International Seminar “Towards Linking Ecosystems and Ecosystem Services to Economic and Human Activity”, United Nations, NY, November 2012

Overview of SEEA Experimental Ecosystem Accounting

Peter Harper
Chair, UNCEEA

Environmental-Economic Accounting has been a journey

A first step towards the integration of sustainability into economic management is the establishment of better measurement of the crucial role of the environment as a source of natural capital and as a sink for by-products generated during the production of man-made capital and other human activities. As sustainable development encompasses social, economic and environmental dimensions, it is also important that national accounting procedures are not restricted to measuring the production of goods and services that are conventionally remunerated. A common framework needs to be developed whereby the contributions made by all sectors and activities of society, that are not included in the conventional national accounts, are included, to the extent consistent with sound theory and practicability, in satellite accounts. A programme to develop national systems of integrated environmental and economic accounting in all countries is proposed.

Chapter 8 Agenda 21 (1992)

Background and history to SEEA

- Bruntland Commission, Rio 1992 – Agenda 21
- SEEA-1993 and SEEA-2003
- UNSC establish UNCEEA (2006) with mandate to revise SEEA-2003 (2007)
- Important role of the London Group (2004) in developing and advancing technical issues
- Separation of revision process into 3 streams
  - Agreed areas, areas of ongoing discussion, applications

Process for SEEA Central Framework

- Identification of 21 key revision issues
  - Technical issues papers through LG and global consultation (2007–2010)
- Draft chapters circulated for global consultation (2011)
- Key role of Bureau of UNCEEA, Editor and Editorial Board
- Adopted as international standard by UNSC in 2012
  - “White cover” version distributed at Rio +20

Process for areas of ongoing discussion

- Identified that all main areas could be related through an ecosystem perspective – primary focus around accounting for degradation
- Topics for discussion developed through UNCEEA meetings and expert group discussion
  - Copenhagen (May '11), London (Dec '11), Melbourne (May '12)
- Topic and issue papers prepared and draft structure developed for SEEA Experimental Ecosystem Accounting
- Editorial Board formed (March '12)
- Ongoing targeted and broad consultation
- No aim to develop a statistical standard

Process for applications

- Much material on applications scattered through SEEA-2003
- Ongoing discussion at UNCEEA and LG about how to organise this type of material
  - UNCEEA working group report in June 2011 led to decisions on audience (bridging compilers and researchers/analysts), broad structure and content
- Editorial Board formed and contributions received largely through 1st half 2012
- Draft submitted to LG meeting Oct 2012 and broader consultation to commence shortly

Why SEEA?

- Policy relevance
  - Environment / economy linkage real & relevant
  - Need to mainstream environmental information
  - Contribution to broader assessment of progress (Stiglitz report etc)
  - Specific policy development and monitoring focus on
    - Energy & water
    - Stocks, degradation and depletion of environmental assets
    - Emissions, waste
    - Environmental protection expenditure, “Green” economy (EGSS), environmental taxes and subsidies

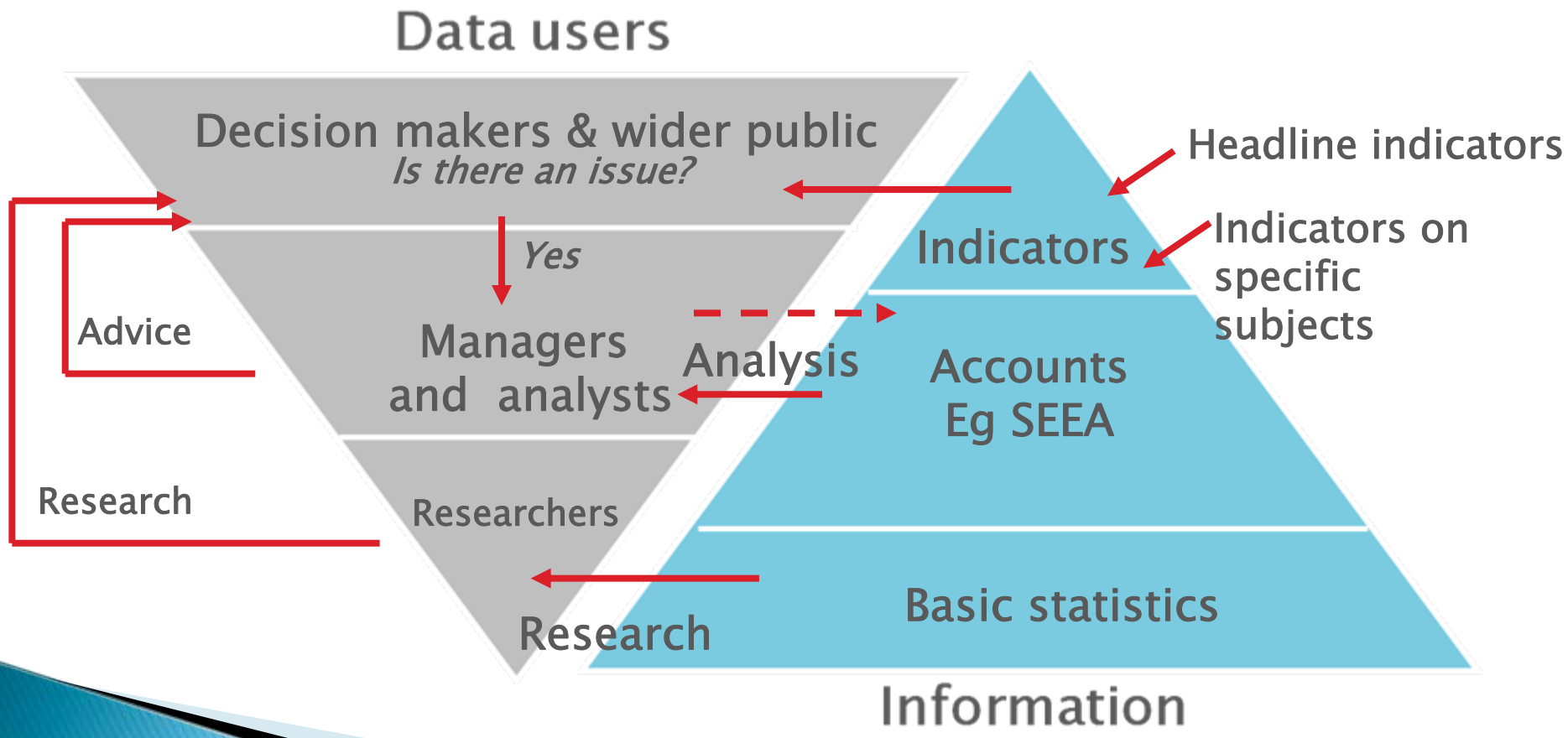
Why SEEA?

- Incompleteness of current economic accounts
  - Don't incorporate many flows between economy and the environment or flows in physical terms
  - Do not account effectively for the cost of the use of natural resources
  - No clear or common definition of environmental activity

Strength of an accounting approach

- Accounting basis from the national economic accounts the System of National Accounts (SNA)
  - Consistent principles (e.g. valuation), units (e.g. enterprises) and classifications (e.g. industry, institutional sector)
- Key strengths
  - Broad coverage but also focus on specific components
  - Integrated – clear links between production, consumption, investment, profits, saving, financial transactions, natural resources, wealth, productivity
  - Consistent time series
  - Measures concepts as distinct from simply reporting statistics
- An accounting approach is well suited for environmental information

Audiences for information…
Indicators and Accounts



What is an accounting approach?

- Accounting is founded on defined relationships between stocks and flows
- The conceptual relationships and associated measurement boundaries are present in physical and monetary terms
- Derivation of aggregates is an outcome of defined relationships and the use of common measurement units
- Within measurement boundaries accounts are comprehensive and internally consistent
- Key boundaries for national accounting and SEEA are the production and asset boundaries
- An accounting approach is not necessarily a monetary approach

Coverage of SEEA Central Framework

- In broad terms covers pressures on the environment from economic activity and the economic responses
  - Flows between economy and the environment
    - Links economic activity and flows of natural inputs and residuals (e.g. flows of water, energy, air emissions, solid waste)
  - Stocks and changes in stocks (incl. depletion) of individual environmental assets
    - Includes mineral and energy resources, land, soil, timber, aquatic and water resources
  - Economic activities related to the environment and relevant transactions
    - Includes environmental protection expenditure, environmental goods and services sector (EGSS) and environmental taxes and subsidies

Coverage and focus of SEEA Experimental Ecosystem Accounting

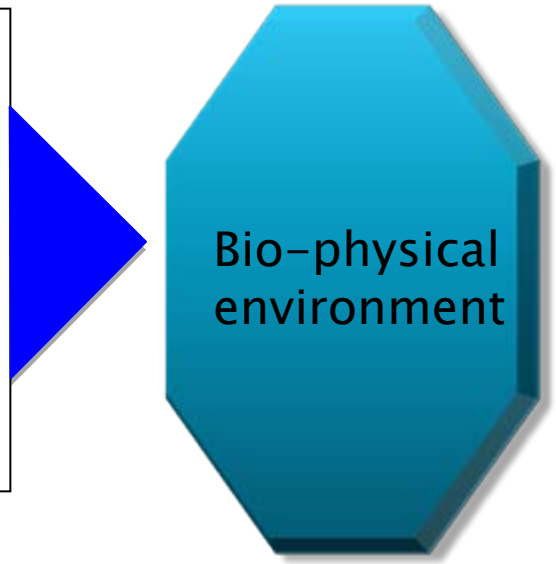
- In broad terms, assessment of environmental impacts of economic and human activity
  - Assessment of ecosystems
  - Measurement of flows of ecosystem services from ecosystems for economic and other human activity
- Complements assessment of environmental pressures from SEEA Central Framework

Spatial focus of ecosystem accounting

- The assessment of ecosystems requires recognition of variation of landscapes within a country
  - Requirement to define spatial units for measurement and accounting purposes
- Land accounts of the SEEA Central Framework provide a strong point of connection

Perspectives on environmental assets

Individual environmental assets
-Timber resources
- Aquatic resources
- Mineral & energy res
- Soil resources
- Land
- Water resources



Ecosystem assets
"Spatial areas containing a combination of biotic and abiotic components and other characteristics that function together"
-excludes mineral & energy resources

These two perspectives on environmental assets are complementary

Ecosystem accounting in physical and monetary terms

- Conceptual accounting model applies in both physical and monetary terms
- Organisation of information in physical terms only may provide important insights especially where monitored over time
- Valuation in monetary terms requires valuation of non-market stocks and flows which is challenging both conceptually and practically

Combination of disciplines

- Conceptual model brings together concepts from ecology, ecological economics, statistics and national accounts
- Not starting from scratch
- Measurement and further research requires ongoing collaboration
  - Clear roles for all communities

Next steps

- Links to SEEA Central Framework to be developed
  - Land accounts (especially land cover and land use)
  - Spatial detail of asset accounts
- Testing of key aspects of SEEA EEA
  - Units model and measures of ecosystem extent
  - Approaches to measuring ecosystem services
  - Indicators of ecosystem condition

Next steps

- Development of partnerships and institutional/governance arrangements – national and international
- Organise available information, develop accreditation and data quality standards
- Progress research agenda
  - Aggregation within and across ecosystems
  - Pricing and valuation methods
  - Integrated accounting including degradation
  - Units of account
  - Classification of ecosystem services
  - Reference condition