Outcomes of projects of implementation of ecosystem natural capital accounts in Africa and the Guiana Shield

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ENCA QSP, a variant of the SEEA-EA

- Ecosystem Natural Capital Accounting “Quick Start Package” (ENCA-QSP) is a methodology published by the CBD in 2014 to support the implementation of ecosystem accounts as requested by the 2010 Aichi Biodiversity Strategy Target 2.

- ENCA-QSP is a variant of SEEA-EA. While the SEEA-EA aims to measure the economic monetary benefits of ecosystem services considered as assets, the ENCA Quick Start Package addresses the potential and resilience of ecosystems in biophysical terms in order to measure their degradation.

SEEA-EA and ENCA-QSP accounts in physical terms are broadly compatible
ENCA QSP: MEASURING TOTAL ECOSYSTEM CAPABILITY (IN ECU)

Land cover extent & Rivers length
(hectares or km)

Bio-Carbon Stocks & flows
A1: Resource Potential (tonnes)
A2: Composite Index Sustainable Use & Health

Water Stocks & flows
B1: Resource Potential (1000 m³)
B2: Composite Index Sustainable Use & Health

Ecosystem Infrastructure Stocks & flows
C1: Resource Potential (weighted hectares)
C2: Composite Index Sustainable Use & Health

D: Average ecological unit value [in ECU]
D = (A2+B2+B3)/3

A3: Carbone Ecosystem Capability [CEC in ECU]
A3 = A1 x D

B3: Water Ecosystem Capability [WEC in ECU]
B3 = B1 x D

C3: Ecosystem Infrastructure Capability [EIC in ECU]
C3 = C1 x D

E: Total Ecosystem Capability [TEC in ECU]
E = A3+B3+C3

The Observatory of Sahara and Sahel (OSS) is an international organization created in 1992. OSS is composed of 26 African countries, 7 non-African countries and 13 Member organizations (incl. FAO, UNCDD, regional bodies and NGOs).
AfrikENCA: full accounts of socio-ecological landscape units (SELUs) aligned to small river basins (~150 km² – more than 200,000 for Africa)
Examples of ENCA accounts and derived indicators

EIP4 indicator - Ecosystem Infrastructure Potential by elementary SELUs and aggregated by catchment

Extraction of indicators by forested SELUs classified according to USGS [ELU] climate types
Examples of primary datasets reprocessed for ecosystem accounting

Using more than 50 international datasets and statistics, AfrikENCA full accounts are compiled for more than 200,000 statistical units, for 2001, 2005, 2010 and then annually up to 2020. ENCA tables, as well as reprocessed (resampled, extrapolated, corrected...) data, will be made available on the OSS website (but not the primary data themselves, which belong to providers).
COPERNICEA beyond AfrikENCA: National Projects for 6 Countries

- **Six participating countries**: Burkina Faso, Guinea-Conakry, Morocco, Niger, Senegal and Tunisia
- Nation wide and thematic or local projects (coastal zones, oasis, argan forests, water, ...)

- **Vocational training** of national teams to ENCA (environment agencies, forest agencies, statistical offices, universities...) using the **KANGARÉ-ECOSYSTEMS** Tutorial. First round of on-line training in 2021 and 2022; 7 training sessions followed by 100 persons in total. In situ training sessions by countries started...

- Collection, processing and ingestion of national and local datasets, using the **Sys4ENCA processing platform** developed by VITO in the context of the IUCN PAPBio project financed by the EU. Training of national teams in May 2023.

The Sys4ENCA processing platform developed by VITO for semi-automatic Ecosystem Natural Capital Accounting (ENCA) following the ENCA Quick Start Package (QSP)
Other ENCA projects in Africa

R. GUINEA Agro-Ecological Zoning and accounts by Min Agri, IGN-Fi and CIRAD

R. GUINEA and SENEGAL: Nature Protected Areas by UICN and VITO plus experts

MADAGASCAR: Nature Protected Areas by U. Antananarivo

CECN Antrema et Nocibé [Université de Madagascar]

GABON: Country and Nature Protection for 3 species, by UICN, WWF Gabon and ONFI

And:
- Mauritius Second Generation (University of Mascareignes)
- ENCA Kenya by IUCN and ONFI
- ENCA Park of the Niger W (incl. Guinea, Burkina Faso and Benin), by IUCN and VITO

Source: Solofo RAKOTONDRAOPIANA, Tony RAMIHANGIHAJASON et alii
ENCA in the Guiana Shield 2000 & 2015
by WWF and ONFI with National Teams of Guyana, Suriname, French Guyane and Brazilian Amapá

FINDINGS

- High quality land cover maps provided by national teams, with a focus on Gold mining
- Full set of accounts
- Water quality accounts reflecting in particular gold mining impacts on rivers
- Total losses of trees = 2.6 times roundwood removal recorded in statistics
- Broad use of international data sets; understanding of the need of more than 2 dates

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