models		x	
e-consultation			x
setting up a particle tracking model			x
do the necessary adjustments to the code			x
train people in the use ans manipulations of these type of tools			x
e-consultation			x

Hydrodynamic setup

Bahía de Sechura

It is expected to develop, the implementation and adaptation of COHERENS model related to biogeochemistry part to simulate the distribution of nutrients with emphasis on the impacts that can produce phosphates in the ecosystem of the Sechura Bay

Bahía del Callao

It is expected to develop, the implementation and adaptation of COHERENS model, related to biological part to simulate the distribution of Planckton with emphasis on the impacts that can produce in the ecosystem of the Callao Bay.

Bahía de Chimbote

It is expected to develop, the implementation and adaptation of COHERENS model, related to biological part to simulate the distribution of sediments with emphasis on the impacts that can produce in the ecosystem of the Chimbote Bay.

Bahía de Paracas

It is expected to develop, the implementation and adaptation of COHERENS model, related to biological part to simulate the discharge of pollutants with emphasis on the impacts that can produce in the ecosystem of the Paracas Bay.

Plankton setup

It is preparing the data on the collection of information volumes of plankton made in different oceanographic monitoring performed in the Bay of Callao during the year 2014.

Sediment setup

It is preparing the data on the collection of information of sediement made in different oceanographic monitoring performed in the Bay of Chimbote during the year 2015.

Conclusion

During 2015 it has been implemented and adapted the COHERNES model to simulate the dynamics of ocean currents in the ecositemas of Bays: Callao, Chimbote, Sechura and Paracas, hoping that this year we can develop the modeling of biological part, and biogeochemistry respect to the distribution of planckton, nutrients, sediment and pollutant discharge.

b. Vietnam: Introduction to hydrodynamic models and advanced hydrodynamic modelling (1 December - 23 December 2015)

During the month of December a three week training course was organized for two Vietnamese guests. One guest is a PhD student, but also a professional marine scientist at IMER, the other one is an MSc student and a professional marine scientist at IMER. The PhD student has previous knowledge of working with hydrodynamic models and a solid theoretical background. The MSc student has knowledge of programming with limited oceanographic background. During their stay they made a new model set-up of the study area, the hydrodynamic model works properly, which means this project is perfectly on track regarding the log-frame that was formulated during the set up meetings of the collaboration with Vietnam. Appendix E shows the presentation they gave after the workshop, since it was around Christmas time (23rd of December), we choose for a small round-the-table discussion with 5 people, during that discussion there was also room for debate on the route to follow.
The training course for two IMER person from 1st December to 24th December 2015 in RBINS. During this time, young scientist of IMER (Mr. Vu Duy Vinh and Mr. Pham Hai An) learn about new features of the newest version of the COHERENS (Ver. 2.9). Based on that knowledge, a hydrodynamics model was setup for RRD – Ha Long Bay coastal area.

Hydrodynamics setup

Data collection

In order to setup the model, a serial data in the study area was collected and upgrade. They include bathymetry, wind, wave, river discharge, tidal oscillation.

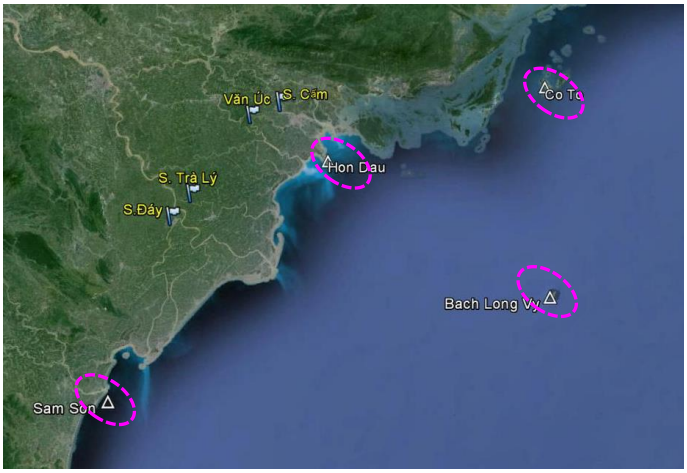

Fig. 36: position of gauging station.

Bathymetry and coastline in the study area were digitalized from topography map UTM VN2000 coordinate with scale 1: 50000 and 1: 25000 (figure 2). Bathymetry data in offshore used data from GEBCO-1/8 with 30 arc-second interval grid (Becker et al., 2009; Merri et al, 2009). Measured wind and wave data at some gauging station Hon Dau, Bach Long Vy, Hon Gai Van Ly were analyzed and using for model set-up (figure 3-6). These data measured with interval of 6 hours in periods 2012- 2014.


Fig.37: Bathymetry in the RRD coastal zone and Ha Long Bay.

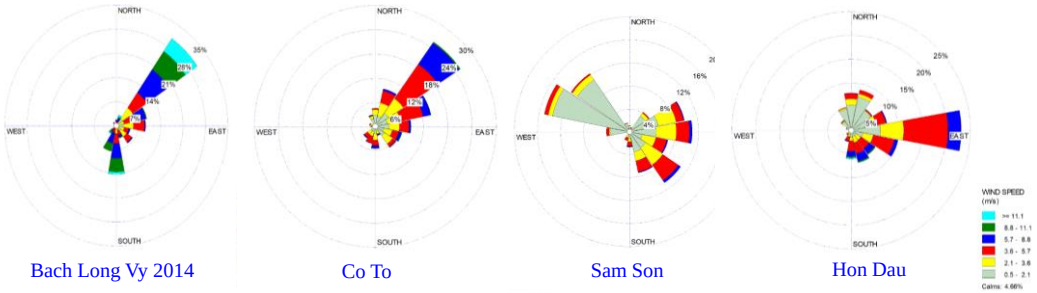

Fig: 38. Wind rose at some gauging station in 2014.

Fig.39: Stéphanie Ponsar giving a mini-lecture on effective use of computer resources.

Activities Vietnam 2015

Done for the tasks mentioned in the log-frame for 2015 are summarized below. A narrative report of the activities done to fulfill these tasks can be found in the sub sections of this section.

Task 1.1 'coordination of the work done by colleagues'
The input needed for the setup is determined and the results are described under the section 'training and hydrodynamic setup' The sediment setup for 2016 has been discussed and summarized in a excel format.

Task 1.2 'identify the design and criteria of comparison'
This was discussed between Belgian and Vietnamese colleagues during the training course. The main aim of the course was to determine the design and criteria of comparison of the model, the section 'training and hydrodynamic setup' explains what has been done in practice.

Task 5.1 hydrodynamic model reassessment
See section hydrodynamic setup for the results. A hydrodynamic model setup is prepared with COHERENS V2.9 with curvilinear coordinates. Some extra workhop were given during a training to get some extra background knowledge on hydrodynamic modelling.

Task 7.2 several IMER seminars
The workshop took place in December, so the work will be presented in 2016
The training course carried out late in 2015 influenced on the progressing of hydrodynamics model setup. However, missions in the first year is almost finish. Model validation and calibration will be finished by June 2016

Initial results

The initial simulation results show that along the coast the tidal regime is conform to commonly known rule: diurnal waves (O1, K1) have maximum tidal amplitude while semi-diurnal waves (M2, S2) have a minimum amplitude. The amplitude of tidal diurnal waves decrease gradually from North to South. On the contrary, the tidal semi-diurnal waves increase from North to South. With these initial promising

results, the model setup will be expanded to include waves, sediment transport processes and linking to ecological problem in Ha Long Bay.

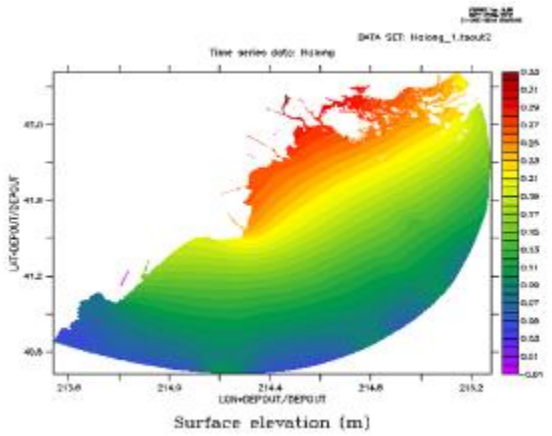

Fig. 40. Some initial model validation.

4. Field trips

One field trip was organized in 2015. Katherine Vasquez and Jorge Quispe went to Chimbote, Peru to take salinity and current velocity measurements. They also did a GPS survey to locate the exact position of the river mouth. Appendix F shows the report of the field trip. Appendix E is the report of this field trip.

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

Logframe (partim):

Expected Results	Output indicators	Report 2015
1.3 Monitoring data is fed into national indicator processes	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.	Within a competitive MRV call, five projects were selected to work on indicators at different levels (from feeding local data into indicators, to indicator policy at the national level), from: Benin (2x), Burundi, the D.R.Congo and Morocco.

Activities	Report 2015
1.3.1.Launch call for project on Aichi target indicators	Done, selected projects ongoing

Table 16. logframe (partim) for SO1, 1.3.

Activities:

By 2015 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, that 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 will launch each year a **call for projects** that will work on gathering indicator data for Aïchi objectives related to habitat/ecosystem monitoring, species data and have a relation with poverty eradication. To promote national and regional South-South collaboration, we envisage to alternate between calls targeting (1) French-speaking African countries, (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) and (3) English-speaking African countries.

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.

Logframe (partim):

Expected Results	Output Indicator	Report 2015
1.4 Scientific outputs are made accessible to users	• 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.	Event to name the new species of phasmid at the RBINS Guest lecture by L. Janssens de Bisthoven at the KU Leuven (Master aquatic ecology and sustainable development) Projects from SO2 and SO3 started in second half of 2015 and reports and results are expected in 2016. Posting on CHM will be done in 2016.

		Lexicon in Burundi: collection of data is ongoing, publication expected in 2016 AbcTaxa: publication in 2015 about sawflies Posters at conferences (Rochette, laudisoit, De Koeijer)
Activities		**Report 2015**
1.4.1. Taxonomic scientific tools production and dissemination of AbcTaxa manuals **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		See above

Table 17. logframe (partim) for SO1, 1.4.

Activity 1.4.1. Taxonomic scientific tools

Abc Taxa*: a series of manuals for taxonomic capacity building*

For 2015, we provided funding for the publication and distribution of one volume on sawflies and for the distribution of the already published manuals.

The planned volumes of Abc Taxa are the following

21. Polystomes of the world
16. Field guide for molecular studies of invertebrates
17. Guide to the taxonomy of ants, worldwide
18. Reptiles of Cuba (will be a massive volume)
19. African diatoms
20. Sponges of Peru, S America

AbcTaxa volume 14 was awarded as the **best bryological publication for the years 2013-2014 by the International Association of Bryologists**. The volume 15 on sawflies of Namibia and South West Africa was published in 2015.

The Committee for the Hattori Prize unanimously selected the book: Liverworts and Hornworts of Rwanda by E. Fischer. ABC Taxa vol. 14. 552 pp. (2013) as the best bryological publication for the years

2013/2014. The books treats 262 taxa, it has a key to these taxa, color photos of habit and microscopic details of the plants. It is available to the public on the Web, and will be useful not only for Rwanda and surrounding countries but for most African and tropical countries. It is a remarkable effort by one author in a country torn by wars and hence difficult to do scientific work. It is a very meritorious effort
and scientific contribution to bryology.

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 RD Congo in partnership with ICCN, two in Burundi in partnership with INECN and one in Benin in partnership with UAC. The production of syllabuses is also foreseen: one in RD Congo (ICCN), two in Burundi (INECN) and two in Benin (UAC).
Taxonomic popularization tools 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 this 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.
The data were collected in 2014 to provide material for the lexicon in Burundi, which will be published in spring 2015.

Event in order to choose the name of a new species of phasmids by Belgian pupils

In the beginning of year 2015, Jérôme Constant, a Belgian taxonomist from the RBINS decided to include children in an interactive science project that would allow them to discover and experience first-hand how biologists work". For 2 months, the children observed, described and took pictures of the different stages of growth and the behaviour of the stick-insects within their classrooms. The Phasmatodeas, discovered in Cambodia and belonging to an as-yet undescribed species, made themselves at home in terrariums installed specially for this project.

When installing the terrariums in the 3 classrooms, Jérôme Constant and his colleague Joachim Bresseel also gave the children a beginners' class in taxonomy and entomology. At the end of the project, Constant and Bresseel will include the children's observations in a scientific article describing several species from Cambodia and Vietnam.

And to cap it all, the children got to choose the scientific name of the new species which belong to the *Lopaphus* genus. Indeed, on 27 April 2015, the 3 primary classes were invited to the Museum of the Royal Belgian Institute of Natural Sciences where they could present the results of their work. They also got to visit the vivarium, discovered the insect collections of RBINS (17 million specimens) and got a guided tour of areas normally closed to the general public such as the laboratories.

At the end of that special day, the kids voted for the name of the new species among a list of propositions established by Jérôme Constant and Joachim Bresseel. The chosen name is *Lopaphus apsara.* Apsara is a female spirit of the clouds and waters in Hindu and Buddhist mythology. Images of Apsaras are found in several temples in Asia. Some ballet-like performance art of Cambodia is called "Apsara Dance".

CEBioS, especially the CHM and GTI NFPs, considered this initiative as a major way to sensitize young children to the scientific work of taxonomists and the importance of naming species in order to better know the nature that surrounds us. Thus we decided to provide funding for the event that took place on 27 April 2015. We offered the kids afternoon snacks (juice and biscuits), and we offered all the participants tee-shirts especially manufactured for the event with the drawing of a phasmid developed by CEBioS graphic designer.

Fig. 41. Dr Grootaert presenting the RBINS to the school kids during the event (photo: T. Hubin).

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

Background

The CBD's 'Clearing-House Mechanism' (CHM) is an essential tool for the implementation of biodiversity policy. It develops and strengthens cooperation and networking between stakeholders of various fields of biodiversity – governments, NGOs, consultants, academic institutions, environmentalists and others. By doing so, it enables the mainstreaming of scientific information into policies and plays a role in raising the awareness of all types of audiences on the importance of biodiversity.
The development of networks of websites forms the main pillar of the CHM approach for this programme. These websites are designed to host electronic information (policies, best practices, scientific papers, etc.) and databases (species, habitats, experts, etc.). As a corollary to the electronic networks, the CHM also fosters strong and active human networks, which are crucial for the gathering and restitution of the information and data
The Belgian CHM partnership is unique under the Convention on Biological Diversity and has proven its usefulness over the years. We will therefore continue our work, taking into account both the requirements from the new CBD Strategic plan 2011-2020 and the newly formulated strategy for our framework programme.

The 2015 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 mostly new Anglophone partner countries to familiarize them with our programme, opportunities through calls, prerequisites for project formulation and reporting, as well as assist them in improving their first submissions to the CHM call 2015.. We initiated a multi-annual work programme, particularly towards the consolidation of our contribution to governance processes.

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

Logframe (partim)

Expected results (ER)	Output indicators	Report 2015
2.1. Expertise in information management is built	• 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	4 national training workshops 162 persons trained Follow-up training in 2 partner countries 4 countries participate in SSC 80% of partner countries have added >20 pages in 2014 Tool is actively used in 2 partner country and started in 3 others. Procuration of solar panels for continuous supply of renewable energy for CHM activities and other ICT activities. Due to civil strife these still haven't been installed.

Activities	Report 2015
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.: 4 national training workshops (DR Congo, Myanmar, Tanzania and Togo) 2.1.2.: 2 follow-up trainings (Burundi, DR Congo) 2.1.3. 4 south/south collaboration projects (Cameroun/Morocco, Madagascar/Comoros, West Africa region/Togo-Guinea Bissau, Togo/Gabon) 2.1.4.: promotion of tool in Burundi and during regional meetings with partner countries.

Table 18. logframe (partim) for SO2, 2.1.

To build expertise in information management we are offering several types of capacity building activities related to the CHM to our partner countries. These activities are described in our plan 2015. 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.

As a follow-up to the African regional workshop on the CHM, co-organised by the Secretariat of the Convention on Biological Diversity, the Government of Cameroon and CEBioS, several Anglophone countries have asked in 2014 to become member of the CHM partnership offered by Belgium. In 2014 we have received request from and accepted in the partnership the following countries: Ghana, Guinea-Bissau, Mali, Kenya, Rwanda, Tanzania, Togo.

During 2014 we started our partnership with them and this resulted in different activities in 2015. During 2015 we have been able to honour the following capacity building activities request:

Table 19. Training courses organised with CEBioS funds

Dates	Type of activity	Place	Country	No part	Language	Trainer
23.3 – 3.4l	Initiation to the CHM and ptk website	Brussels	Guinea-Bissau, Mali and Togo	4	fr	H. de Koeijer and rM.-L. Susini
5-13.7	National training course for information exchange through the CHM.	Arusha	Tanzania	18	En	H. de Koeijer and M.-L. Susini
7-17.10	National training course for information exchange through the CHM.	Kisangani	DR Congo	42	FR	H. de Koeijer, L. Janssens and M. Vanhove
12-20.12	National training course for information exchange through the CHM	Lomé	Togo	23	FR	H. de Koeijer and M.-L. Susini Ondafé

Union of the Comores Islands, Sudan, Libanon and Iraq had demanded our assistance in setting up their national CHM in 2013 and reiterated the request in 2014. As these countries are not eligible for training through the funding of DGD we have contacted our partner countries to see who would be interested in assisting those countries through South-South collaboration. In 2015 the following training workshops (Table 10) have been organised or initiated through South-South collaboration or through

GEF funding. The trainers Madbouhi (Morocco) and Rahalimanana (Madagascar) are alumni from our programme. We also received a request from Myanmar through the IUCN regional office in Bangkok to give an introduction workshop and a small training on the CHM. H. de Koeijer went to Myanmar to give this workshop.

Table 20. Training courses organised through South-South cooperation or GEF funding in 2015

Dates	Type of activity	Place	Country	No part	Language	Funding	Trainer
19-24.1	Training course for information exchange through the CHM	Brussels	Iraq	2	EN	GEF	H. de Koeijer and M.-L. Susini
14-20	National training course for information exchange through the CHM	Naypyidaw	Myanmar	25	EN	GEF	H. de Koeijer
16-20.12	National training course for information exchange through the CHM (GEF funding)	Beirut	Lebanon	16	Ar	GEF/DGD	Mostafa Madbouhi (Morocco)

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 2014 – 2015 show a substantial increase in the number of visitors.

Expected result 2.2. Information flows are improved

Logframe (partim):

Expected results (ER)	Output indicators	Report 2015
2.2. Information flows are improved	• 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	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 than400 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. scientific bulletin has been published.

Activities	Report 2015
2.2.1. one call per year for CHM consolidation	The call was launched in 2015. 6 countries have started to work on 6 projects for CHM consolidation. 5 projects from 2014 are still running or closing in 2015

Table 21. logframe (partim) for SO2, .2.2.

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 2015, the eighth call for proposals was launched for the reinforcement of CHM websites. six of the fifteen projects submitted have been selected: **Burundi, Côte d'Ivoire, DR Congo, Morocco, Rwanda** and **Tanzania**. This year for the first 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 Rwanda was accepted however they informed us 4 months after the acceptation letter that they had been able to secure GEF funding for the project and preferred to renounce at our collaboration. This happened too late in the year to replace this project with another project that had ended on the 7th place.

Some projects that started under the 2014 were still running in 2015. 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. The project with Madagascar was extended due to illness of the CHM webmaster. Table 12 lists the projects under the 2014 and 2015 call running in 2015.

Table 22. The projects selected in the framework of the reinforcement projects 2014-2015

TITLE OF PROJECT	DATES	PARTNERS
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**
Collecte de données scientifiques sur la flore, la faune et les services écosystémiques de la zone refuge de la Biodiversité d'Agbaou (sud-ouest ivoirien) et Enrichissement du site CHM de la Côte d'Ivoire à partir des données collectées	Signed 12th of June 2015, end foreseen 31th of January 2016	Laboratoire botanique, Université de Felix Houphouet Boigny, Côte d'Ivoire
Développement et alimentation des Centres d'Echange d'Informations sur la Diversité Biologique régionaux.	Signed seventh of July 2015, end foreseen first of February 2016	Ministère délégué de l'Environnement, Morocco
Informer et sensibiliser les décideurs politiques et d'autres acteurs de la biodiversité en R.D. Congo	Signed thirtieth of June 2015, end foreseen First of March 2016	Centre de Surveillance de la Biodiversité, Kisangani, DR Congo
Reinforcement of the Rwanda Clearing House Mechanism	Never signed, collaboration stopped	Rwanda Environmental Management Authority, Rwanda

TITLE OF PROJECT	DATES	PARTNERS
Promotion and operationalization of Tanzania national chm	Signed fourteenth of July 2015, end foreseen 30th of March 2016, will be extended as funds have been transferred only in November 2015	Vice President Office, Dar es Salaam, Tanzania
Project 2014 started in 2014 and still running in 2015		
Promotion de la coopération sous régionale pour la mise en œuvre du centre d'échange d'informations sur la biodiversité (CHM)	Project signed on 30 September 2014, end foreseen 31 November 2016	Direction Générale des Forêts et des Ressources Naturelles (DGFRN), **Benin**
Mise en œuvre du volet CHM du Programme de coopération scientifique UAC – IRSNB: Phase 1	Project signed on 18 August 2014, end foreseen 31 November 2016	Direction Générale des Forêts et des Ressources Naturelles (DGFRN), **Benin**
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	Secrétaire Permanent – Conservation de la Nature et le Développement durable (SP/CONEDD), **Burkina Faso**
Mise à jour du CHM pour le thème biodiversité côtière et marine et renforcement de la collaboration avec la République des Comores	Project signed on 12 August 2014, end foreseen 30 June 2015	Office national pour l'Environnement, **Madagascar**
Transfert de la base de données sur la biodiversité du CHM du Maroc au CHM du Cameroun et formation à l'utilisation de ladite base de données	Contract signed 22 September 2014, end foreseen 31 March 2015	MINEPDED, **Cameroon**

Details per country

2015: Burundi, Côte D'Ivoire, DR Congo, Morocco, Tanzania

Burundi

The project had 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.

At the moment of writing the project report is under preparation.

The results of the long-term reinforcement activities are more difficult to measure. However one can note the distribution of number 13 of the scientific journal of the INECN as well as the addition of more than 400 additions on the CHM website which is again an augmentation of the added information. The CHM website attracted 8872 visitors over the reporting phase, with 36318 pages consulted. This is a 15 % increase of the number of visitors and 30 % decrease in page views compared to the 2014 reporting phase. This can be explained by the civil unrest that started in April 2015, which is still not finished in 2016. More information is available in the section on institutional cooperation of this report.

Côte d'Ivoire

The project had the following expected results:

Global objective

To add to the CHM a part of the collected data on the fauna, flora and ecosystem services of the "zone refuge de Biodiversité d'Agbaou" located in the South-West part of Côte d'Ivoire.

Specific objectives

- Make an inventory of the fauna, flora and ecosystem services of the "zone refuge de Biodiversité d'Agbaou";
- digitalise the scientific data (scans, digital photos, development of tables in Excel) of the "zone refuge de Biodiversité d'Agbaou"
- Organise and structure the collected data in databases;
- Make the collected data available on the CHM (Tables, scanned herbarium specimen, and photos of the flora);
- Put in place a follow-up system to update this information on the CHM;
- Raise the awareness of the public on the information available on the site.

Activities

Activity 1 : make an inventory of the fauna, flora and ecosysteme services (collection mission in the field)

Activity 2: digitalise the collected data

Activity 3 : Analyse and treat the data

Activity 4 : Organisation/exploitation of the data/blog

Activity 5 : Workshop to vulgarise the results of the project and to raise awareness on the CHM to the targeted audience (researchers, students, media, etc.)

Activity 6 : Writing of the activities report.

Due to problems with the transfer of the money to a wrong account the project has started later than foreseen. It was granted extra months to finalise everything.

DR Congo

The project had the following expected results:

Global objective

- Contribute to the reinforcement of the role of the CHM by promoting awareness of policy makers and other stakeholders in the field of biodiversity through the distribution of information about the good governance of biodiversity in DR Congo.

Specific objective

- the global objective will also make use of other types of exchange of information. It will capitalise on the support material developed under the 2014 CHM project as well as develop technical notes, debates, lobbying activities towards authorities and more.

Activities :

- make available through the CHM (cd.chm-cbd.net) published information (through diverse existing sources : Annual report CSB, scientific publications, legal texts,/international agreements), updates and sharables on the state of the biodiversity in the Congo Basin in general and the DR Congo in particular.

- Share knowledge and know-how of local populations on the cultural restrictions, ethno-botanic and ethno-zoological knowledge that assist the conservation of biodiversity.

- Share awareness raising information that encourage de prospection of biodiversity in zones that are hardly/little studies are available.

- Share awareness raising information that contribute to reinforce monitoring of endemic rare or endangered species in protected areas and forest in the region that are exposed to risques of degradation.

- Share awareness raising information that proposes guidelines to take into account environmental services in the teaching of natural sciences, biology at the level of primary and secondary education.

- Share awareness raising information that, for each taxonomic priority group, develop sustainable management plans in collaboration with the different national and international biodiversity stakeholders through the development of biodiversity forum platform to exchange knowledge and experiences on biodiversity.

The report of the project is available on the CHM of DR Congo through the following link: http://cd.chm-cbd.net/implementation/centre-de-sureveillance-de-la-biodiversite-csb/rapport-et-memoire-de-la-csb./execution-du-projet-intitule-informer-et-sensibiliser-les-decideurs-politiques.

The results show that a lot of information has been added to the site of the CHM of DR Congo. This and the activities to raise awareness through the media, posters as well as a meeting with different administrations have resulted in more visitors to the site. If internet in Kisangani would be better it might have had more impact.

Morocco

Global objective

To develop two regional CHM in two of the twelve regions of Morocco, train the contributors and advise them in adding information.

Specific objectives:

To make available through the national CHM the actual situation of biodiversity at local level and to take necessary actions to conserve and protect the biodiversity.

Activities:

A1 : Awareness raising workshop on the importance of the CHM at the national and local level with the partners working on locally on biodiversity.

A2 : Training of the contributors on the PTK.

A3 : Creation of the regional CHM committee and the distribution of the tasks.

A4 : recruitment of students to collect data and search for existing data on local biodiversity to be put on the regional CHM.

The report of the project is available through the following link: http://ma.chm-cbd.net/cooperation/cooperation-pour-le-chm/cooperation-avec-la-belgique/projet-de-renforcement-des-capacites-du-chm-pour-la-periode-2015/rapport-narratif-du-projet-ndeg-2015so2-chm-0261-developpement-et-alimentation

The project managed to get the provincial antennas of the ministry more involved in the question on biodiversity in general and how to share provincial information through the CHM. As the de-centralisation is still quite new, the project came on an opportune moment. The CHM national focal point will still have to do a regular follow-up to ensure that people also stay active.

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

Activities

- To popularize the National CHM

1) Conduct Stakeholders meeting/workshops to create awareness on CHM.

This will involve bringing together key/important stakeholders to get to know of the existence, significance and make use of the CHM website.

2) Prepare and disseminate CHM awareness raising materials (CHM fliers, Brochure, Posters).

This will involve designing and producing – fliers, brochures, and posters; and dissemination of these materials in national public events such as world environment day and other national environment awareness campaigns.

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

1) Identification and Preparation of relevant documents/publications to be shared on the CHM website. This will involve identification, sorting, and digitalization of available relevant biodiversity documents to be shared on the website.

2) Synthesis and Translation (into popular version) of key biodiversity documents. Translation into Swahili of the identified biodiversity documents for the general public.

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.

2014: Benin, Burkina Faso, Cameroon, Madagascar

Cameroon

The project had the following expected results:

- The webmasters are better equipped to add data and information on the Inventory System on the Biodiversity (SIB)of Cameroon.
- Data is entered in to the database
- Procedures are put in place to manage the database
- The SIB is online and accessible through the Internet.

In 2012 Morocco has developed a database to make an inventory of their national biodiversity. The demonstration of this database during the partnership meeting in Marrakesh, Morocco, inspired Cameroon to start a South-South cooperation with Morocco to also start the same type of system.

Results:

One webmaster followed a 4 day training in February 2015 in Morocco on how to adapt the SIB. His training was really useful as the technical specifications for hosting and adapting the SIB for Cameroun were different than earlier communicated by Morocco. A prototype for Cameroun was developed on a local server, tested and used as base for installing the SIB on a server in Cameroun.

After installation of the prototype a workshop was organized from 18-20 March 2015 in Cameroun to present the SIB to 20 scientists, discuss its functionalities and possible improvement as well as a hands-on training. Several recommendations were made at the workshop, the report can be found at ……. As a follow up to this workshop 3 scientist and the webmasters of the CHM organized from 26-27 March a follow-up workshop to test adding data to the SIB through xls files. The scientists had prepared these files with available data from their research. Some recommendations to improve the xls sheets were made during this workshop.

The SIB of Cameroun is available to the wider public. The webmasters are currently discussing with the IT of their Ministry on URLs to use, at this moment it is available at http://41.204.94.158/biodive/accueil.do. During the developing phase already information on 1192 species, 561 genres, 150 families and 71 orders have been added to the system.

Benin (1)

The project has as objectives:

- Global Objective
    - Development of a sub-regional concentration for the CHM between: Benin, Burkina Faso, Côte d'Ivoire, Niger and Togo.
- Specific objectives
    - Elaborate, implement and evaluate an Action Plan for the CHM for the 5 countries that participate in the project;
    - Share and replicate best practices of countries in ways to manage the CHM;
    - Build capacity in Togo for the implementation of the CHM;
- Activity 1 (A1): Development of an action plan for the 5 countries.
- Activity 2 (A2): Evaluation of the Action Plan (2014- 2016) and development of an action plan (2017 -2020) for the implementation of the CHM.

This will be done by organising two workshops, one in Benin, 2014, and one in Niger in 2016.

Results:

In 2015 no activities were foreseen in this project.

Benin (2)

The second project in Benin is part of the institutional capacity building project with the University of Burundi and the Ministry of Environment.
It has as global objective : « de renforcer le partage et le transfert de connaissances sur la biodiversité dans un cadre de coopération scientifique et technique harmonisé et opérationnel »

The specific objectives are :

- To strengthen de knowledge and the capacity of technical and scientific stakeholders on the CBD, the Nagoya Protocol and the CHM.
- To facilitate the transfer of available scientific knowledge to the stakeholders among others through the CHM of Benin.

Results:
The 2 year project started in September 2014 and the first interim report is available through the link: http://bj.chm-cbd.net/cooperation/coop/cooperation-bilaterale/partenariat-benin-belgique/cooperation-irscnb-uac-chm/documents-produits-dans-l-execution-du-projet.

The second interim report is available through the link : http://bj.chm-cbd.net/cooperation/coop/cooperation-bilaterale/partenariat-benin-belgique/cooperation-dgfrn-irscnb/rapport-de-la-mise-en-oeuvre-du-projet-de-sensibilisation-des-acteurs-nationaux
The are different results available and visible. A new facebook page (https://www.facebook.com/profile.php?id=100009126362136&fref=ts), new gestes of the month (http://bj.chm-cbd.net/cooperation/coop/cooperation-bilaterale/partenariat-benin-belgique/cooperation-dgfrn-irscnb/sensibilisation-sur-les-gestes-utiles-pour-la-biodivesite-et-l-eau-au-benin.), 10.000 schoolkids have been made aware about the theme biodiversity and water, 573 school kids have been using the poster “mon espèce du mois” et learned also about conservation of elephants and sea turtles, 70 schoolkids have participated in the Christmas activity “Noél en forêt” a collaboration between the CHM team and the NGO ODDB.

Fig 42: Team that organised Noél en forêt 2015.

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 subjectives are to :

- 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 (foreseen 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 and it is foreseen that will happen as soon as possible.

Madagascar

The project has for general objective “the development of the section in the CHM under the theme « coastal and marine biodiversity » and capacity building activities with the Republic of the Comoros”. The specific objectives are to:

- Improve the knowledge on the CBD and especially on the theme of marine and coastal biodiversity. Amélioration de la connaissance du CDB et du thème biodiversité marine et côtière.
- Improve the management of the CHM of Madagascar (section on marine and coastal biodiversity).
- Continued collaboration between Madagascar and Comores for the CHM.
- Capitalise and share information between the CHMs of the 2 countries.

The training in the use of the CHM has taken place in Moroni, Republic of the Comoros, from 23 to 25 September 2014. 17 people from different ministries and NGOs participated in the training. The project end was foreseen in August 2015 however due to illness of the person responsible for the project an extension was granted till January 2016. In April 2016 we finally received the information from ONE that due to the fact that their financial manager had died in January 2016, they weren’t able to submit yet their financial report. Their narrative report has been received one day before the finalization of the this report.

Web statistics

Like each year, web statistics are provided for a number of our CHM partner countries (see Table 13). 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 striking numbers:

- The website of countries that have civil unrest, Burundi and Burkina Faso, show a clear drop in number of pages visited and visitors. With the new orientation of the Belgian development cooperation this might have an impact on the results of this SO.

- In Côte d’Ivoire even though there was a project to promote the use of the CHM as well as an awareness raising project only 12 pages have been added. We are still waiting for their reports on the projects and will insist that they will have to follow more clearly the activities as mentioned in

the projects. If the number of pages added won't improve in the first quarter of 2016 we might have to decide to exclude Côte d'Ivoire from the 2016 calls.

Table 23. Web statistics on visitors for a selected number of CHM websites.

	2014			2015			Percentage of change		
	Visits	Pages visited	Pages added	Visits	Pages	Pages added	Visits	Pages	Pages added
Burkina Faso	1075	2690	21	889	1893	6	-17.30	-29.63	-71.43
Burundi	7703	53546	>300	8872	36318	>400	15.18	-32.17	> 25%
Benin	9918	24785	122	10726	25310	54	8.15	2.12	-55.74
RD Congo	6065	13217	8	8148	17522	8	34.34	32.57	0.00
Côte d'Ivoire	11919	33409	206	12231	25180	12	2.62	-24.63	-94.17
Madagascar	13742	47552	34	18354	60605	>300	33.56	27.45	more than 10 times
Niger	10017	30452	11	12368	38837	0	23.47	27.54	-100.00
Cameroun	3629	17005	44	5167	24545	10	42.38	44.34	-77.27
Morocco	25609	71518	35	25830	83043	67	0.86	16.11	91.43
Rwanda	551	3940	26	1517	14846	49	175.32	276.80	88.46
Mali	745	1402	0	1090	2561	9	46.31	82.67	
Togo	473	1162	0	1114	8027	41	135.52	590.79	
Belgium	41233	106225	>300	37874	67850	150	-8.15	-36.13	-0.50

Expected result 2.3. Information is used to advise governance processes

Logframe (partim):

Expected results	Output indicators	Report 2015
2.3. Information is used to advise governance processes	• 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.	Regional Workshop for Anglophone countries 5 EU Target Crosslinking tool used in 3 countries (Morocco, Benin, Burundi) see reports

Activities	Report 2015
2.3.1. Networking and organising 1 meeting/yr of CHM nfp of partner countries and governance	Tanzania
2.3.2. one Mission /yr international meeting	Several international meetings: SBSTTA 19, CHM-IAC, Article 8j, 2 expert meetings (Copenhagen, Geneva)

Table 24: logframe (partim) for SO2, 2.3.

In the work plan 2015 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 Anglophone countries

During the call for proposals under SO2 and SO3 no Anglophone partner country submitted a project. Therefor the idea was launched to organise a special workshop for Anglophone partner countries. Tanzania has proposed to organise it in Dar Es Salaam and the workshop took place 9-13 March 2015, Dar es Salaam. During this workshop participants from Ghana, Kenya, Liberia, Rwanda and Tanzania, have learned how the calls work, what can be done under the partnership as well as proposals that they have prepared before coming to the Workshop have been discussed.

Results of the meeting

Under the 2015 CHM call, 5 Anglophone countries have submitted project proposals. The proposals from Tanzania and Rwanda were selected for financing. Under the 2015 public awareness call 2 countries have submitted project proposals. The quality of the proposals was however not good enough to be elected by the jury.

Tanzania organised a national training in July 2015, Arusha, see under SO2-1 of this report for more information. An addendum to the training was signed in November 2015 to organise 2 follow-up meetings for the participants to the training.

SBSTTA 19

During *SBSTTA 19* H. de Koeijer used the occasions to meet as many partner countries as possible to discuss the partnership follow up.

On behalf of Belgium H. de Koeijer was pilot or co-pilot during *SBSTTA-19* on agenda items:

3.2. Pilot: Key scientific and technical needs related to the implementation of the Strategic Plan for Biodiversity 2011-2020 and related research
3.3. Co-pilot: Tools to evaluate the effectiveness of policy instruments for the implementation of the Strategic Plan for Biodiversity 2011-2020
3.4. Co-pilot: Indicators for the Strategic Plan for Biodiversity 2011-2020

Most of the Belgian position could be found back in the final papers that came out of SBSTTA 19.

During the WG on 8j H. de Koeijer was co-pilot for Belgium on agenda items :

5. Task 12 of the Multi-Year Programme of Work on the implementation of Article 8(j) and related provisions:
6. Task 15 of the Multi-Year Programme of Work on the implementation of Article 8(j) and related provisions: best-practice guidelines for the repatriation of indigenous and traditional knowledge

As pilot for Belgium H. de Koeijer had to draft, with the co-pilots, the Belgian position and defend it with H. Segers in the EU coordination meetings. During the plenary meetings notes were taken and feedback provided to Belgium. Both items touched up on subjects directly related to the functioning of Belgian collections and research in relation to ABS and the Nagoya Protocol.

Item 5: At this moment the Belgian position is that repatriation of indigenous and traditional knowledge linked to Belgian collections can only be repatriated on a voluntary basis. The EU agrees on this.

With regards to item 4: The Belgian position is that items that have been discussed while developing the Nagoya protocol shouldn't be rediscussed through a working group meeting. The Belgian report on SBSTTA 19/WG 8j gives more in-depth information on this.

CHM-IAC

For the start of SBSTTA-19 the CHM-Informal advisory committee (CHM-IAC) held a two day meeting to discuss the results of COP-12 and advise the secretariat on possible actions till COP13. From the partner and former partner countries Burundi, Cameroon, Morocco and Madagascar are also member of the IAC, this mainly due to their expertise in developing and maintaining their national CHMs.

Other international missions

H. de Koeijer was invited as expert in a workshop on "UNEPs Second Multi-Stakeholder Expert Meeting on Elaboration of options for enhanced cooperation and Synergies among Biodiversity-Related Multilateral Environment Agreements, Geneva, Switzerland" organized by the UNEP-WCMC, Geneva, 12-16 May 2015. He has presented the 2020 EU Target Cross-linking tool and participated in the meeting to represent a country view on reporting. The meeting's goal was to develop a paper for input a synergy meeting between the Conventions in February 2016.

H. de Koeijer participated in the EU CHM working group meeting on the 2020 TCT reporting tool, Copenhagen, Denmark in the offices of the European Environmental Agency.

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.

Background

In 2015, we will continue to support awareness raising activities through calls for proposals whilst pursuing our reflexion towards the establishment of baselines and the identification of suitable indicators.

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

Outcome:

selected partner countries are better aware of baseline data of awareness about CBD when preparing policies and DGD when preparing ICP's (3.1.)
the awareness about the importance of biodiversity and ecosystem services is risen in partner countries at different levels (governance, general public) is enhanced/taken into account in policy making and implementation (3.2)
the awareness in relevant sectors in particular DGD and the actors of the Belgian cooperation in Belgium on biodiversity and ecosystem services related to development cooperation is increased and taken up in the preparation of the new indicative cooperation programmes with the partner countries (3.3)
NGAs and NGO programmes are involved in this exercise (3.3)

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

Logframe (partim):

Expected Results	Output Indicators	Report 2015
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. • 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.	• 1 (Burundi), 2 termineront en 2016, 1 en attente du rapport. 7 countries applied to the call Not applicable yet
Activities	**Report 2015**	
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 Aïchi targets and the relevant indicators in the reporting tool that countries will use under SO2-1 and SO5.	Done Collection of data ongoing, rapports foreseen towards June 2016	

Table 25: logframe (partim) for SO3, 3.1.

Activities:

A call for project to the partner countries was launched in May 2015. In the call partner countries could choose between projects under SO3.1 or SO3.2. We made in June 2015 the selection of the different projects that would receive funding. For the first time we also invite a person from outside RBINS to participate in the jury for the projects. David Ainsworth, Public awareness officer at the Se CBD, kindly accepted the invitation and assisted us with the final choice of accepted projects. Only 1 country had

projects related to SO3.1 and was selected. Contracts with them were only signed in the beginning of January 2016. The following projects was chosen under SO3.1:

- Morocco: Baseline study on indicators for public awareness, communication and engagement to measure the perception of the public toward biodiversity in Morocco.

As the project will only started in February 2016 and will run till June 2016, we can't report yet on the outcome of the project. In April we were informed by UNDP that they changed the conditions for the Overhead, 8% instead of 3 % as mentioned in the contract. We are still waiting for an official letter about this by the director of UNDP-Morocco. It seems however that the project will not start soon.

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**.

Logframe (partim):

Expected Results	Output Indicators	Report 2015
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". • Democratic Republic of Congo : Awareness raising on the role of sustainable agriculture for biodiversity in the technical agriculture teaching system. New projects with: Benin, Côte d'Ivoire, DR Congo, Guinea-Bissau, Togo,
Activities	**Report 2015**	
3.2.1. special awareness project calls in South organised	done	

Table 26: logframe (partim) for SO3, 3.2.

Activities
3 projects are still running from the 2014 call and will end in 2016:

- 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”.

This has been reported in the 2014

- Democratic Republic of Congo: Awareness raising on the role of sustainable agriculture for biodiversity in the technical agriculture teaching system.

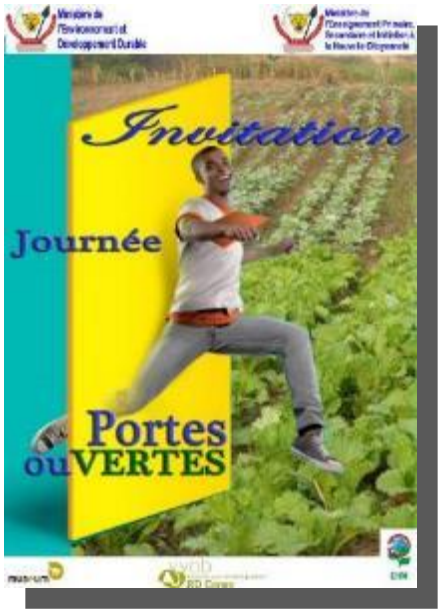

Fig. 43: Invitation to ‘journée portes ouvertes” in the framework of the awareness project in RDC, organised by the Min. of Env. and VVOB.

As mentioned under SO3.1 the call was launched in May 2015. 4 projects have been selected under this call, one additional was done in the light of institutional capacity building for the CSB and the provincial focal points of DR Congo:

- Benin: Informing and raising awareness of the population on the water pollution in Benin.
- Côte d’Ivoire: Education and raising awareness on invasive alien species in Côte d’Ivoire.
- Togo : Raising awareness and promote biodiversity to the principal stakeholders for the conservation of the biodiversity of Togo.

- Guinea-Bissau: Raising awareness and environmental education of local development agents towards a sustainable management of biodiversity and natural resources in Guinea-Bissau.

Also these projects have only started towards the end of December 2015 no results are available yet.

- DR Congo: Training on text writing and the national CHM

Fig. 44 : Banderolle de la formation (Photo@HdK)

Module 1 : Han de Koeijer

Organiser et donner une formation de quatre jours à des gestionnaires d'informations sur la biodiversité sur l'utilisation du Centre d'échange d'informations (CHM) de la Convention sur la Diversité biologique. Organiser un atelier pour les point focaux provinciaux sur l'importance d'échanger des informations sur la diversité biologique à travers le CHM pour faire le suivi de la mise en œuvre de la CDB et la stratégie nationale pour la biodiversité au Congo.

Durant l'atelier il y a eu trois passages à la télévision locale « Orient ». Ce programme est bien regardé par la population à Kisangani car mêmes quelques participants avaient vu nos interviews. Des interviews ont également été donné aussi au « radio Okapi » et quelques représentants de la presse écrite.

Fig. 45 : Participants de la formation CHM, module poussé Présentation par Mike Ipanga, point focal .CBD, sur rôle du CHM dans le Stratégie national et le rôle des participants. Discours avant la remise des attestations aux participants. Remise d'attestation à Mme Consolate Kaswera (photos@LJDB, MVH).

Module 2 : Maarten Vanhove

Une autre formation portera sur l'exploration des données. Où et comment peut-on retrouver de l'information scientifique fiable d'une façon bien ciblée? Comment la structurer et combiner dans une synthèse présentable? On touchera à quelques exemples de moteurs de recherche et des bases de données publiques où de l'information quant à la biodiversité est répertoriée. Les participants auront l'occasion de passer aux formateurs des besoins concrets auparavant, qui seront alors attaqués lors de la session. Les exercices de cette session seront intégrées avec celles de la formation en écriture scientifique.

Module 3 : Luc Janssens de Bisthoven

La formation traitera de différentes formes d'écriture scientifique, allant du rapport, en passant par un projet et finissant avec la rédaction d'un article scientifique. La première matinée, ces trois formes seront discutées. Ensuite l'après-midi, des exemples des trois formes seront analysés et critiqués. Le lendemain matin le titre et l'abstract d'un article seront discutés. On travaillera sur les abstracts amenés par les participants. L'après-midi, l'introduction, la matériel et méthodes, la discussion, les tableaux et figures, et la bibliographie seront abordés. Il se peut que l'ordre proposé ici change encore en fonction des besoins.

Fig. 46 : Formation sur l'écriture scientifique, travaux de groupe (photos@LJDB)

Visite à Yangambi (Luc et Maarten)

La route: la route qui sort de Kisangani vers Yangambi devient vite une piste pas plus large que le véhicule, où la végétation reprend ses droits de part et d'autre. Un orage change la piste en patinoire pour le véhicule 4x4. Plusieurs petits ponts sur des ruisseaux jongent la piste. Puis nous devons traverser la rivière Lindi par bac. Cette rivière immense, affluent du fleuve Congo, est plus large que l'Escaut à Anvers et reçoit la Tshopo qui longe la ville de Kisangani un peu en amont avant de se jeter en aval du bac dans le fleuve Congo. La piste traverse plusieurs villages sans électricité ni eau où les gens ont l'air d'avoir juste un seau en plastique, quelques filets et de grandes chaises en bois traditionnelle comme uniques possessions. La guest house de l'INERA (Institut National de recherche Agronomique) est magnifiquement située avec une vue superbe sur la foret et le fleuve Congo. Le site est très propre, et nous trouvons vite quelqu'un qui cuisine pour nous au charbon de bois (pas d'électricité).

Fig. 47 : La piste entre Kisangani et Yangambi et petit marché aux poissons (photos@LJDB).

L'herbarium: immense bâtiment rénové avec l'aide de Meise, fonctionnant sur l'énergie solaire. Lors de notre visite il y a une activité fébrile par une dizaine de personnel en train de classer des herbiers dans d'immenses armoires en métal. Nous avons eu un entretien avec M. Elasi Ramazani, conservateur très engagé. Pendant les heures noires du Congo, il n'a pas reçu de salaire pendant 6 ans. Il insiste pour avoir un support pour construire un site web afin d'augmenter la visibilité de cette collection unique pour l'Afrique centrale. Démonstration du scanner à plantes et du résultat des scans sur le PC. Visite des lieux.

Fig. 48: bibliothèque de l'INERA. Visite au bureau VVOB, à Kinshasa, affiches éducatives dans le bureau (photos@LJDB).

Fig. 49: collection zoologique et botanique de l'herbarium de Yangambi. Groupe électrogène (batteries), herbarium, entretien avec le conservateur (photos@LJDB).

Entretien avec le directeur de l'INERA: le FCC-REFORCO a donné des formations en informatique, REDD, géomatique, statistiques, comptabilité. Il y a une pépinière pour la production de semences pour le reboisement d'arbres indigènes (p.ex. pour la réserve de faune à okapi à Epulu). Les projets sur les semences et le reboisement se font en collaboration avec l'ONG OCEAN. Les arbres servent aussi à protéger les berges. Des pans d'avenue se sont écroulés lelongs des berges. Le changement climatique se fait aussi sentir, du moins c'est l'interprétation quand la petite saison sèche n'apparait plus. L'INERA gère aussi l'IFA qui est la faculté d'agronomie. Il y a 10 camps de travailleurs à Yangambi, avec tous un petit dispensaire et au total 1 grand hôpital à 1 médecin. Le site recouvre 240.000 ha. Les salaires sont acheminés physiquement en provenance de Kisangani. Cela pose problème. L'agro-foresterie et les forets communautaires sont en priorité dans leur recherche. La station INERA de Yangambi compte plus de 950 agents actifs (> 1500 y compris 2 stations satellites).

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.

Logframe (partim):

Expected Results	Output Indicators	Report 2015
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	- 500 persons estimated at our booth during 3 events - Two awareness raising posters created on biodiversity and development - One awareness raising event organized - 3 events with new booth - New booth created - 170 participants to CEBioS event on 26/11
Activities	**Report 2015**	
Communication and awareness activities	-guest lecture at KU Leuven about main streaming -Creation of the new booth -Organisation of an awareness raising event on 26/11, RBINS	

Table 25. Logframe partim of SO3-3.3.

In the framework of the European Year for development, a new booth was created and an event organized.

Booth on biodiversity and development

The booth consists of three pull-ups: one large central panel and two side panels. It presents information about the importance of biodiversity for developing countries, ecosystem services and CEBioS activities. It was brought at three events in 2015, together with small games on ecosystem services, flyers and documentation on our activities:

- The Europe Day (draft booth presented): 09/05, 30.000 visitors, Development Village, Esplanade of the European Parliament.
- Bruxelles Champêtre/Landelijk Brussel, together with the CBD NFP: 20/09, 80.000 visitors, Place des Palais, Brussels.
- CEBioS event: 26/11, 170 participants, RBINS (see below).

Fig. 50. From left to right, CEBioS at The Europe Day (photo: J. Van de Voorde), Bruxelles Champêtre/Landelijk Brussel and CEBioS event (photo@ T. Hubin).

Symposium 'Biodiversity and development, a global heritage' (26/11, RBINS)

The symposium 'Biodiversity and development, a global heritage' took place at the Royal Belgian Institute of Natural Sciences (RBINS) on 26 November 2015 in the framework of the European year for development. The event was supported by the following partners: VLIR-UOS, ARES-CCD, The Shift, KLIMOS, BELSPO, Belgian Biodiversity Platform, National Focal Point for the Convention on Biological Diversity (CBD), The European Commission, the Royal Museum for Central Africa, Botanic Garden Meise. Despite the security situation in Brussels, 170 participants were counted.

The day, introduced by Mme Pisani and Minister Alexander De Croo, included key notes by invited gifted speakers, as well as practitioners' stories by our own researchers and other Belgian actors about the reasons why biodiversity in developing countries should be protected and used or managed in a sustainable way, how to do that, and why, we, as an industrialised European country, have a duty and an obligation to support this process. Many aspects of ecosystem services offered by biodiversity were raised during the day, including cultural aspects and traditional knowledge, food security, carbon sink, water and housing, heating and the concept of 'One Health'.

More than 30 stakeholders presented their activities during the poster/booth session, including Universities (KULeuven, UCL, ULB, ULG-AgroBioTech, UMons), research Institutes (RBINS, RMCA, Botanic Garden Meise, Bioversity international), NGOs (WWF, Natagora, Natuurpunt), associations (ELI-Scientific), the Belgian Cooperation (DGD, BTC) and researchers from the South.

At the end of the afternoon, a debate moderated by the VRT journalist and Africa specialist Mr. Peter Verlinden highlighted the main tensions between economy and ecology, development and nature conservation and offered further insights into this topic.

The abstract booklet of the event, presentations and posters are available online .

Fig. 51. Presentations, booth session and debate at CEBioS event (Photos@ T. Hubin).

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.

Background

As a research institution, the RBINS possesses a long-running expertise on biodiversity and ecosystem management. As a museum, its educational activities are key instruments for the spreading of scientific knowledge. And through its mandate as Belgian National Focal Point to the Convention on Biological Diversity and its involvement with other agreements such as the Convention on Migratory Species and CITES, as well as the coordination of the Belgian platform for Biodiversity, it has acquired experience at the policy level. Over the years, this unique position has generated a valuable expertise at the interfaces of science, policy and education. The 'biodiversity team' of the RBINS is now clustered in the 'BIOPOLS' (Belgian Biodiversity Centre for Policy support) group, being a working group under the new operational Direction 'Nature' of RBINS. This will create additional synergies between the DGD-programme, the National Focal Points and the Belgian platform for Biodiversity, as well as the MUMM involved in policy work around OSPAR.

RBINS puts this expertise at the service of the Belgian Development Cooperation and of other interested parties in Belgium, in order to enhance the dialogue and develop strong partnerships between scientists, decision-makers and society.

At the national level, the DGD-programme staff actively participated to the following fora:

- Steering Committee 'Nature'
- Steering Committee 'CBD'

- various BELSPO, RBINS and MRAC seminars
- various DGD and SPF Environment seminars

Outcome: More capacities in Belgian cooperation about biodiversity (4.1.) More reference to biodiversity and ecosystem services in Belgian cooperation (PICs, mixed commissions…) by integration of the Aïchi targets and risk assessment of the planned cooperation interventions (4.2)

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

- M-L Susini participated in the conference entitled 'Building Capacity for Conservation & Resource Management in Africa'. The conference took place at Desmond Tutu Conference Centre, Nairobi, Kenya, from 27 to 30 July 2015.

- M-L Susini participated in the 1st IPBES Capacity-building Forum. The meeting took place in Dehradun, India from 19 to 22 October 2015. It was co-hosted by the Wildlife Institute of India and the National Biodiversity Authority of India (funded by BELSPO).

- On 28/10/2015, M-L Susini participated in the Roundtable discussion: Initiative of the Secretariat of the Convention on Biological Diversity on "Biodiversity for Poverty Eradication and Development, 2015-2018" held in Brussels, Belgium. She gave a presentation entitled 'Mainstreaming Biodiversity in developing countries: the case of Belgium'.

- *See table 34 of consultancies and meetings on pg. 160 for other activities in 2015.*

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 2014, 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.

Examples of support include:

- 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 SO 3?
- 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.

Logframe (partim):

Expected results	Output Indicators	Report 2015
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	Training joint with KLIMOS of DGD and BTC/ paper in preparation on EIA with KLIMOS/ document reviews for e.g. Mali, Rwanda, UNEP/ participation of CEBioS to ACNG exercise of GCA URL : http://cebios.naturalsciences.be/
Activities	Report 2015	

4.1.1. Training provided: (Based on request) around the theme "biodiversity, ecosystem services and development cooperation"	- 2 days-training for DGD organized in November

Table 26. logframe (partim) for SO4, 4.1.

Activities:

A two days - training about "Ecosystem services, biodiversity and reward mechanisms" was jointly organized by KLIMOS and CEBioS on 16 and 17 November for DGD functionaries. Ten participants attended at least part of the training. The main objectives of the training were to provide:

- Theoretical knowledge on biodiversity, ecosystem services and their link with development;
- Overview of possible reward mechanisms (monetary, institutional, in-kind, ...) that are being used to reward biodiversity as an environmental service;
- Practical application for their integration in development cooperation projects.

Fig. 52. Practical group exercise during the training (photo: A.-J. Rochette).

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.

Logframe (partim):

Expected results	Output Indicators	Report 2015
4.2 Biodiversity and ecosystem services are mainstreamed in activities supported by the Belgian Development Cooperation	Number of consultancy requests from DGD staff Number of processes	- Support for the update of the biodiversity section in KLIMOS toolkit - consultancy for DGD and other government bodies (SPW, Belspo, Belgian embassies)
Activities	**Report 2015**	
4.2.1. At least 8 consultancy requests honoured on demand 4.2.2.Follow-up of at least 5 processes (e.g. COP, SBSSTA, PIC…)	Meetings or consultancies on demand, on the topics of: - the **SDGs**, for the **Service Publique de Wallonie**; - the scoping paper for Societal challenge 6 ("**inclusive and reflexive societies**") for an EU research program, for **Belspo;** - a **BTC project in Tanzania**, for the **Belgian embassy in Tanzania**; - discussion on a Burundese "licence" dissertation on **pollution in Lake Tanganyika,** for the **Belgian embassy in Burundi**; - a meeting with the Burundese **NGO Floresta,** for the **Belgian embassy in Burundi**; - the **Green Climate Fund**, for **DGD**; - potential **biodiversity indicators for Mali**, for **DGD**.	

Table 27. logframe (partim) for SO4., 4.2.

Activities:

CEBioS worked on the update of the biodiversity section in KLIMOS Environmental Sustainability toolkit, in support of environmental mainstreaming in development cooperation. A study is being conducted together with KLIMOS about the integration of biodiversity in EIAs in development projects. We provided consultancy at the demand of DGD on occasions, e.g. in the framework of the Green Climate Fund, and the proposal of potential biodiversity indicators for the PIC 2015-2017 of Mali.

Special attention was given for Burundi, Benin and RDC to the development of the Joint Context Analyses of the ACNGs, where CEBioS acts as an actor in the field of biodiversity.

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.

Background

The RBINS, as CBD National Focal Point, has been the coordinator of the Belgian reporting obligations under the Convention on Biological Diversity. Till recently, such reporting under the CBD was largely confined to descriptive information. With the adoption of the Strategic Plan for Biodiversity 2011- 2020 and the Aichi Biodiversity Targets, countries will have to formulate indicators and gather data that will feed these.

The elaboration and formulation of indicators (largely a regional competence in Belgium) and the establishment / follow-up of formal 'MRV' processes is a relatively new field of expertise for us and we needed to build our own capacities before being fully operational.

Expected results

5.1. Expertise of the RBINS on MRV is built.
5.2. Methodologies to assess progress towards the Aïchi Targets are available

Outcome:
RBINS provides advice on MRV to different authorities Tool developed used to monitor and report achievement of Aïchi targets in Belgium and in partner countries

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).

Logframe (partim):

Expected results (ER)	Output Indicators	Report 2015
5.1. Expertise of the RBINS on MRV is built.	The EU reporting tool for NBS's is developed in cooperation with the CHM network The reporting tool is used for the follow up of the implementation of national strategies and the reporting towards the Aichi targets	Several meetings on the tool by Han de Koeijer The reporting tool is used by Burundi, other countries are testing it. - Updated version of the KLIMOS Toolkit proposed during training for DGD functionaries - 2 trainings followed by CEBioS staff - 2 CEBioS scientists participated actively in meetings related to MRV (conference on mobilising biodiversity data; IPBES first author meeting for African RA) Contributions of relevant specialists (e.g. BIP-WCMC, KLIMOS) to CEBioS-organised trainings
Activities	Report 2015	
5.1.1. expertise concerning MRV built up in conjunction with DGD	Collaborations with institutes and organisations relevant to MRV are ongoing	

Table 28. logframe (partim) for SO5, 5.1.

Activities:

Internal capacity building efforts on MRV during 2015 were mainly guided by knowledge gaps identified while scoping the 2015 MRV call, and by user demand from South partners involved in the selected projects. Some activities that can be highlighted in this framework:

1) In May 2015, Anne-Julie Rochette gave an oral presentation and presented a poster at the conference "Africa Rising: Mobilising Biodiversity Data for Sustainable Development" in Cape Town, South Africa;
2) In September 2015, CEBioS staff followed trainings on GIS (Maarten Vanhove) and species distribution modelling (Anne-Julie Rochette);
3) Relevant Belgian experts are contributing contents to activities within the MRV call: collaborations were started with scientists from BIP-WCMC, GBIF, UHasselt, BGM, ULg-GxABT;
4) In collaboration with KLIMOS, the possibilities for environmental impact assessment focused on biodiversity within development projects are studied, including a finetuning of the Toolkit screening note;
5) The follow-up of SDSN, COPBH and GEO BON by Maarten Vanhove feeds directly into internal capacity building efforts on MRV, data valorisation and indicator development, while his 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.

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

Description:

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.

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, DR Congo, Ivory Coast, Mali, Morocco and Niger. While the 2016 call will be focused on the (former) provinces of the D.R.Congo, and the 2017 call on English-

speaking partner countries, after three years a follow-up will be launched, prioritising successful projects of the 2015 call to enable follow-up of the progress towards the Aichi Targets.

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

Logframe (partim):

Expected results (ER)	Output Indicators	Report 2015
5.2. Methodologies to assess progress towards the Aïchi Targets are available	National indicators are developed and used for reporting towards the Aïchi targets	Data being collected in several projects and programmes under SO-1, 2 and 3 in addition to external funding. Within a competitive MRV call, five projects were selected to work on indicators at different levels (from feeding local data into indicators, to indicator policy at the national level), from: Benin (2x), Burundi, the D.R.Congo and Morocco.
Activities	Report 2015	
5.2.1 MRV tools are developed and implemented (e.g. through project calls and other)	Selected projects ongoing	

Table 29. logframe (partim) for SO5, 5.2.

Activities:

The 2015 MRV call was launched at the end of March, with an application deadline of mid-May. The application procedure was also communicated to the Belgian representations in the relevant countries Nine proposals were received, five of which were accepted (see Table 30). The jury consisted of CEBioS scientists (Luc Janssens de Bisthoven, Anne-Julie Rochette, François Muhashy Habiyaremye and Maarten Vanhove) and an external specialist (Sarah Ivory, Biodiversity Indicators Partnership, UNEP-World Conservation Monitoring Centre, United Kingdom).

Selection criteria were:

1) The quality and clarity of the project proposal, realistic budget;
2) The extent to which indicators are already clearly developed, or to which there is a potential to develop indicators of which it is clear that they will be of use to the respective partners in the near future;
3) The relevance for CBD, Aichi Targets or NBSAP. Reference to concrete collaborative activities on the science-policy interface is an asset;

4) The extent to which the proposed project is based on real biodiversity-related data, either using existing material or through a feasible data collection strategy, outlined in the proposal;
5) The availability and interest of scientific expertise in Belgium within or outside CEBioS.

Project approach and strategy

For an effective monitoring of progress towards the Aichi Targets under the CBD, and in the framework of other conventions, indicators need to be developed and put into practice. CEBioS contributes to this process by methodological capacity building at various levels, at the demand of partner countries and partner institutes:

1) The choice and prioritisation of indicators, in line with e.g. the respective NBSAP, at the national level (e.g. the first Beninese project under the 2015 MRV call);
2) The development and use of these indicators (e.g. the Burundese and Moroccan projects under the 2015 MRV call);
3) The collection of data at the local or national level, feeding into national indicators (e.g. the Congolese and second Beninese projects under the 2015 MRV call; see also SO 1, specifically SO 1.3).

To strengthen the collaboration between academia and policy in partner countries, a "tandem" approach was chosen, in which a scientific institution (university, government research center) applies together with a CBD of CHM NFP. The objective is to fill the gap between data collection by the academic institution, and data use by the government authority for reporting/follow-up of the state of biodiversity and biodiversity policies.

An opening workshop took place in Brussels (September 28th – October 2nd 2015), to discuss priorities and requests from the partner countries, and offering content relevant to MRV processes, such as GBIF, GIS, economic valuation of ecosystem services, ethnobiology… These topics are in agreement with the requests for technical assistance by Belgian experts expressed by the participating projects, in view of their needs with regard to data acquisition and publishing, database management and ecosystem services valuation. Projects will be followed by the MRV program officers within CEBioS (mid-term report expected in January 2016). A closing workshop to discuss best practices, lessons learnt, conclusions and perspectives is planned when all projects have ended, in October 2016 (Cotonou, Benin); this occasion will also be used to draft a common publication and policy brief with the participating African partners.

Fig. 52: participants of the opening workshop of MRV projects, RBINS (September 28th – October 2nd 2015).

Table 30. The five projects selected in the framework of the 2015 MRV call

TITLE OF PROJECT	DATES OF THE CONTRACT	PARTNERS
Mise en place d'un système de suivi de la biodiversité au Bénin	Contract signed July 15th, 2015, end foreseen September 30th, 2016	Direction Générale des Forêts et des Ressources Naturelles Laboratoire d'Ecologie Appliquée, Université d'Abomey-Calavi **Benin (1)**
Chaîne de valeur et connaissances traditionnelles de quelques plantes médicinales dans les grands centres urbains au Bénin	Contract signed July 15th, 2015, end foreseen September 15th, 2016	Centre d'études, de Recherches et de Formation Forestières Ministère de l'Environnement Chargé de la Gestion des Changements Climatiques du Reboisement et de la Protection des Ressources Naturelles et Forestières **Benin (2)**
Indicateurs pour le suivi de la tendance de la biodiversité au Burundi	Contract signed July 24th, 2015, end foreseen June 30th, 2016	Office Burundais pour la Protection de l'Environnement Faculté d'Agronomie et de Bio-Ingénierie, Université du Burundi **Burundi**
Études floristique et ethnobotanique des plantes utilisées au quartier Guma à Kinshasa/Maluku	Contract signed July 15th, 2015, end foreseen September 30th, 2016.	Laboratoire de Botanique systématique et d'Écologie végétale, Université de Kinshasa (Herbier de l'IUK) Point Focal National CBD, Direction du Développement Durable, Ministère de l'Environnement, Conservation de la Nature et Tourisme **D.R.Congo**
Conception et mise en application de deux indicateurs de la biodiversité dans le cadre de la Stratégie Nationale de la Biodiversité révisée.	Contract to be signed in January 2016-, end foreseen June 30th, 2016 (delay due to banking administrative issues)	Ministère Délégué Chargé de l'Environnement Institut Scientifique de Rabat **Morocco**

Details per country

Benin (2x), Burundi, D.R.Congo, Morocco

Benin (1)

This project has the following objectives: to install and operationalise a data base on priority indicators for the follow-up of Benin's progress towards the Aichi Targets, through:

- the selection of efficient priority indicators, in a participatory approach through stakeholder involvement;
- developing these indicators and putting them into practice: a better understanding of the selected indicators, data collection methodology, baseline values…;
- capacity building with the involved actors to ensure sustainability and continuity.

Benin (2)

The second Beninese project is mainly aligned with Aichi Targets 14 and 18. It has the following objectives:

- to assist the implementation of the national forestry policy;
- to advance forestry-relevant science;
- to contribute to the understanding the economic added value and the socio-economic position of the different actors regarding the valuation of medicinal plants;
- to contribute to the use and protection of traditional knowledge in the framework of integrated and sustainable management of forest resources.

Burundi

The objective of this project is to develop selected indicators for the follow-up of tendencies in Burundi's biodiversity, focusing on:

- the size, state and vulnerability of ecosystems and natural habitats (Aichi Target 5, National Objectives 5, 7, 13);
- tendencies regarding the influence of unsustainable agricultural practices on species typical to a natural forest habitat (Aichi Target 5, National Objectives 5, 7, 13);
- tendencies regarding the distribution, state and sustainability of ecosystem services with regard to human well-being (Aichi Target 14, National Objectives 15).

D.R.Congo

Situated rather at the data acquisition side of the spectrum, bridging between local monitoring and national indicator development, this project focuses on part of the Plateau de Batéké, near Kinshasa. It aims to provide a knowledge base on the sustainable use and management of economically valuable plants, by improving the understanding of their diversity, ecology, vulnerability, applicability and economic and cultural value, including traditional knowledge. This is in line with Aichi Targets 14 and 18.

Morocco

Mainly with Aichi Targets 5 and 11 in mind, this project endeavours to conceptualise and apply indicators related to:

- the size, state and vulnerability of ecosystems;

- the coverage, state, representativeness and efficiency of approaches linked to protected areas, as well as other local policy interventions.

To this end, two national indicators will be installed, their application will be tested, and capacities regarding the relevant data acquisition will be built.

Other MRV interventions

In addition to the CEBioS MRV call, at the third level (methodologies for data collection), partnerships are undertaken in 2015 with **universities and other institutions in partner countries and in Belgium** in order to launch research on best practice. 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:

- the use of historical fish collections to determine the impact of anthropogenic introduction of Nile tilapia into the Congo Basin (Belspo BRAIN-be project TILAPIA hosted at RMCA, in collaboration with IRD, Unikis, Unilu, ISP Mb-Ng, UHasselt);
- the impact of fisheries, anthropogenic introductions and parasite infections on the economically important fish stocks of the African Great Lakes (in collaboration with MUNI, CRH-U, UNZI, AAU). On this subject, CEBioS unsuccessfully applied for BRAIN and FWO funding in the beginning of 2015;
- the ecotouristical potential, and the role of macro-invertebrates as indicators for environmental quality, in the Parc National des Mangroves (D.R. Congo), to answer a demand by ICCN (with ULB, KU Leuven);
- the fish stocks of the Parc National de Kahuzi-Biega (D.R.Congo) (M. Vanhove was asked as a member of the PhD committee of a Congolese researcher working on the topic in the framework of a project funded by the DGD programme at the RMCA)
- small-scale consultancy questions from CRH-U (DRC), Université de Ouagadougou (Burkina Faso), Egerton University (Kenya), University of Limpopo, NWU (South Africa), Université du Burundi… mainly regarding literature, calls or taxonomic expertise
- integrated management of African lakes, including traditional knowledge systems and stakeholder involvement (VLIR-NSS with KU Leuven, NM-AIST, UWC, UNZI);
- habitat monitoring and anthropogenic impact assessment in freshwater ecosystems (VLIR-SI with UNIBU, VUB; VLIR-SI with UNILU, UA, KU Leuven)
- amphibian health and parasites and its link with conservation, bio-indicators, nature management and ecotourism in South Africa (PhD KU Leuven/NWU in collaboration with VLIR);
- furthermore, in 2015 funding was acquired, through VLIR and with KU Leuven, Université Mohammed V (Rabat, Morocco) and partners from Belgium, France, Cameroon, Ivory Coast and the US, for the following VLIR-STI: “Building an African network for sustainable management of aquatic biological resources supported by genetics and parasitology” (planned September 2016).

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.

Background

The RBINS and D2.4 both have relatively limited experience on genetic resources, access and benefit sharing provisions or traditional knowledge associated to the use of genetic resources. They have followed the issue in their respective work related to the Convention on Biological Diversity, but without necessarily developing expertise or playing an active role in the process. At the Belgian level, other interested parties are in a similar situation.
The new programme framework rightly makes of the Nagoya protocol the sixth pillar of our activities. As a preparation for years to come, members of the team will start documenting and building capacities on this matter. Also, the ABS-Clearing House will be linked to the national CHM.

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.

Outcome:
RBINS provides advice to Belgian cooperation on Nagoya Protocol and DGD is better informed about the NP.
Nagoya Protocol is better known in partner countries

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

Description:

The year 2015 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. Two new collaborators provide support to Han de Koeijer (lead SO6) and got acquainted with this field.

Logframe (partim):

Expected results	Output Indicators	Report 2015
6.1. The RBINS and DGD are familiar with the obligations under the Nagoya Protocol.	Number of meetings on NP attended 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.	Han de Koeijer attended Capacity building IAC for the NP, Belgium still didn't ratify the NP, Maarten Vanhove and Anne-Julie got acquainted with the NP. 3 staff members have continued to read up on international developments among which CETAF activities. Training of 20 RBINS and 20 RMCA scientists during 2 information sessions (several participants came from developing countries),
Activities	**Report 2015**	
6.1.1. A flyer has been developed about "the Nagoya Protocol and implication for collecting species in non-European countries". 6.1.2. One to 2 briefing papers on developments of the NP will be prepared each year.	As Belgium hasn't ratified the NP yet this wasn't possible. 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	3 meetings were organised between federal scientific institutes, the abs-nfp and cbd –nfp (RBINS, RMCA, BCCM). One meeting with collection managers of BGM, abs-nfp and cbd-nfp was facilitated at RBINS. Informal discussions and email correspondence (20) were held with scientists and companies.

Table 31. logframe (partim) for SO6, 6.1.

Activities:

Amount of meetings on NP attended

International meetings:
Han de Koeijer participated as expert for Europe at the Informal Advisory committee on capacity building for the implementation of the Nagoya Protocol, 14-18 September 2015. Information on this meeting (https://www.cbd.int/doc/?meeting=ABSCBIAC-2015-01) and the final report are available at https://www.cbd.int/doc/meetings/abs/abscbiac-2015-01/official/abscbiac-2015-01-03-en.doc. It was very important to participate in this meeting in order to ensure that the strategic plan on capacity building as voted during COP/MOP1 was respected, to keep the link with the overall capacity building and to get contacts with different other initiatives that work on capacity building.

There were several meeting in Belgium:

- 3 meetings were organised between federal scientific institutes, the abs-nfp and cbd –nfp (RBINS, RMCA, BCCM). The purpose of these meetings was to get an overview of what would be the implications for these institutes of the ratification by Belgium and the EU regulation according to the collection managers.
- One meeting with collection managers of BGM, abs-nfp and cbd-nfp was facilitated at RBINS. During this meeting people from BGM were able to ask questions and get better acquainted with the implementation of the NP in Belgium and how they shouldprepare themselves.

Number of staff members aware of the implications of Nagoya Protocol implementation: 2 members of staff trained

Anne-Julie Rochette and Maarten Vanhove started working in January 2015 for CEBioS. They were introduced to the NP by getting direction for available documents on the NP, got involved in the organisation of 2 workshops for scientists of RBINS and RMCA. For these workshops they were involved in further developing the FAQ questions through which they also learned a lot about the NP. Han de Koeijer continued to learn more on the NP by participating in the above as well as through questions that were received during the year.

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

In March and June 2015 two information sessions were organised at RBINS and RMCA in collaboration with the cbd-fp. Before the info sessions all scientist of the institutions were asked to read the FAQ documents that were prepared based on earlier questions that were received by abs-nfp, abs-ch fp and cbd-fp. They were given the possibility to submit questions before the info session through the Be CHM. 20 RBINS and 20 RMCA scientists (among which several participants came from developing countries) participated in the info-sessions. The sessions started with three standard presentations:

- General information on the NP and implementation in Belgium
- The ABS-CH and how to use it for planning collections
- Replies to questions that were submitted before the info sessions.

After the info sessions 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

After the info sessions we were approached, formally and informally, by more than 20 scientists with direct questions about the missions that they were planning in 2015-2016 and how to comply with the NP. We also participated in meetings with CETAF on how the member institutes in the EU were preparing for the implementation of the NP and the EU regulation.

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.

Logframe (partim):

Expected results	Output Indicators	Report 2015
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	This section has been put on www.taxonomy.be
Activities	**Report 2015**	
6.2.1. information sessions are organised	3 sessions have been organised with 45 participants	
6.2.2. development of section on NP in CHM.	As Belgium hasn't ratified yet, this section has seen no further development.	
6.2.3.Further actions will depend on the decisions during COP11 and NP COP/MOP1		

Table 32. logframe (partim) for SO6, 6.2.

Activities:

See 6.1 on information on the 6.2.1 activities.

SO 7. Programme coordination and management

Background

The year 2015 was a consolidation and a further development and extension of the networks, modalities and systems established by the new coordinator who started in May 2013 for a results-based coordination and management of the CEBioS programme in the framework of the 10 year strategy 2014-2023, phase I (2014-2018).

Outcome
The project is properly coordinated and managed in order to implement smoothly the 16 expected results under the 6 specific objectives

Expected Results

7.1. Coordination
7.2. 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 five scientists (Han de Koeijer, François Muhasy, Marie-Lucie Susini, Maarten Vanhove, Anne-Julie Rochette). 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). Maarten Vanhove and Anne-Julie Rochette integrated the team in january 2015 and developed SO5 (MRV), SO6 (training aspects of Protocol of Nagoya), and the cooperation with KLIMOS (toolkit, conceptual papers, training of DGD and BTC).

Logframe (partim) :

7. Coordination and Management	Key indicators (OVI) and targets	
Expected results (ER)	Output Indicators	Report 2015

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, see table 25
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 34
Activities	**Report 2015**	
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	7.1.1 – 7.1.5. done 7.1.4. collaboration with VVOB, project VLIR-UOS in RD Congo, Tanzania and Burundi, funding from UNEP for CHM training with Iraq, Rwanda, Sudan. Synergies with KLIMOS stengthened. Special attention to the development of the Joint Action Plans of the ACNGs, where CEBioS acts as an observator and actor in the field of biodiversity.	
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	7.2.1. -7.2.4 done 7.2.2: 80 % of 2015 funding spent. Up to date financial information available on demand. 7.2.4. Updating to MS office to 2013 for all staff, training in Excel V. Pinton	

Table 33. logframe (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, BTC 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 etc).

Table 34. Meetings and consultancies for mainstreaming (SO4), coordination and management of the coordinator in collaboration with the CEBioS staff.

Nr.	Actor (recipient of service or meeting)	Meetings/ action	Date 2015	Location
1	ACNGs	**Meetings** : coherent approaches, development of Joint Cooperation Action Plans for Bénin, Burundi, RDC	Burundi, 11-03 RDC, 16-06 Bénin, 26-06	11³ offices Iles de Paix 11³ offices
2	DGD	**Preparation** of indicators for bilateral cooperation with Mali	25-02	RBINS
3	DGD	**Comments** on Sustainable Energy for All Action Agenda, Rwanda Draft 2-19 December 2014	21-01	RBINS
4	DGD	**Comments** on mid term strategy UNEP – 5 June	17-06	RBINS

5	DGD	**Meeting** DGD Visit by E. Solheim (OECD-DAC)- Restitution of peer review of Belgian cooperation	08-09	DGD
6	DGD	**Comments** on ToR of DBE S4 'Evaluatie/studie beleidsondersteuning door institutionele actoren'	02-09	RBINS
7	DGD, BTC	**Training** together with KLIMOS of civil servant about biodiversity and ecosystem services	September	DGD
8	DGD, BELSPO	**CEBioS steering committee**	19-02, 03-07, 15-12	RBINS
9	DGD, BELSPO, RMCA	**Strategic committee**	01-07	RBINS
10	DGD	**Provision** of List of RBINS interventions in Burkina faso and Guinée	21-08	RBINS
11	CBD	**Skype**: with Arnaud Comolet (CBD, Montreal) Programme CBD 'Biodiversity for Poverty Eradication'	16-07	RBINS
12	FDRO	**Conference** about Addis Abeba 'financing for development', 13-16 July 2015	11-06	FOD Financiën, Brussel
13	BTC	**Seminar**: "Trends in Capacity development"	10-06	Seminar at BTC, Espace Jaquemotte
14	BTC	**Meeting** with Ms. I. Van Oertzen and Mr. Mayuma BTC-programme Tanzania- Kigoma- Natural resources for sustainable local economic development	12-05	RBINS
15	UNEP, DGD en de Federale Raad voor Duurzame Ontwikkeling	**Lunchdebat** Partnerships for a green economy	03-06	Egmontpaleis, Brussel
16	Kabinet De Croo	**COMMENTS** on "Side event by the Kingdom of Belgium: Fragility and sustainability, LDCs and their specific environmental challenges in implementing the 2030 Agenda for Sustainable Development Post-2015 Summit,New York,From 24 to 28 September 2015	03-09	RBINS

17	Kabinet De Croo	**Advice** for speech at Colloquium 'Biodiversity and development, a global heritage'	23-11	RBINS
18	RBINS	**Preparation** of booth with CEBioS team	Many CEBioS meetings	RBINS
19	RBINS, NFP	**Meetings**, Groupe Directeur 'Nature' et 'CBD'	Several meetings	RBINS
20	CETAF	Seeking for synergies	13-02, 06-08	RBINS
21	BELSPO, RBINS	**Comments** on Work Programme for 2016-2017 for Societal Challenge 2: Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy	21-08	RBINS
22	The Shift (ex-Kauri)	**Meeting** in preparation of colloquium to involve green economy	13-03	VBO-gebouw, Kauri-bureel, Brussel
23	SBSSTA	**Comments** on TOOLS TO EVALUATE THE EFFECTIVENESS OF POLICY INSTRUMENTS FOR THE IMPLEMENTATION OF THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020	07-08	RBINS
24	SBSSTA	**Comments** on GLOBAL INDICATORS AND SUB-GLOBAL APPROACHES TO MONITOR PROGRESS IN THE IMPLEMENTATION OF THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020	07-08	RBINS
25	CSB (RDC)	**Cooperation** with CSB/ meeting with Ms. Pisani, prof. Dudu, E. Verheyen/ restitution de l'audit (3-3)	03-03, 04-03, 16-06, 30-06	RBINS
26	Systemisches Institut Heidelberg	Luc JdB got a **training** in team organisation and development	November	Heidelberg (DE)
27	KU Leuven, PDL	**Advice** to biology students, evening seminar	29-04	Leuven
28	RAMSAR, NFP	**Comments** on "draft resolution for 12th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971) Punta del Este, Uruguay, 1-9 June 2015 Draft Resolutions for Ramsar COP 12	21-05	RBINS

29	CBD	**Comments** on "Part of BE response to CBD Notification 2015-018 of 17 February 2015 on views and experiences on biodiversity and climate change and disaster risk reduction"	08-05	RBINS
30	EU	**Added** role of CEBioS in "EU Biodiv 2020 - Mid-term report"	12-05	RBINS
31	European Yaer Development 2015 (EYD2015)	**Colloqium** 'Biodiversity and development, a global heritage', 170 participants, high level speakers, minister De Croo	26-11	RBINS, organised by CEBioS
32	SPF ENV, DG5, EU DG DEVCO (29-05)	**Meetings** about bushmeat	13-03, 16-07, 29-05	SPF ENV, RBINS, EU DEVCO
33	Wildlife Conservation Society	**Meeting** for synergies	29-05	RBINS
34	RBINS	**BIOPOLS**: organisation and reporting	27-02, 30-04, 19-06, 28-08, 23-10, 20-11	RBINS
35	RBINS	**Committee** Functional Chiefs , DO Nature (CFC, Business review)	27-03, 27-05	Oostende
36	RBINS	Liaison Officers **meeting** (LSO), DO Nature	05-02, 20-04, 07-09, 08-01, 09-11, 11-03, 12-10, 14-12, 18-05, 22-06	RBINS and MUMM Gulledelle
37	RBINS	**Science day** (poster, presentation)	11-09	Themse
38	IMER	**Mission, Formulation** mission and debriefing to Belgian embassy, Hanoi	April	Halong, Vietnam, Hanoi
39	IMER, IMARPE	**Mid term technical meeting** Peru and vietnam	22-12	RBINS
40	GTI	**Meeting** with Hamed Odountan Stagiaire GTI, Macro-invertébrés, Benin	26-06	RBINS
41	GTI	**Seminar** by Sahib Souad 18-05-2015, IRSNB salle entomo 'Hoverflies'	18-05	RBINS
42	IFS, BELSPO	**Cooperation** with IFS	24-11	BELSPO
43	UNILU	**Meeting** with Prof. Auguste Chocha Manata, Promoter VLIR-UOS South Initiative UNILU	25-11	RBINS

44	Botanical Garden Meise, Van Rammelo	(**telefonisch**) voorbereiding lidmaatschap Fondation pour la Recherche Scientifique des Aires Protégées en Afrique	09-11	RBINS
45	RBINS	**Press** communication about colloquium, however failed to appear in media	26-11	RBINS
46	OECD	**Invited** to participate to debate about "Mainstreaming biodiversity into development cooperation"	18-01	Paris, OECD
47	KLIMOS	**Steering Committee**	03-03, 15-06, 29-09, 17-12	DGD
48	KLIMOS	**Seminar**: "Assessing the effectiveness of sustainability assessment in development cooperation: the environmental sustainability toolkit" by Tom Waas and Jean Hugé	27-01	DGD
49	KLIMOS	**Seminar** on KLIMOS activities	28-04	Rubens' Room, Academy of Sciences, Brussels
50	KLIMOS, Louvain Coopération	**Exchange best practices** between CEBioS, Klimos and Louvain Coopération about the use and development of toolkits for environmental mainstreaming in development cooperation	16-07	RBINS
51	KLIMOS	**Cooperation** on paper "Environmental Impact Assessment"	10-07 and several other meetings	RBINS
52	KLIMOS	KLIMOS **seminar** about Climate Change	13-11	DGD
53	CEBioS	'Ontwikkelingscirkels' with administrative personnel	Several meetings	RBINS
54	North South South project (VLIR-UOS, TRIAS ,NM-AIST, KU Leuven)	**Mission**, Multi-stakeholder **workshop, meetings** with TRIAS, NM-AIST	December	Arusha, Mto Wa Mbu, Tanzania
55	Centre de Surveillance de la Biodiversité (CSB)	**Mission** in RDC, CSB, Kisangani, **training** in scientific communication, institutional talks	October	RDC, Kisangani, CSB

56	VLIR-UOS, VVOB, BTC	**Ontwikkelingsdebat**: 'sustainable development goals'	23-01	BTC
57	VLIR-UOS	**Meeting** with Director K. Verbrugghen	15-06	VLIR-UOS
58	VLIR-UOS, KU Leuven	**North South South Tanzania**: project writing with NM-AIST, KU Leuven, succeeded	August	RBINS
59	VLIR-UOS	News year **event**: networking	26-01	Brussels
60	VVOB, Belgian embassy RDC	**Meeting** awareness in DRC cooperation, awareness project, in Kinshasa, VVOB office, Belgian embassy in Kinshasa, debriefing mission	October	Kinshasa
61	VLIR-UOS, VUB	**South Initiative Burundi** meetings	15-01, 07-05, 30-09	RBINS, VUB
62	ICCN institutional cooperation, Parc N. des Mangroves RDC	**Meetings** with director Marcel Colet, ICCN director of the Parc N. des Mangroves, RDC, Anne Laudisoit, Eric Verheyen, students	02-10, 13-11, 04-12	RBINS
63	KU Leuven	**Guest course** in Masters Aquatic Ecology and sustainable development (Prof. L. Brendonck)	05-10	Leuven
64	CEBioS	**Lecture** at MRV opening workshop	September	RBINS
65	Masters Oceans and lakes, VUB	Member of **jury**	04-09	VUB
66	FFRSA	Board meeting	18-11	BELSPO

Annex 1: Logframe matrix (2014-2018)