



System of  
Environmental  
Economic  
Accounting

# Outcome of the assessment mission in Guangxi and Guizhou

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# Partnership initiative

- Implementing partners
  - United Nations Statistics Division
  - United Nations Environment Programme
- Sponsor
  - European Union
  - Partnership Instrument
- Five partner countries
  - Brazil, China, India, Mexico, South Africa
- Project durations of 3 years from 2017



# Work streams

- Piloting ecosystem accounts (in each of the 5 partner countries) for selected areas (national and/or regional)
- Developing guidelines and methodology
- Indicators
- Business accounting (sustainability reporting)
- Communication and outreach
- Training and capacity development



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

# Outcome of the 1<sup>st</sup> Inception Meeting

- The project team undertook an initial mission to China in November 2017, including a high-level stakeholder consultation meeting with national partners and a regional training workshop on SEEA EEA.
- Following on the outcome of the mission, the project will work in parallel on the following two workstream to advance the implementation of the System of Environmental-Economic Accounting in China:
  - > Strengthen and support the national compilation of natural resource balance sheet on land, forest and water;
  - > Pilot ecosystem accounting following the SEEA EEA approach in both physical and monetary terms in Guangxi Zhuang Autonomous Region and Guizhou Province

# Objectives of this assessment mission

- To discuss and agree on the programme of work for the project and the way forward
- To assess the policy priority and existing work on ecosystem assessment, address technical issues and discuss the initial programme of work to implement ecosystem accounts in Guangxi and Guiyang using the SEEA EEA approach
- To address methodological issues related to natural resource balance sheet and ecosystem accounting programme

# Assessment mission to Guangxi and Guizhou

- Assessment team
  - > Julian Chow (UNSD)
  - > Kavita Sharma (UN Environment)
  - > Michael Bordt (ESCAP)
  - > Lars Hein (Wageningen University, international consultant)
- Itinerary
  - > Guangxi: 21-23 May ; Guangzhou: 24-25 May
- Agenda
  - > The project team introduces the methodology of compiling ecosystem accounts in physical and monetary terms following the SEEA EEA approach
  - > Technical presentation and discussion on the existing work on ecosystem services assessment by key stakeholders in Guangxi and Guizhou
  - > Discussions on methodological issues and challenges in existing ecosystem service assessment
  - > Discussions on way forward

# Findings

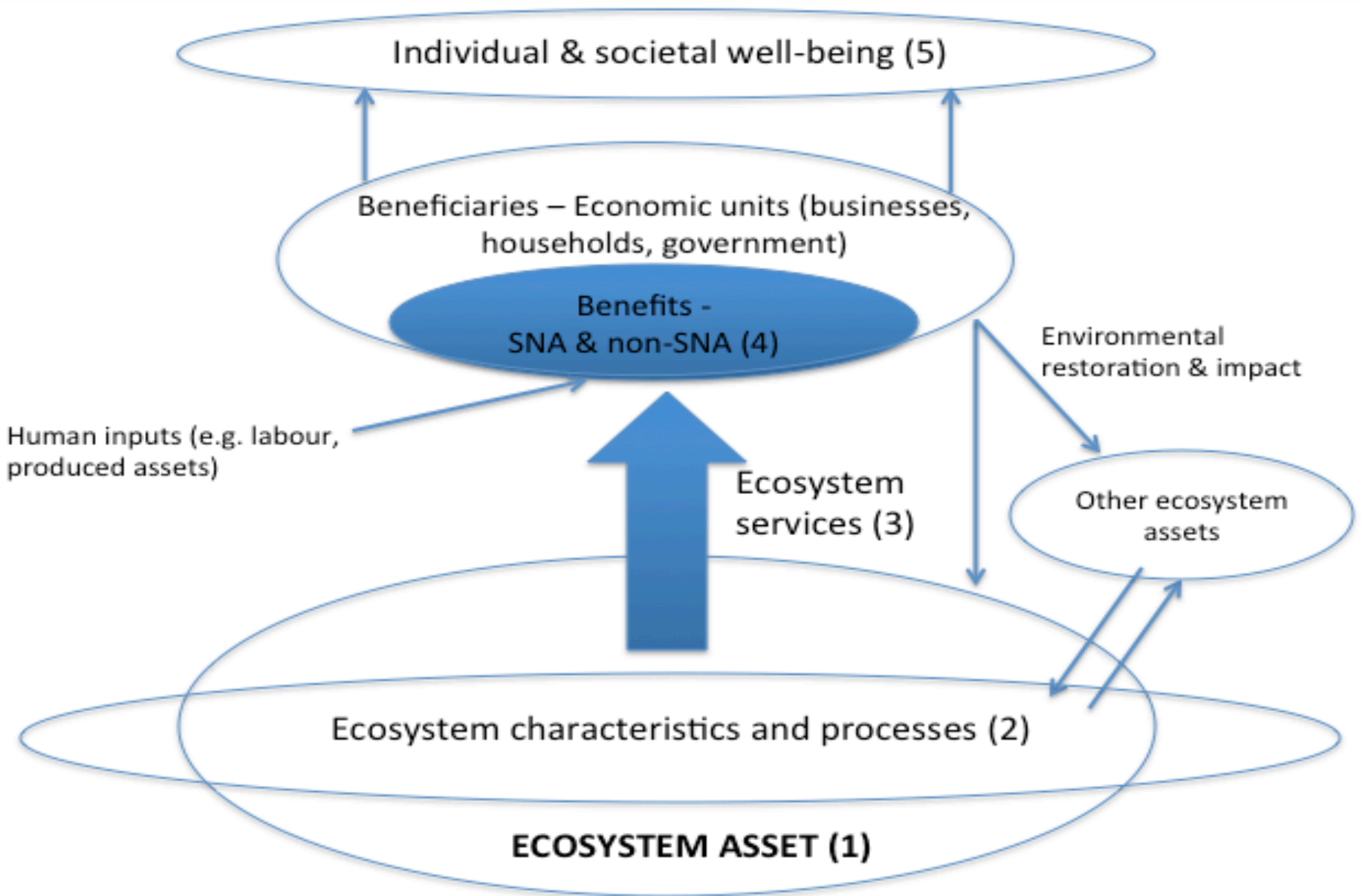
- Strong support from the local government with clear mandate and policy focus
  - > Assessment
  - > Ecological compensation
- Established institutional mechanism and assessment process at the provincial level to move forward the implementation
  - > Provincial bureau of statistics serve as the main coordinating agency
  - > Partnership with different line ministry, research institution, business community
- 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

# Observations

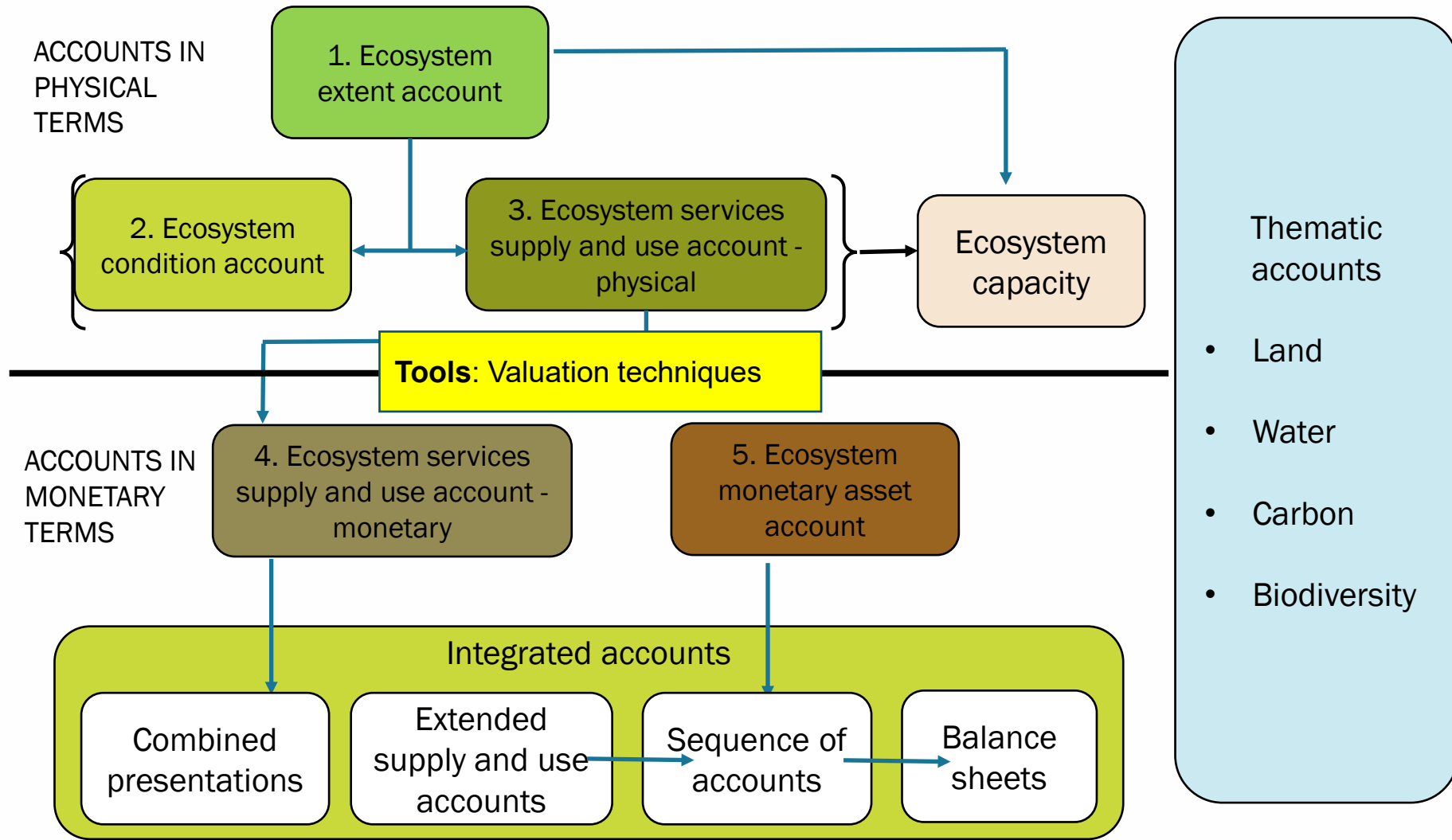
- While existing works provide a good starting point for the project, it is recommended further work to be done to ensure that concepts and methods are aligned with the SEEA EEA framework, for examples:
  - > Distinguish between the concept of ecosystem assets and services
  - > Core accounting framework
  - > The importance of physical accounts
  - > Classification of ecosystem types
  - > Selection of ecosystem services
  - > Valuation methods
    - Ecosystem services
    - Ecosystem assets
  - > Link with the SEEA Central Framework



# Ecosystem Accounting model

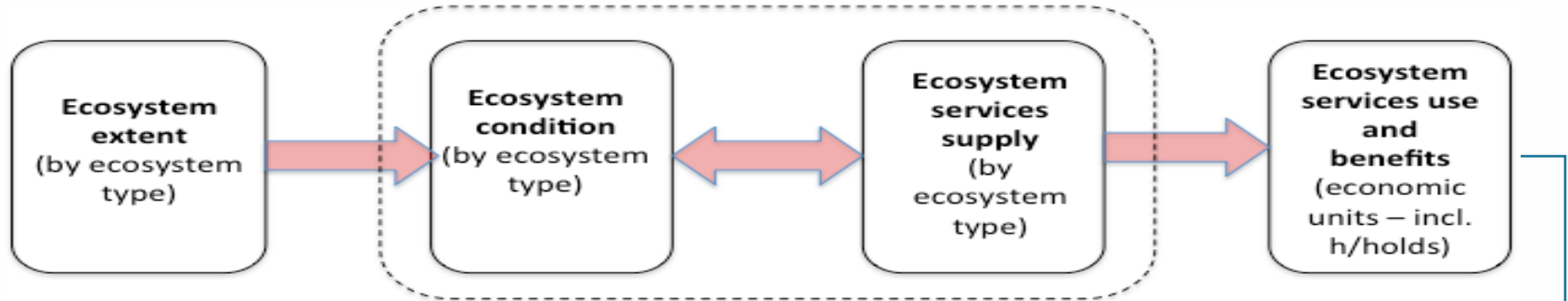


# SEEA-EEA accounts

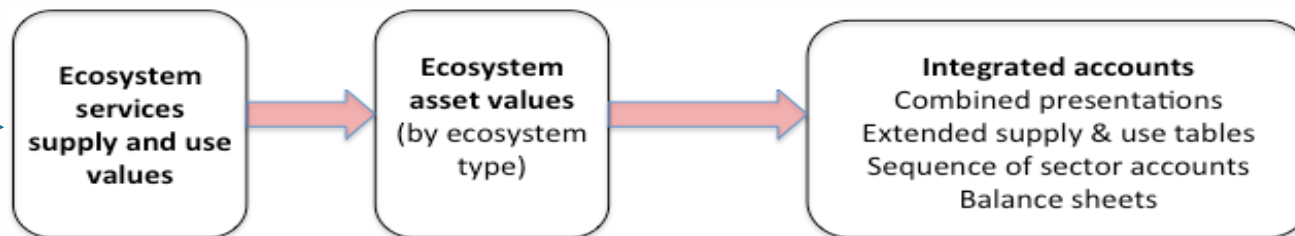


# Broad steps in ecosystem accounting

## a. Physical Accounts



## b. Monetary Accounts



# Next presentations

- Technical suggestions in details (Michael, Lars)
- Way forward (Kavita)

# Guangxi Province

- Forestry: Compare physical changes with SNA revenues
- Ocean and Fisheries: consider using global data
- Housing: consider direct economic benefits (e.g., harvesting from residential gardens and parks)
- Tourism: consider including non-designated tourist sites (e.g., wild areas)

# Guangxi Province

- Well organised process coordinated by NBS
- Consistency between work of departments
- Large amount of data collected and experience gained
- Potential scope for further work
  - > Connect to users (information system?)
  - > Consider mapping ecosystem services
  - > Better define values
    - Now different types of value (gross revenue, replacement cost, TCM: consumer surplus)
    - Values divided into: direct, indirect and 'ecological and environmental' value – (but some values that are in ecological and env. value are generally seen as indirect use values)

# Guangxi Province

- Double counting may be occurring since some supporting services are included such as nutrient capture in agricultural fields
- Detailed remarks will be provided (Offshore shipping, value used for dust)
- Advice can be provided on amenity service (hedonic pricing)

# Guizhou Province

- Land and Resources: Review approach to land cover/land use determination
- Forestry: Consider distinguishing forest types in different locations (e.g., upper/lower catchment area, distance to population, presence of pollutants)
- Forest Survey Planning: Consider including Non-timber Forest Products (NTFP) (fuelwood, berries, ornamental plants, mushrooms, etc.) from SNA or household survey



# Guizhou Province

- Different from Guangshi – SEEA project less far but case study province for the GEP project (see below)
- SEEA considers 2015 and 2016, GEP 2010
- Large degree of consistency in approach, some differences
- Interesting is the Detao big data centre
- Tentative recommendations
  - > In part the same: more precise definition of values
  - > Consider spatial approach and better linking to users

# Guizhou Province

- Positive: data availability (e.g. for erosion control)
- Also work on asset accounting was conducted by Guizhou normal university in the province (however methods were somewhat unclear also due to time pressure, e.g. environmental liabilities were estimated)
- More detailed technical recommendations
  - > Avoid double counting
  - > Do not use market interest rate for inflation correction (but e.g. CPI)
  - > Consider spatial variability (e.g. erosion control performs differently on different slopes)
  - > Examine where work can be aligned with SEEA
    - E.g. organise services by type of service not type of value; use definitions for capacity from SEEA

# GEP

- Impressive amount of work has been done, published in high quality journals
- Large amount of data collected (2000, 2005, 2010)
- Some spatial models were made, and many maps were produced,
- Embedding into policy environment, connected to 5 pillars of eco-civilisation
- Work follows generally Millennium Assessment, in many ways aligned with SEEA
  - > Alignment: types of services, definition of services, stocks versus assets
  - > Not aligned: SEEA: ecosystem services are contributions to benefits, MA: services are benefits; need to better define values

# GEP

- Could be very supportive to SEEA implementation
  - > Very good basis for extent accounts
  - > Good basis for service accounts
  - > At national scale: excellent, perhaps scope to further refine for provincial or county scale

# General recommendations

- Undertake capacity building on SEEA Central Framework
  - > Many concepts, classifications and methods included: land, water, forest, timber, fish, crops...
- Involve planning and finance departments to ensure results are understood and used
- Coordinate detailed common spatial database to
  - > Ensure no gaps and overlaps
  - > Include roads, canals, power lines; small features (e.g., roadside vegetation)
  - > Common definitions and classifications (e.g., land cover)
  - > Share data (e.g., spatial infrastructure) and workload

# General recommendations

- Report on physical and monetary information separately
- Gradually move towards more alignment with SEEA (services, values, capacity)
- Decide which accounts to be produced (Extent, condition, ecosystem services physical and monetary, asset)
- Consider carbon and biodiversity account (water)
- Gradually move towards more sophisticated modelling of water regulating services
- Better explain assumptions underlying accounts
- Coordinate work with GEP project staff (extent account)
- Work, (with partners in other countries?), on how to define different types of values and how to aggregate into overarching indicators for ecological capital
- Consider connecting to users (web tool?, policy briefs?)

# Way forward

1. Written recommendations
2. Technical support (national/ international)
3. Training at the provincial level (spatial, modeling, valuation)
4. Representation of provincial level participants in international meetings
5. Regular meetings/ discussions with provincial focal points

# Way forward

## Developing PoW

- Encourage adoption of SEEA EEA accounting structure
  - > Information collected by CAS (extent, condition) in Guizhou
- Scenario analysis (Guangxi)
- Policy links
- Indicators



# National programme of work

# Objectives

1. Strengthen the capacity of National Bureau of Statistics of China 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 valuation methodology for ecosystem services in Guangxi and Guizhou, and further improve the scientific and rational calculation results
3. Carry out scientific and effective test of the framework of The SEEA 2012 Experiment Ecosystem Accounting, and contribute China's best practices and experience to its subsequent revision.
4. Carry out the test of the related indicators of the ecosystem including the sustainable development goals (SDG) and their relationship with the economy.

# Expected achievement

1. By assisting in solving common problems found in the pilot compilation of natural resources balance sheet led by the National Bureau of Statistics of China by providing substantial input, promote the compilation of land, forest, water and mineral 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 Bureau of Statistics and Guizhou Bureau of Statistics could 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 service, thus providing references for the related policies at the provincial level.

# 2018 work plan

1. From June to December, firstly, with the support and guidance of the project team, the land and forest assets valuation methods will be put forward by the National Bureau of Statistics jointly with the Ministry of Natural Resources and the State Bureau of Forestry and Grassland, and the monetary accounts of land and forest assets at national level for 2015 to 2016 will be compiled on trial basis.

# 2018 work plan

2. Secondly, according to the SEEA EEA and SEEA EEA: Technical Recommendations, combined with the opinions and suggestions of the project team and the technical meeting, Guangxi Bureau of Statistics will amend its *Guidelines for Ecosystem Services Valuation of Guangxi (Revised)* comprehensively and systematically, with focus on the following aspects:
  - a. to clarify the concerned concepts and classifications,
  - b. to fix up the physical amount of different types of ecosystem services,
  - c. to unify and standardize valuation methods of different types of ecosystem services (including the selection of the coefficient values, etc.), and
  - d. to unify and standardize the basic area data used for calculating the different types of ecosystem services value.

# 2018 work plan

3. Thirdly, learning from Guangxi's relevant research achievements and with the guidance of the project team, Guizhou Statistics Bureau will work out the *Guidelines for Ecosystem Services Valuation of Guizhou*.

# 2019 work plan

- Firstly, with the support of the project team, the water and mineral resource assets valuation methodology will be put forward by the National Bureau of Statistics jointly with the Ministry of Natural Resources and the State Bureau of Forestry and Grassland, and the monetary accounts of land and forest resource assets at national level for 2015 and 2016 will be compiled on trial basis.

# 2019 work plan

- Secondly, with the support of the project team, Guangxi and Guizhou will separately compile the ecosystem accounts for 2016 to 2017 based on their respective guidelines for ecosystem services valuation, focusing on measuring the physical and monetary accounts of different types of ecosystem services.
- Thirdly, a national conference will be held in Beijing in November to introduce the progress of the project and to discuss relevant technical issues.



# 2020 work plan

- Firstly, with the support of the project team, Guangxi and Guizhou Statistical Bureau will fix up the standards of ecological compensation by using the ecosystem service valuation data., and come out with their project summary report and submit it to the National Bureau of Statistics of China and the project team.
- Secondly, with the support of the project team, the National Bureau of Statistics of China and the United Nations Statistics Division will draft the project summary report jointly.
- Thirdly, it is expected the results of the project in China will be presented and disseminated at various international meetings and fora to contribute to the methodological research and development and implementation of natural capital accounting at the global level. It is also envisaged the project work could be presented at the Conference of the Parties (COP) 2020 in Beijing.

# Suggestion from the stakeholder discussion

- Positive response expressed by the stakeholder to support the work
- Hire international/national consultant to support the provincial works
- Follow up mission and possible training at the provincial level in early 2019, and identify training needs
- Undertake scenerio analysis in one of the river basin in Guangxi
- Link the accounting information to the indicator initiative
- Send relevant staff to the national statistics office in EU to learn from their experience in the compilation of accounts
- Translation of the SEEA EEA Technical Recommendation



**THANK YOU**

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