From BBI pilot project « Cooperation for the Development of Ecosystem Natural Capital Acounts in Francophone African Countries » to COPERNICEA

Didier BABIN

UQÀM

cirad
LA RECHERCHE AGRONOMIQUE POUR LE DÉVELOPPEMENT

www.ecosystemaccounting.net
contact@copernicea.net
didier.babin@cirad.fr

Regional BBI Round Table for Africa, Entebe, Uganda, 7-9 November 2017

Figure 14. In this illustration, the SDG's have been arranged to show how healthy ecosystems are a prerequisite for human wellbeing and economic development. Source: J. Lokrantz/Azote in Rockström & Sukdev 2016 and Folke et al. 2016.

Aichi Biodiversity Target (2010)

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

Target 2

By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

United Nations Decade on Biodiversity

2030 AGENDA

FOR SUSTAINABLE DEVELOPMENT

Sustainable Development Goals

UNITED NATIONS SUSTAINABLE DEVELOPMENT SUMMIT 2015
25 - 27 SEPTEMBER

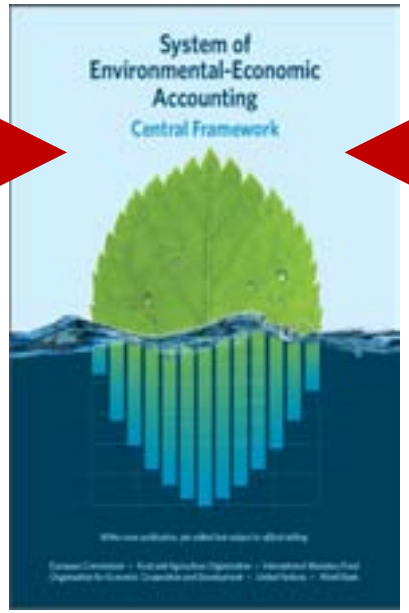
- 15.9 By 2020, integrate ecosystems and biodiversity values into national and local planning, development processes and poverty reduction strategies, and accounts
- 17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

https://sustainabledevelopment.un.org

National Accounting : SNA - SEEA and experiments

SNA

SEEA Volume 1
"Central Framework"



SEEA Volume 2
"Experimental Ecosystem Accounting"

World Bank: SEEA/ Applications WAVES

AEE: SEEA/ECA Ecosystem Capital Accounts

European Environment Agency

SEEA-EEA/ENCA-Mauritius

CDB: ENCA -QSP

What is ENCA ?

Example: Mauritius – Experimental Ecosystems Natural Capital Accounts 2014

- Land cover
- Water
- Biomass/Carbon
- Biodiversity
- Capability

Key points

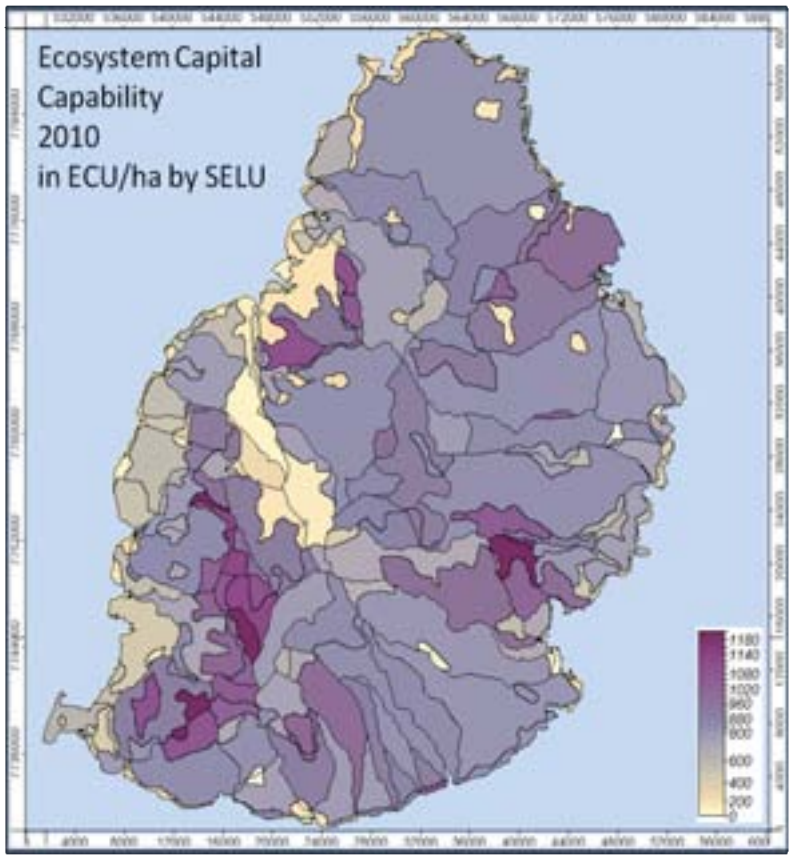
- A suite of accounts with land cover as a starting point
- It is complex but it can be done!
- Focuses on assets (e.g. natural capital) rather than services
- Learning by doing

http://commissionoceanindien.org/fileadmin/resources/ISLANDSpdf/Experimental_Ecosystems_Natural_Capital_Accounts_Mauritius.pdf

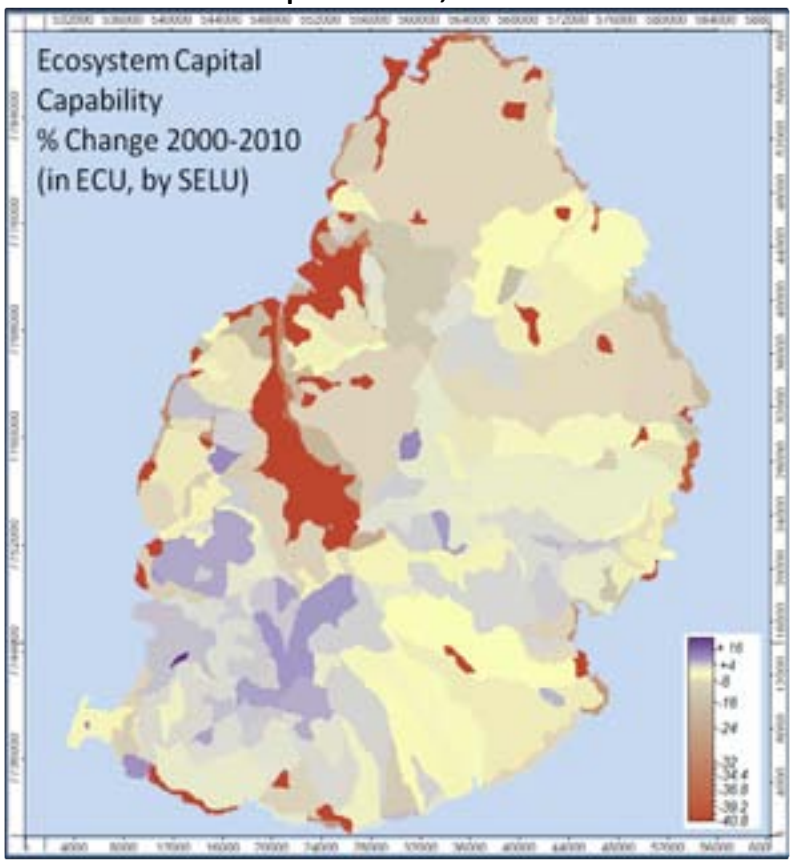
Source: Michael Vardon's presentation at the World Bank WAVES 1st Knowledge Exchange on Ecosystem Accounting, Manila, the Philippines, 23-27 February, 2015

Experimental Ecosystem Natural Capital Accounts in Mauritius

Ecosystem Capital Capability:
ECU value by Socio-Ecological Landscape Units, 2010



Ecosystem Capital Capability (inland):
Change in ECU value, % by Socio-Ecological Landscape Units, 2000-2010



Experimental ENCA,
Mauritius Case Study (IOC, 2014)

SEEA-ENCA Mauritius preliminary results :

The biomass-carbon account

Carbon Accounts show the capacity of the ecosystems to produce biomass and the way it is used by crops harvests and trees removal or sometimes sterilised by artificial developments or destroyed by soil erosion or forest fires (in line with IPCC guidelines).
Accounts are compiled using various sources such as products based on earth observation by satellite (e.g. MODIS NPP), on in situ monitoring (for IPCC-LULUCF, FAO/soil, FRA2010) and official statistics .

Simplified bio-carbon accounts by districts, 2010 — Tons of carbon

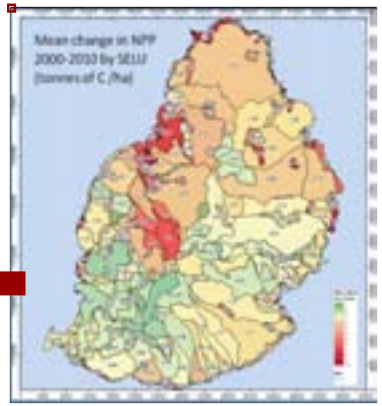
Provisional

2010	Rivière du Rempart	Pamplemousses	Flacq	Moka	Grand Port	Plaines Wilhems	Black River	Savanne	Port Louis	Tot
Initial stock 2010	**1457955**	**2101934**	**4135543**	**4165122**	**2855365**	**3327114**	**3173857**	**3196601**	**432317**	**24845808**
Woody biomass	873403	1137222	2068571	1744337	1796040	1643485	2224653	2409579	265193	**14162483**
Topsoil organic carbon	584551	964712	2066972	2420785	1059325	1683629	949204	787022	167124	**10683324**
Flows/inputs	**335582**	**417954**	**819601**	**675923**	**736068**	**454057**	**642970**	**739278**	**68922**	**4890354**
Net Primary Production	335582	417954	819601	675923	736068	454057	642970	739278	68922	**4890354**
Flows/outputs and decrease	**349143**	**448659**	**870542**	**708508**	**725853**	**481532**	**650835**	**744290**	**74976**	**5054339**
Removals, harvests	65446	90345	108405	56498	90172	35596	87914	81900	1698	**617974**
Wood removals										**0**
Sugarcane	*63718*	*86585*	*104230*	*52531*	*87208*	*31984*	*83773*	*80223*	*912*	**591165**
Food crops	*1727*	*3759*	*4175*	*3656*	*2918*	*3565*	*4141*	*1633*	*786*	**2636**
Other cops	*0*	*0*	*0*	*311*	*46*	*46*	*0*	*44*	*0*	**447**
Decrease due to land use change	4102	4761	5762	3629	3240	5216	2881	2290	1388	**33269**
Other decrease (fire, erosion…)	14580	21019	41355	41651	28554	33271	31739	31966	4323	**248458**
Soil/decomposers respiration v2	265016	332534	715020	606730	603888	407449	528301	628133	67567	**4154638**
Net Ecosystem Carbon Balance 1 (flows)	***-13562***	***-30705***	***-50941***	***-32585***	***10215***	***-27475***	***-7865***	***-5012***	***-6054***	**-163985**
Statistical adjustment	16597	28379	33235	15034	-29421	11163	-19714	-15632	6178	**45819**
Net Ecosystem Carbon Balance 2 (stocks)	***3035***	***-2326***	***-17706***	***-17551***	***-19206***	***-16312***	***-27579***	***-20644***	***123***	**-118166**
Final Stock 2010	**1460990**	**2099608**	**4117837**	**4147571**	**2836159**	**3310802**	**3146278**	**3175957**	**432440**	**24727642**
Woody biomass	876438	1134896	2050865	1726786	1776835	1627173	2197074	2388935	265316	**14044318**
Topsoil organic carbon	584551	964712	2066972	2420785	1059325	1683629	949204	787022	167124	**10683324**

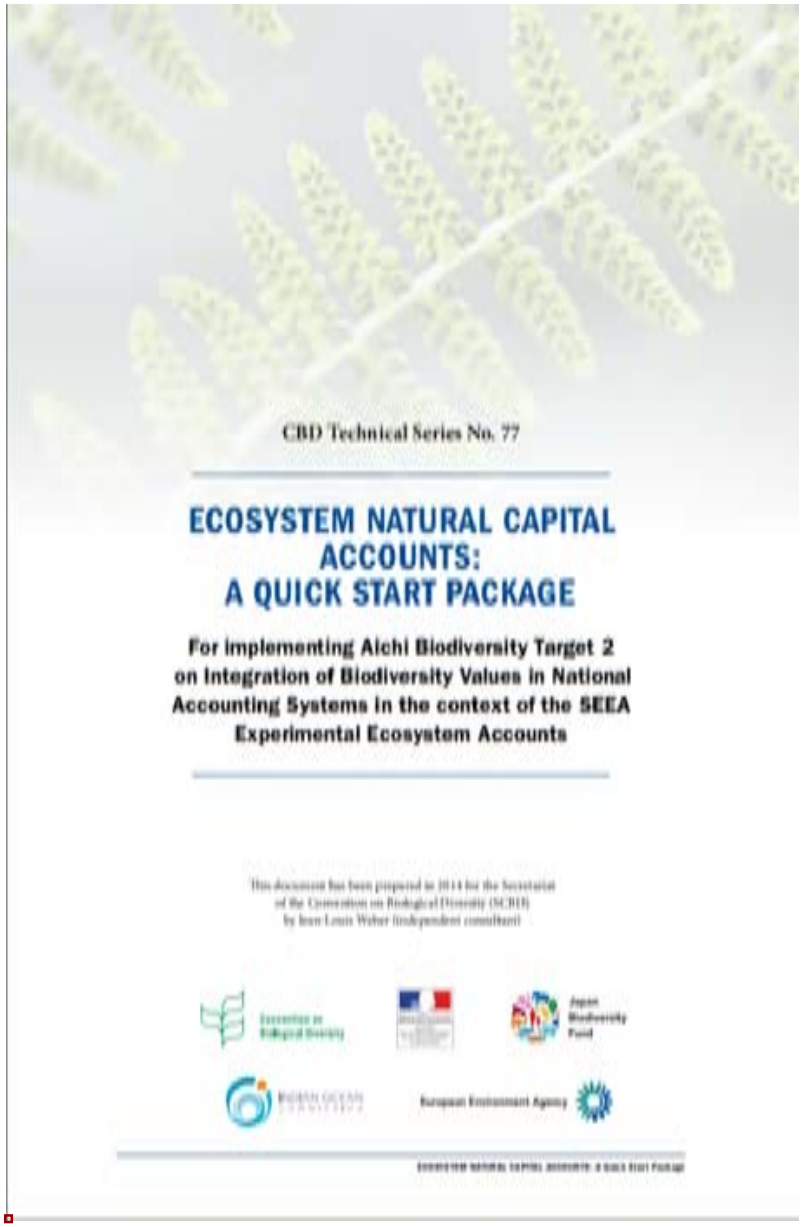
Net accessible bio-carbon resource 2010	**73600**	**83094**	**86875**	**51642**	**112974**	**30296**	**87089**	**90500**	**1479**	**617550**
Change in stocks in the previous year	3035	-2326	-17706	-17551	-19206	-16312	-27579	-20644	123	**-118166**
Flows/inputs (+)	335582	417954	819601	675923	736068	454057	642970	739278	68922	**4890354**
Soil/decomposers respiration v2 (-)	265016	332534	715020	606730	603888	407449	528301	628133	67567	**4154638**
Index of intensity of use of bio-carbon 2010	**112**	**92**	**80**	**91**	**125**	**85**	**99**	**111**	**87**	**100**

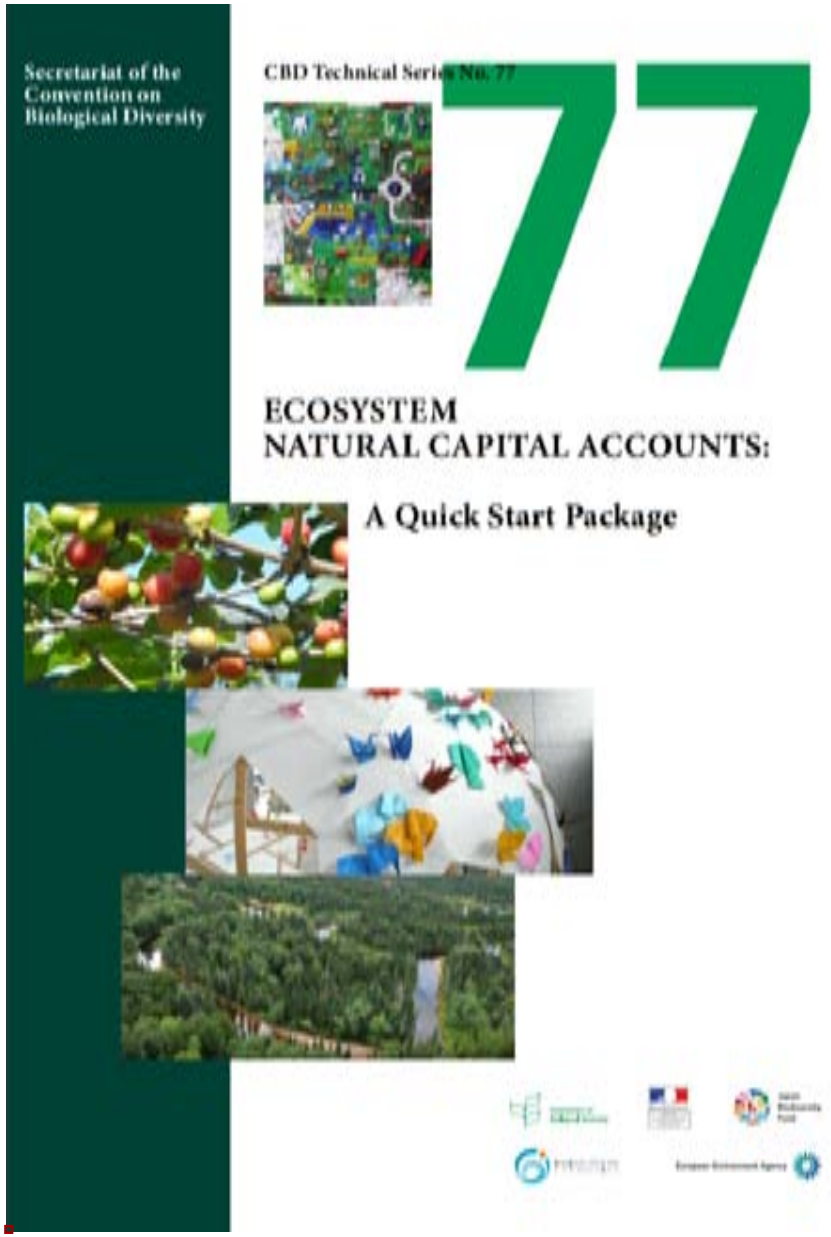
Woody biomass/ tons of C

Change in NPP/ tons of C



Sugar cane harvest/ tons of C


CBD Technical Series No. 77
ECOSYSTEM NATURAL CAPITAL ACCOUNTS: A QUICK START PACKAGE
For implementing Aichi Biodiversity Target 2 on Integration of Biodiversity Values in National Accounting Systems in the context of the SEEA Experimental Ecosystem Accounts


Secretariat of the Convention on Biological Diversity
CBD Technical Series No. 77
77
ECOSYSTEM NATURAL CAPITAL ACCOUNTS:
A Quick Start Package

Ecosystem Natural Capital Accounts: A Quick Start Package

Special Training Session at COP 12, Pyeongchang (Republic of Korea)

COP12 / MOP7 / MOP1
PYEONGCHANG KOREA 2014

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE
MINISTÈRE DES AFFAIRES ÉTRANGÈRES ET DU DÉVELOPPEMENT INTERNATIONAL

Japan Biodiversity Fund

ONF International

Convention on Biological Diversity

Side event organized by CIRAD, Université du Québec à Montréal (UQAM), and the CBD, promoting the upcoming Summer School on "Accounting Ecosystems" at UQAM

École d'été 2016

Pratique de la Comptabilité Écosystémique

> Formation au démarrage de comptes, méthodes, outils et organisation

> 8 au 19 août 2016

Département de Géographie de l'UQAM

Pavillon Hubert-Aquin – Campus A – 4160, 400 rue Sainte-Catherine Est, Montréal QC H2L 2C5, Canada

Technical and Financial Supports of the Montreal Summer School in 2016

Convention sur la diversité biologique

Japan Biodiversity Fund

Bio-Bridge Initiative

UQÀM

cirad

LA RECHERCHE AGRONOMIQUE POUR LE DÉVELOPPEMENT

IGN France INTERNATIONAL

GDN Global Development Network

ONF International

ORGANISATION INTERNATIONALE DE la francophonie

PRCM

CSBQ QCBS

INSTITUT DE LA FRANCOPHONIE POUR LE DÉVELOPPEMENT DURABLE IFDD

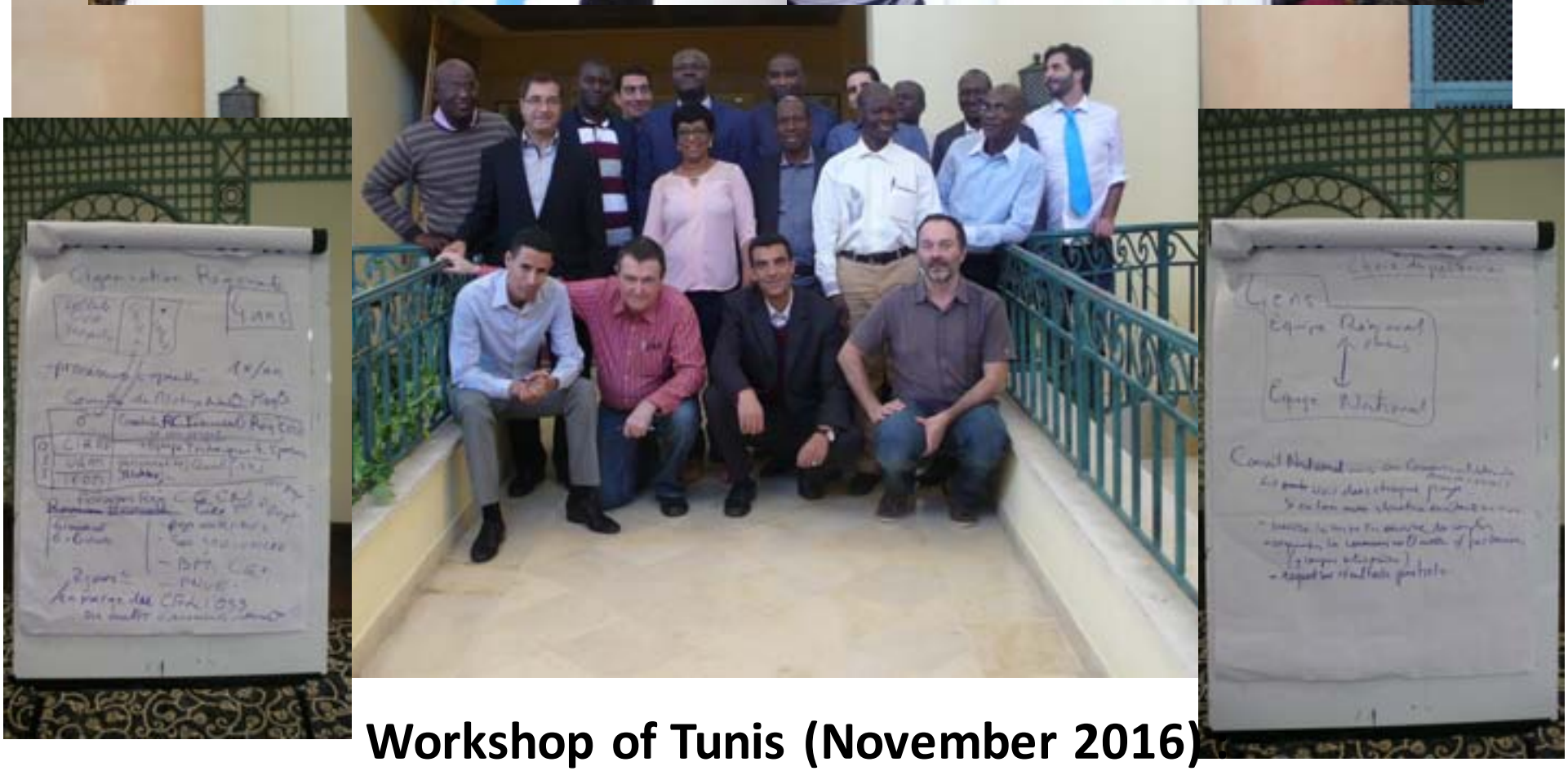
Professionnals from francophone Africa ...

Summer School on ENCA for Francophone Africa

Montreal, 2016

Workshop for the development of a Regional Project on ENCA

Montréal, Canada
August 2016



Workshop of Tunis (November 2016)

Officially designated National Fontact Points

- **Burkina-Faso** : Paul BOMBIRI, Directeur des Statistiques Sectorielles **(Min. de l'Env., de l'Economie Verte et du CC)**
- **Guinée-Conakry** :Djiramba DIAWARA, Conseil Nat. De l'Env. Et du DD (**Min. De l'Env., des E&F)**
- **Maroc** : Rajae CHAFIL, Directrice de l'Observation, des Etudes et de la Planification (**Min. Dél. Chargé de l'Env.**)
- **Niger** : **CNSEE** Centre National de Surveillance Ecologique et Environnementale (**Min. de l'Env. Et du DD**)
- **Sénégal :** Gallo SOW, Ing. Statisticien Economiste, conseiller tech. N°1 du **Ministre de l'Env. et du DD**
- **Tunisie :** Hamda ALOUI, sous-directeur du Milieu Rural (**Min. Des Affaires Locales et de l'Env.)**

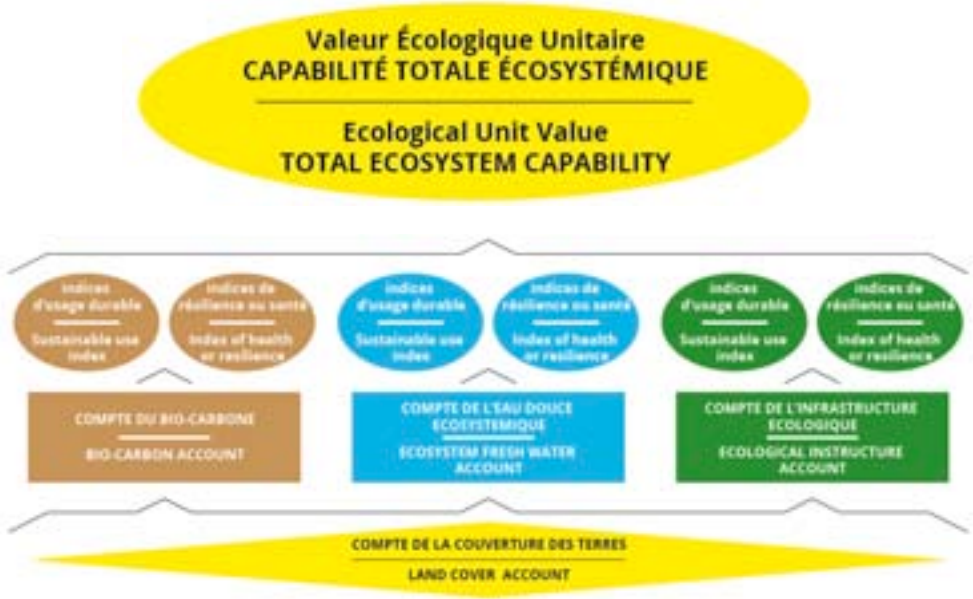
Technical and financial first round-table

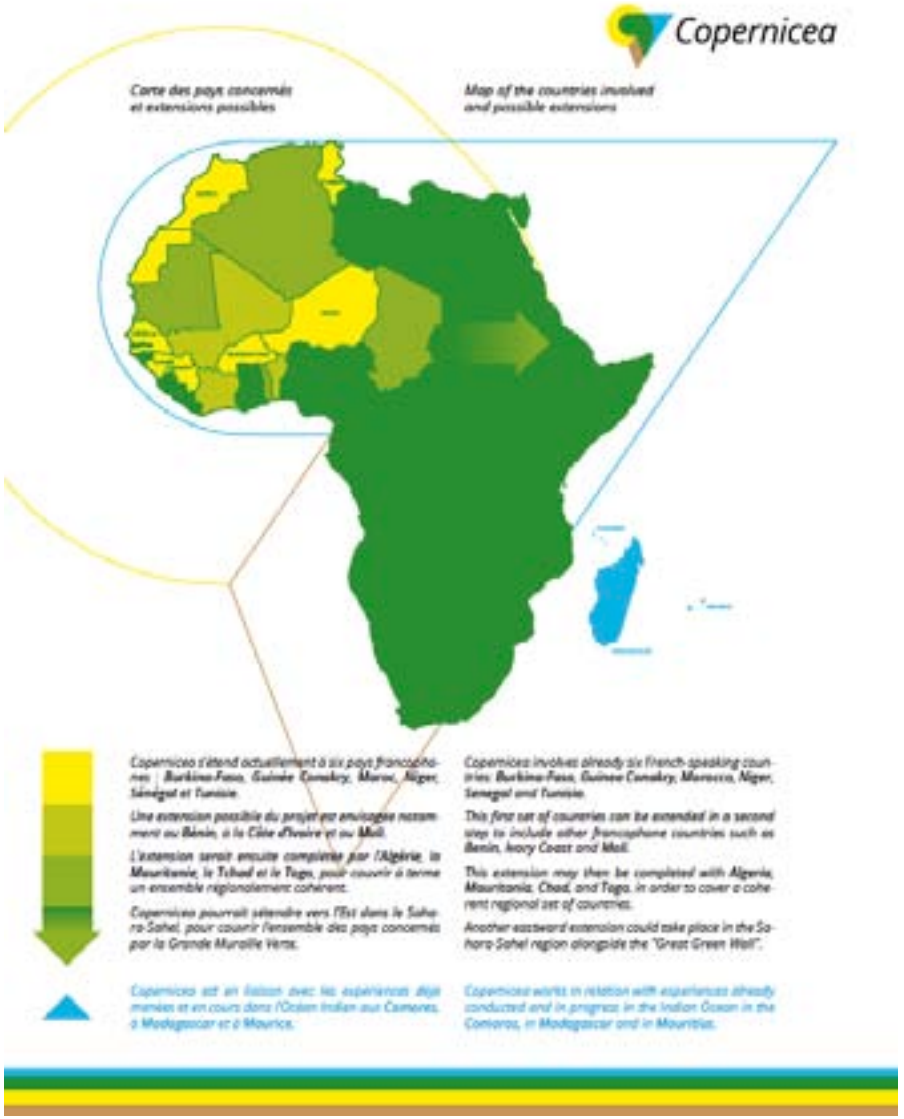
Paris, France
May 2017

Copernicea

Coopération Régionale
pour de Nouveaux Indicateurs
de **c**omptabilité **E**cosystémique
en **A**frique

Regional Cooperation
for New Ecosystem
Accounting Indicators
in Africa





Regional Training Madagascar & Comores

Antananarivo, October 2016

Biodiversité
un trésor partagé

Financé par
l'Union européenne

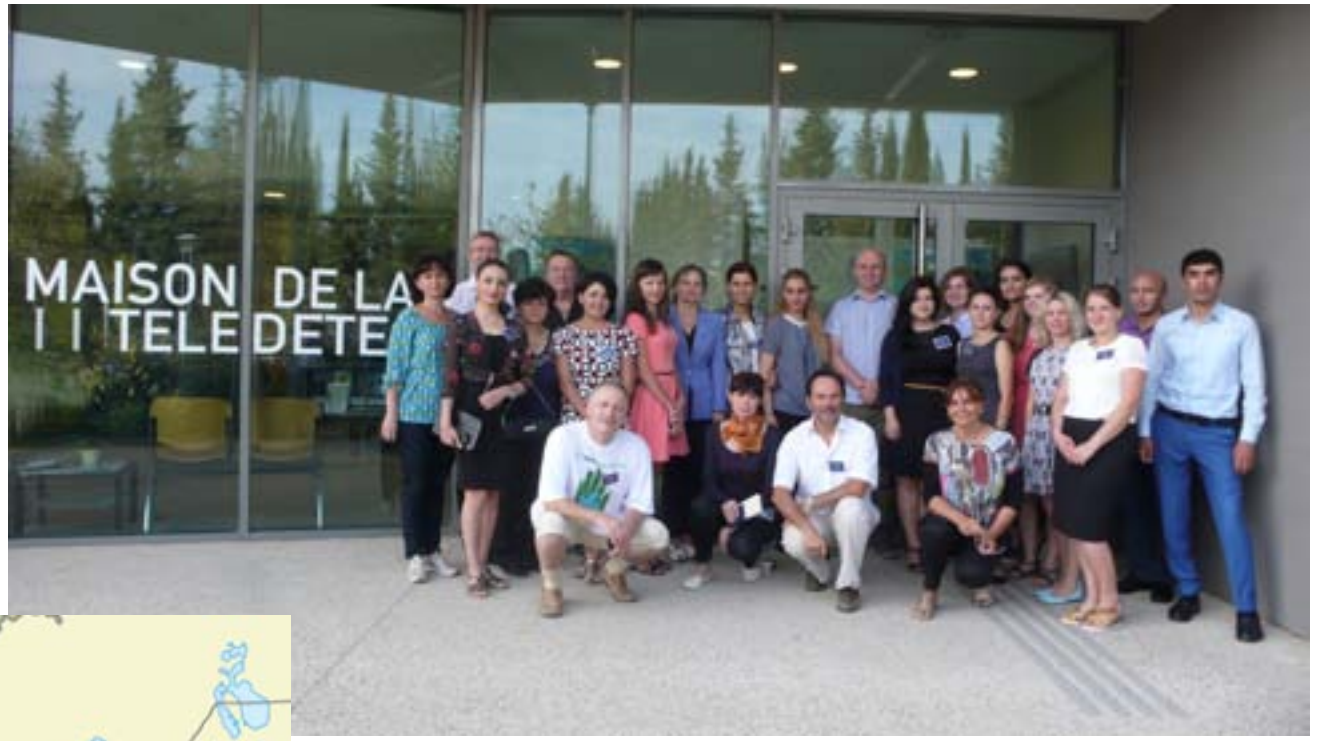
COMMISSION DE
L'OCÉAN INDIEN

Regional Training for the Eastern Partnership countries

Montpellier, France
September 2017

ENI SEIS II East

Information System principles and practices in the Eastern Partnership countries



European Environment Agency

Financé par l'Union européenne

cirad
LA RECHERCHE AGRONOMIQUE POUR LE DÉVELOPPEMENT

Lessons learned

- Enhancement of the Technical and Scientific Cooperation
- How this project could be replicated in other region?
- Other lessons

Next steps

- To format the project in the standards of the Technical and Financial Partners
- To search additional Financial Partners
- To create a Community of Practice Network
- To mobilise African Research Institutes and Universities (workshop in Dakar, December 2017)
- To establish a multidisciplinary degree programs and Mooc with Universities
- To explore the possibility of an institutionalized “Academic Chair” (related to the CBD and other Rio Conventions and SDGs, …)

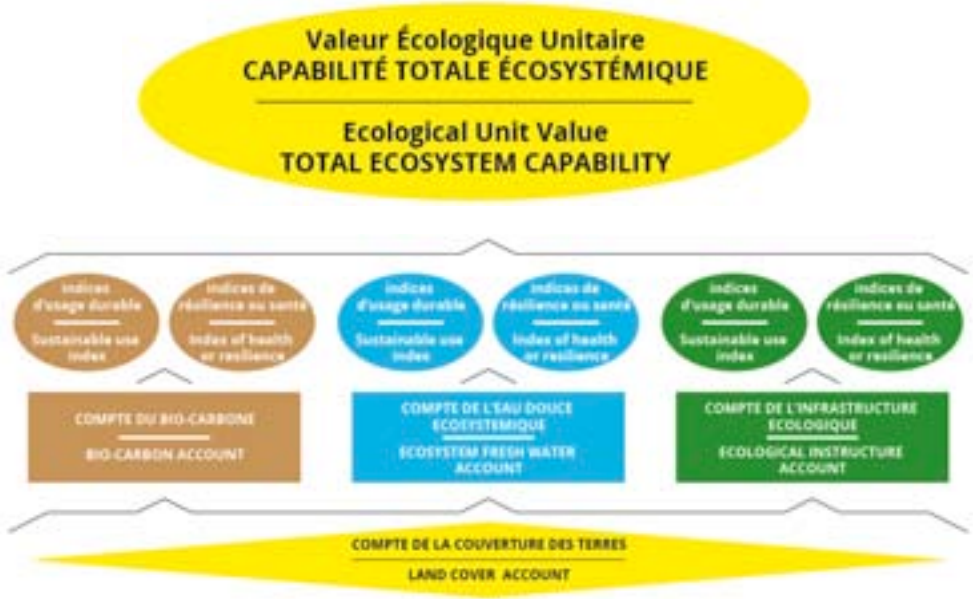
didier.babin@cirad.fr

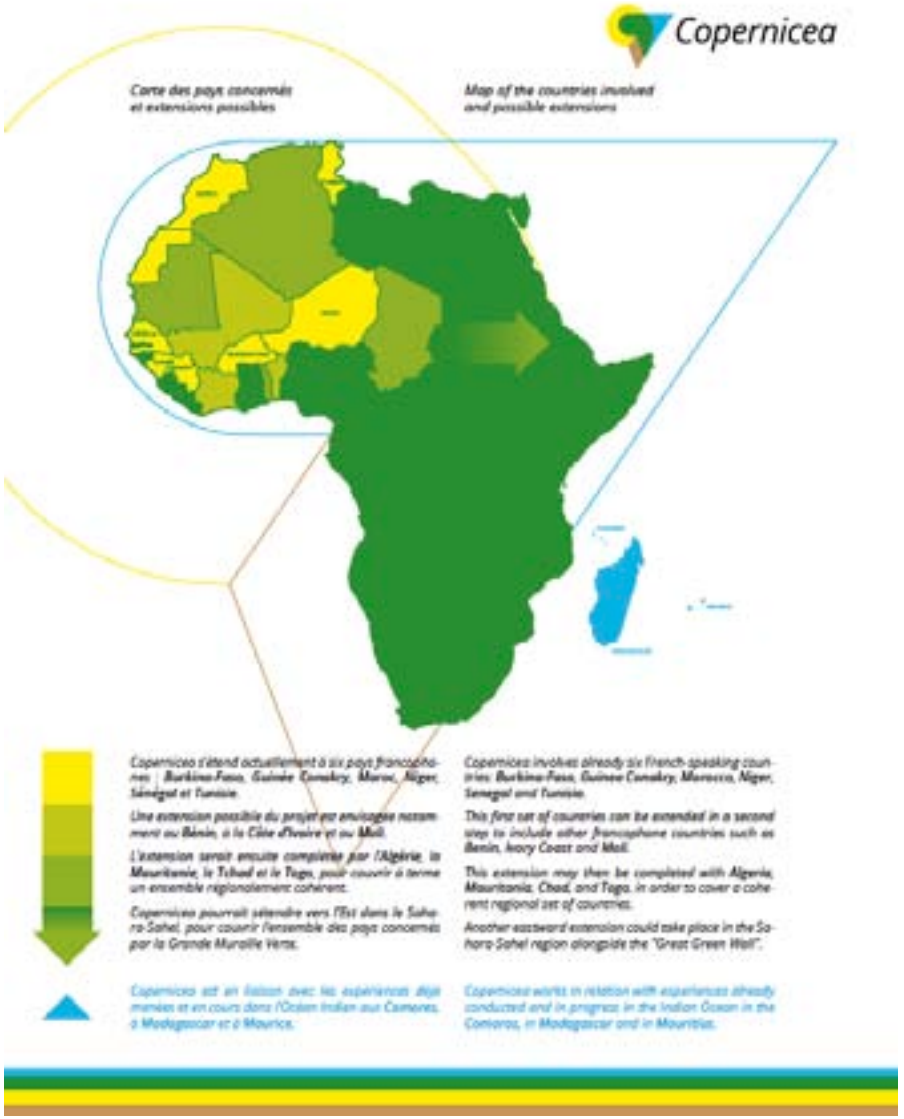
Merci de votre attention !

Copernicea

Coopération Régionale
pour de Nouveaux Indicateurs
de **c**omptabilité **E**cosystémique
en **A**frique

Regional Cooperation
for New Ecosystem
Accounting Indicators
in Africa





Copernicea

Overall objectives of the project :

- Contribute to the measures of the wealth of Nations in a perspective of sustainable development
- Test concrete environmental and economic accounting systems in order to show the interest and facilitate their integration in the strategies of the donors
- Implement the Aichi biodiversity target on incorporating biodiversity values into national accounting systems
- Participate in the establishment of indicators of progress complementing the gross domestic product and the statistical capacity building of developing countries by implementing SDG 17.19
- Expand the commitment of African countries to the establishment of environmental accounting systems and the promotion of natural capital accounting (Sustainability Summit in Africa and the Gaborone Declaration)
- Promote and build capacity of African expertise on ecosystem-natural capital accounting

Copernicea

Specific objective :

- Based on regional scientific and technical cooperation, the project's specific objective is to provide the participating countries with a structured and autonomous capacity.
- The approach is based on an operational mechanism for the fast track development of the biophysical and socio-economic data infrastructure of ecosystem natural capital accounting in a way that guarantees the sustainability of this mechanism in six West and North African countries as well as its replication in other countries of the region.
- The project will take into account national and regional conditions, learn by doing and progress in a stepwise incremental way.

Copernicea

and expected results :

1. A ENCA regional institutional structure and a community of practitioners are organized and a national ecosystem accounting council is set up to steer experiments in each beneficiary country (component: **Institution**);

2. A sustainable and operational ENCA geographic and statistical data infrastructure is created in each country and synthetic indicators for monitoring the evolution of the total ecological value of the participating countries or/and specific territories, with the purpose of carrying out periodic assessments (component: **Operationalization**) ;

Copernicea

and expected results :

3. A reliable and comparable ENCA dataset is provided at the regional and country levels for the integration of ecosystem accounts in the decisional and planning process as data sources for consistent sustainable development indicators, to address ecosystems-related emerging challenges, and to promote the consideration of natural capital in countries' national accounting systems, and to facilitate decision making processes and planning. (component: **Integration**);

4. The capacities of national institutions of the countries involved are strengthened and recognized for conducting ecosystem natural capital accounting on a regular basis and implement complementary researches. (component: **Capacity**).

Copernicea

Project Content :

1. INSTITUTION:

1.1. Develop an ENCA regional cooperative intermediation platform managed by a regional intergovernmental organization (Sahara and Sahel Observatory).

1.2. Set up a national experimental ecosystem accounting Council composed of officials from ministries of environment and sustainable development, economy and finance, technical ministries and directors of other concerned national institutions, in particular national geographic agencies and statistical offices, in order to ensure the sustainability of the ecosystem accounting system and its appropriation by the different partners.

Copernicea

Project Content :

2. OPERATIONALIZATION :

2.1. Set up an autonomous ENCA mechanism in consultation with the national institutions concerned, in particular the national statistical and geographic offices and the agencies and scientific bodies in charge of ecosystem monitoring in each country

2.2 Produce the first ecosystem natural capital accounts at the country-level based on the quick start package methodology published by the United Nations Convention on Biological Diversity in order to integrate biological diversity values into the national accounting systems.

Copernicea

Project Content :

3. INTEGRATION :

3.1. Develop communication and awareness rising mechanisms adapted to the targeted audiences, from Institutions to decision makers and media, to facilitate the ENCA use and its consideration by the different decisional processes.

3.2. Mobilize concerned actors at the national and regional levels to create a partnership framework between ENCA data holders and producers to share available data and facilitate access by users and decision makers with the development of dedicated decision making processes tools.

Copernicea

Project Content :

4. CAPACITIES :

4.1. Develop the skills of qualified national institutions concerned in terms of ENCA techniques and methods in order to make them autonomous for accounts production, assessment of data and analysis procedures, and the enhancement their quality.

34.2. Collaborate with universities and academic excellence centres for the organization of certified trainings to increase skills in this emerging field at the regional and country level and facilitate accompanying research.

Copernicea

Institutional Development

The project involves presently 6 French-speaking (francophone) countries: **Burkina-Faso, Guinea Conakry, Morocco, Niger, Senegal and Tunisia.**

This first set of countries can be extended in a second step to include other francophone countries such as Benin, Côte d'Ivoire and Mali and possibly Algeria, Mauritania, Chad, and Togo in order to cover a coherent regional set of countries. Other extension in the Sahara-Sahel region can take place eastward alongside the "Great Green Wall".

Copernicea

Institutional Development

The main institutions to be responsible for the project execution are the **Sahara and Sahel Observatory (OSS), main regional leader**, the *French Agricultural Research Centre for International Development (CIRAD)*, *l'Université du Québec à Montréal (UQAM)* in collaboration with institutions of each participating country and other international partners as the *Institut de la Francophonie pour le développement durable (IFDD)*.

The total project duration is estimated at 4 years for a total amount of 5 million €.