

System of Environmental Economic Accounting

Natural Capital Accounting and Valuation of Ecosystem Services (NCA&VES) project

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Partners

- Implementing partners
 - United Nations Statistics Division
 - United Nations Environment Programme
 - (CBD)
- Sponsor
 - European Union
 - Partnership Instrument
- Five partner countries
 - Brazil, China, India, Mexico, South Africa
- Project duration
 - 4 years from 2017-2020



Overall objectives

- Advance the knowledge agenda on Natural Capital Accounting, in particular ecosystem accounting
- By initiating pilot testing of SEEA Experimental Ecosystem Accounting, with a view to:
 - Improving the measurement of natural biotic resources, ecosystems and their services at the (sub)national level
 - Mainstreaming biodiversity and ecosystems in (sub)national level policy-planning and implementation
 - Contributing to the development of internationally agreed methodology and its use in partner countries.

SEEA



The System of Environmental Economic Account (SEEA)

- Two standards, one approach:
- The SEEA Central Framework (SEEA CF) was adopted as an international statistical standard by the UN Statistical Commission in 2012 to measure the environment and its relation with the economy.
- The SEEA Experimental Ecosystem Accounting (SEEA EEA) complements the Central Framework and represents international efforts toward coherent ecosystem accounting. Work is currently underway on a revision of SEEA EEA.





80 countries and counting SEEA Around the World





SEEA-EEA accounts





Work streams

- Piloting ecosystem accounts in physical and monetary terms
- Developing guidelines and methodology
- Indicators
- Business accounting
- Communication and outreach
- Training and capacity development
- Scenario analysis for policy options



The Sustainable Development Goals 'wedding cake' (http://eatforum.org/event/eat-stockholm-food-forum-2016/)

Country	Type of accounts	Area	Ecosystem services
Brazil	Services supply	Matopiba region	Water flow regulation and soil retention (erosion control) using the Soil and Water Assessment Tool (SWAT)
China	Service supply (by main ecosystem type); natural resource balance sheets on water, timber and land.	Guangxi; Guizhou National level balance sheets	Multiple services covering provisioning services (e.g. harvested living resources), regulating services (e.g. carbon sequestration) and culture services (e.g. tourism value) for up to 6 ecosystem types
India	Extent; condition; services supply; Soil accounts	Karnataka States	Crops provisioning, nature base recreation and biodiversity
Mexico	Extent; condition; services supply	Aguascalientes + upscale towards national level	Carbon sequestration and storage; water yield; crop provisioning; additional services (tbd)
South Africa	National ecosystem extent account, city-region accounts, protected area accounts, marine ecosystem accounts, species accounts; and service supply in KZN.	National; Kwa Zulu Natal (KZN); selected areas (cities, protected areas)	Multiple services covering provisioning services (e.g. harvested living resources), regulating services (e.g. carbon sequestration) and culture services (e.g. tourism value) for the catchment area in KZN

Example: Accounts to be produced in NCA&VES Project in South Africa



Timeframe of the project









Selected events in 2017 & 2018

- Inception and assessment mission to 5 project countries
- Workshop on Valuation (jointly with BfN 2017)
- Policy Forum on Natural Capital Accounting (2017, 2018)
- Regional Training Workshop on the SEEA Experimental Ecosystem Accounting (2017, 2018)
- Expert meeting on Ecosystem Valuation in the context of Natural Capital Accounting (2018)
- Forum of Experts in Ecosystem Accounting (2018)
- Side-event to UN Statistical Commission and UN World Geospatial Congress (2018)
- Side-event Convention on Biodiversity COP-14 (2018)

Events in 2019

- Follow up mission in 5 project countries and national training workshop
- Expert meeting on Ecosystem Services (Jan 2019, New York)
- SEEA Indicators meeting (Feb 2019, Cambridge)
- Side event of the 50th session of the UN Statistical Commission (March 2019, New York)
- Forum of Experts in SEEA EEA (Jun 2019, New York)
- Business accounting workshop (Q3/Q4 2019)
- Regional training workshop on SEEA EEA (South Africa Q4)
- Engagement events (Sino-German Workshop on Biodiversity and Ecosystem Service, Natural Capital Symposium, ESP Conference, etc.)



NCA&VES in China



Objectives

- 1. Strengthen the capacity of NBS and other relevant departments to compile natural resources balance sheet, solve technical problems and improve the data quality of natural resources balance sheet.
- 2. Assist in the construction of methodology for ecosystem accounting and valuation of ecosystem services in Guangxi and Guizhou based on the SEEA Experiment Ecosystem Accounting (SEEA EEA), and further improve the scientific and rational calculation results.
- 3. Carry out scientific and effective test of the framework of the SEEA EEA, and contribute China's best practices and experience to its subsequent revision.
- 4. Carry out the testing of the related indicators of the ecosystem including the sustainable development goals (SDG) and their relationship with the economy.



Expected achievement

- 1. Resolve problems identified in the pilot compilation of natural resources balance sheet led by the NBS by providing substantial input, promote the compilation of land, forest and water resources assets accounts at national level, and explore to what extent the ecosystem accounting approach (by providing a clear spatial basis) could support the natural resources balance sheet programme
- 2. Guangxi and Guizhou Bureau of Statistics separately compile the physical and monetary ecosystem accounts and ecosystem related indicators based on SEEA EEA, and identify ecological compensation standards by using the valuation results of ecosystem accounting, thus providing references for the related policies at the provincial level.



Progress to date

- Inception mission : 31 October 3 November 2017
- Regional training workshop on SEEA Experimental Ecosystem Accounting: 6-8 November 2017
- 2nd Assessment mission: 21-29 May 2018,
- 3rd Assessment mission: 25 March 1 April 2019

















Findings

- Strong support from the local government with clear mandate and policy focus
 - > Assessment
 - > Ecological compensation
- Established institutional mechanism and assessment process at the provincial level to move forward the implementation
 - > Provincial bureau of statistics serve as the main coordinating agency
 - > Partnership with different line ministries and research institutions
- Existing works on ecosystem accounting exist in both provinces that serve as good starting points for the project to build upon
 - > Guangxi comprehensive ecosystem assessment on 6 ecosystem types, namely Farmland, Forest, Grassland, Freshwater ecosystem, Marine ecosystem, Urban ecosystem
 - > Guizhou existing work include the Forest ecosystem service assessment, GEP assessment work on 5 ecosystem types and natural resource balance sheet programme



Progress in Guangxi

- Draft "Guidelines for the Pilot of Natural Capital Accounting and Valuation of Ecosystem Services project"
- Compiled by the Guangxi Zhuang Autonomous Region Bureau of Statistics with input and recommendation from the project team.
- Methodology aligned with SEEA EEA
- Next step
 - > Finalization of the Guideline by June 2019

Guidelines for the Pilot of Natural Capital Accounting and Valuation of Ecosystem Services Project

(Draft)



Guangxi Zhuang Autonomous Region Bureau of Statistics January 2019





1.指南修订依据 Basis for the guidelines revision

a.《2012年环境经济核算体
 系:中心框架》

SEEA CF

b.《2012年环境经济核算体
 系:实验性生态系统核算》

<u>SEEA EEA</u>

 c.《2012年环境经济核算体 系实验性生态系统核算:技 术建议》

SEEA EEA Tech Rec





1.指南修订依据 Basis for the guidelines revision

- d.联合国代表团反馈报告 China mission report
- e.针对广西指南详细评价

Detailed comments of Guangxi program

- f.中国自然资本核算与生态系统服务估价项目国家计划 National Plan of Natural Capital Accounting and Valuation of Ecosystem Services in China
- g.关于自然资源与生态系统核算若干概念的讨论 Differentiation of the core concepts of natural resource and ecosystem accounting



2、主要修订之处 Major revisions

• a. 进一步厘清了有关概念和分类

Clarify the concerned concepts and classifications

- b. 完善了自然资本核算与生态系统服务估价试点核算框架 Improved accounting and valuation framework
- c. 设置三类核算账户: 自然资源资产账户、生态系统资产
 账户和生态系统服务账户

Set up three types of accounts for accounting: natural resources asset accounts, ecosystems asset accounts, for ecosystem services accounts



2、主要修订之处 Major revisions

 d.统一和规范计算不同类型生态系统服务价值的基本空间数据、 相关参数来源、生物物理模型。

Unify and standardize the basic spatial data, coefficient value and biophysical modelling used for calculating the different types of ecosystem services value.

- e.确定不同类型生态系统服务对应的实物量
 Fix up the methodology for compiling ecosystem accounts in physical term
- f.统一规范不同类型生态系统服务价值的估价方法 Unify and standardize valuation methods of different types

of ecosystem services

Scope

- Natural resources asset accounts (based on SEEA Central Framework)
 - > Land use and land cover (physical)
 - > Forest land use and land cover (physical)
 - > Timber resources (physical, monetary, carbon)
 - > Water resources (physical)
- Ecosystem account (based on SEEA EEA)
 - > Ecosystem extent account
 - > Ecosystem condition account
 - > Ecosystem services account (physical and monetary)
- Six ecosystem types
 - > Farmland
 - > Forest
 - > Grassland
 - > Freshwater and wetland
 - > Coastal and marine
 - > Urban



Ecosystem Extent Map in Guangxi





Scenario Analysis in Guangxi - Xijiang River Basin





Scenario analysis in Guangxi

- Reason to undertake scenario analysis
 - > Inform or influence the selection or adaptation of an environmental policy
 - > Demonstrate the usefulness of the SEEA-EEA accounts
 - Demonstrate the applicability of different modelling techniques for policy scenario analysis, drawing on the accounts
 - > Contribute to the mainstreaming of the use of environmental and ecosystem accounts in local/provincial/national level policy-planning and implementation
- Scenario analysis in Guangxi
 - > Focus on the Regional eco-compensation in the Xijiang River Basin
 - > Possible scenarios to be considered
 - Compensation from downstream to upstream for upstream's effort in preserving the environment (e.g. preserving the forest)
 - Compensation for the removal the polluted industry (pig farm, aquaculture)
 - > Next step Guangxi Bureau of Statistics to identify the target policy scenario and develop a work plan after consultation with the Development and Reform Commission by May 2019



Progress in Guizhou

- 1st draft of Research Program of the Natural Capital Accounting and Valuation of Ecosystem Services project in Guizhou developed
- Institution coordination established
 - Provincial bureau of statistics of Guizhou to coordinate with the data collection and liaison with the relevant line ministries
 - Guizhou Normal University to develop the research programme, and compile the natural resource balance sheet and ecosystem accounts
- Further refine the scope and explore policy question based on the discussion during the assessment mission





2019 work plan

- Finalization of the Guidelines for the Pilot of Natural Capital Accounting and Valuation of Ecosystem Services project
 - > Guangxi June 2019
 - > Guizhou Oct 2019
- Compilation of ecosystem accounts in physical and monetary terms and natural resource balance sheet by 2019
 - > Guangxi 6 ecosystem types using 2016 and 2017 data
 - > Guizhou 5 ecosystem types
- Guangxi to conduct the study of ecosystem compensation standards in Xijiang basin based on SEEA-based scenario analysis assessment in the context of regional ecosystem compensation policy making.
- Upcoming events
 - Ecosystem accounting seminar in Beijing to disseminate the project progress and result (Nov 2019)



2020 work plan

- Disseminate the results of the project in China at various international meetings in order to contribute to the methodological research and development and implementation of natural capital accounting at the global level.
- It is envisaged the project work could be presented at the Conference of the Parties (COP) 2020 in Kumming, China.



Challenge

- Classification standard
- Data gap
- Scoping question determine the priority account to narrow the scope
- Linking information to policy
- Explore the linkage between the SEEA Central Framework and SEEA Experimental Ecosystem Accounting
- Request for further training from the provincial government



Support from the UN project team

- Written recommendations to the Guidelines/research programme developed by the provinces
- Technical advisory support to the provincial bureau of statistics in compiling the accounts
- Conduct scenario analysis assessment in Guangxi
- Regular meetings/ discussions through emails with provincial focal points to discuss technical questions
- Invitation of the national/provincial participants to international meetings and training workshops





THANK YOU

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