The need for integrated statistics

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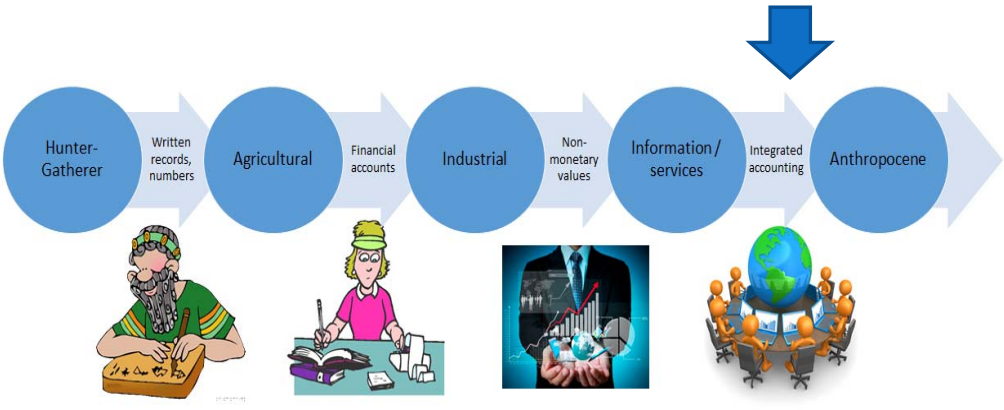
Observation on accounting:

If we managed our economy the way we manage our environment, we'd still be hunter-gatherers.

- Michael Bordt, 2015



Why national statistics offices (NSOs)?

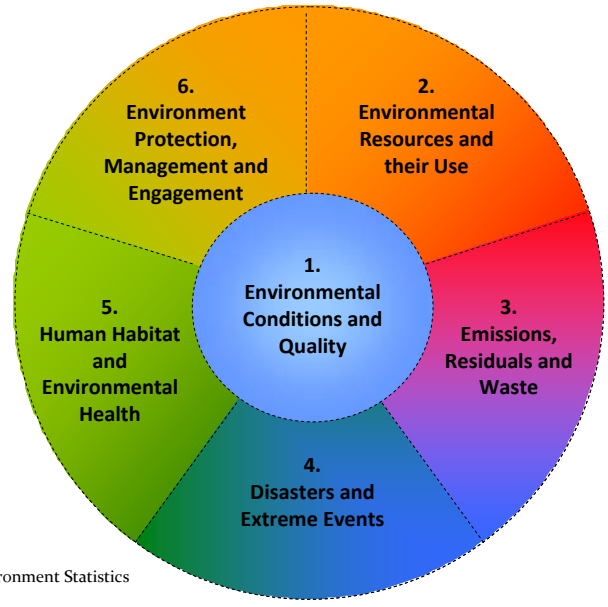
- **Official statistics**
  - Bound by principles of quality, impartiality, confidentiality and relevance
  - Trusted by government, business and civil society
  - See "*Fundamental principles of official statistics*"
- Tools and expertise to collect, organize, analyse, integrate and disseminate **complex data**
- Confidential **data collection processes** (surveys, accounts, administrative data) in place that can be adapted for environment statistics
- Often custodians of the **National Statistical System**

Environment statistics are *interdisciplinary* and *inter-institutional*

Environment statistics are about:

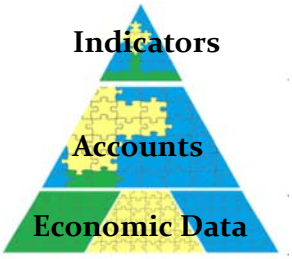
- the **state** of the environment,
- our **dependence** on it,
- our **impact** on it,
- it's **impact** on us (even negative ones), and
- how we **protect** and manage it.

This information comes from many institutions using different methods, concepts and classifications.



FDES: Framework for the Development of Environment Statistics

Some observations



- **Economic** information has:
  - Basis in macro-economic **theory**
  - Coherent, integrated and comprehensive **measurement framework** (System of National Accounts = SNA)
  - Accepted **indicators** (GDP), interpretations (up is good) and functional relationships (e.g., GDP = **C**onsumption + **I**nvestment + **G**overnment spending + (e**X**ports – i**M**ports))
  - Sustainable statistical **infrastructure** for regular measurement and reporting (classifications, methods, standards, prices, methodology, surveys, accounts, indicators)

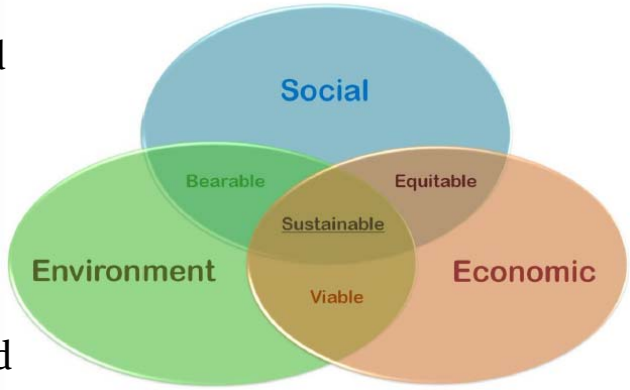
More observations

Environmental information has

- **Many** resource and ecological theories
- Data collected for **specific** purposes (e.g., one policy, one regulation or one indicator)
- Few accepted **indicators**, interpretations or functional relationships
- Little "sustainable" statistical **infrastructure** (many indicators, different classifications & concepts…)

The need for integration

- People need water, food and energy
  - While limiting climate change
- **Viable** energy options may limit **equitable** access to water and food while contributing to **unBearable** climate change
- ***Local optimization doesn't work any more!***



New **statistical tools** enable us to quantify these linkages and understand the trade-offs.

Another example

- **Deputy Minister**: "We need an *indicator* of GHG emissions!"
  - **Staff**: "We'll take fuel sales in $, convert to volume…"
- **Deputy Minister (2 years later)**: "*Where* are the GHGs coming from?"
  - **Staff**: "Ummm, energy production, transportation and heating."
- **Deputy Minister**: "No! For policies to reduce GHGS we need to know *what's driving it*! What industries?
  - **Staff:** "Maybe we need to ask the NSO for data."
- **NSO (1 year later)**: "What do you want?"
  - **Staff**: "What do you have?"
- **NSO**: "We have fuel expenditures by industry. We can make bridge tables to link activities with industries. We'll create an **energy account**!"
  - **Staff (3 years later)**: "Thanks, with the **energy account**, we can allocate GHG emissions to final consumption (households, exports, government and inventory. Wow! *42% of GHG emissions go into creating exports!*"
- **Different Deputy Minister**: "We need an indicator of water use."
  - Staff: "Let's talk to the NSO."

About parts and integration

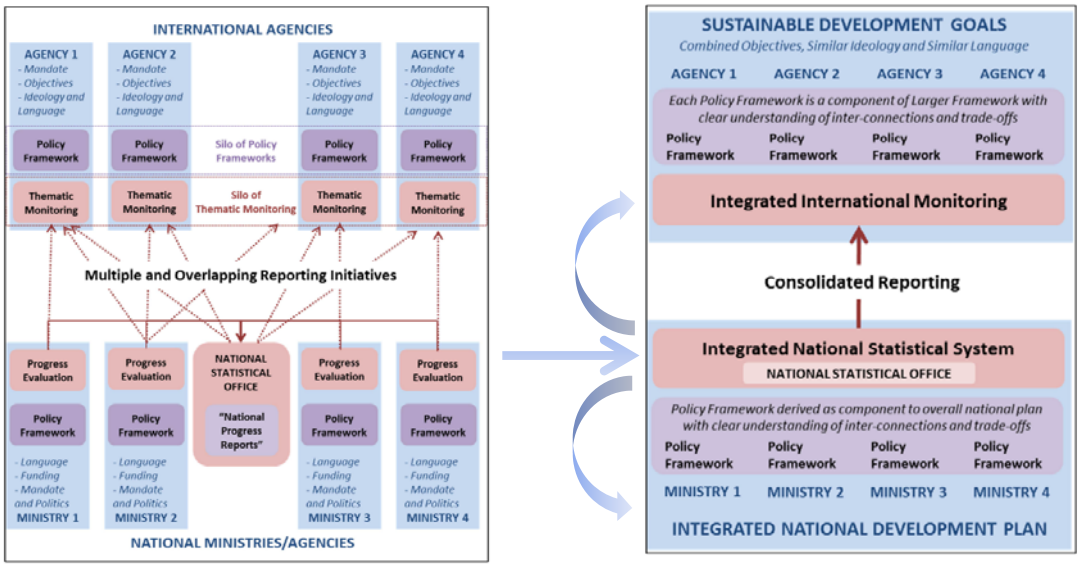
"Both the science of parts and the science of the integration of parts are essential for understanding and action. Those more comfortable in exercising only one of these have the responsibility to understand the other. Otherwise:

- *the science of parts can fall into the trap of providing* ***precise answers to the wrong question*** *and*
- *the science of the integration of parts into providing* ***useless answers to the right question****."*

CS Holling, 1998, *Two Cultures of Ecology*

Transformative agenda for official statistics

Many Data, Many Maps, Many Policies → One Data, One Map, One Policy



Source: Adapted from UNSD

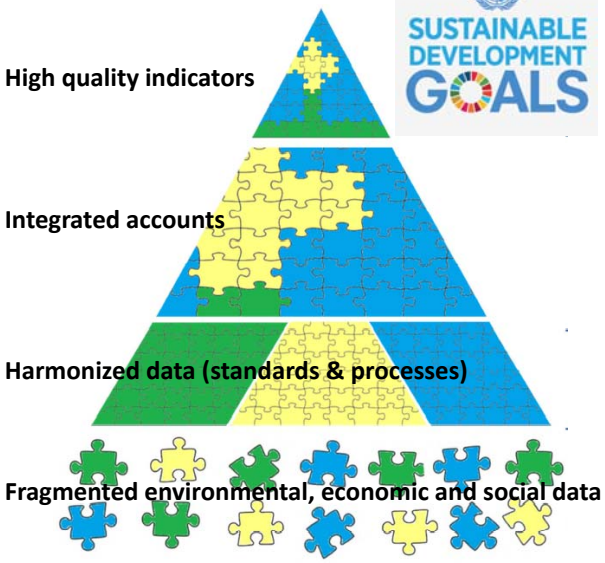
Statistical tools for integration

SEEA: *System of Environmental-Economic Accounting* → Standards for measuring interactions between environment and economy

SNA: *System of National Accounts* →Standards for measuring the economy

FDES: *Framework for the Development of Environmental Statistics* → Core statistics

GSBPM: *Generic Statistical Business Process Model* → Integrated statistical processes
DQAF: *Data Quality Assessment Framework* → Quality guidelines
NSDS: National Strategies for the Development of Statistics
Diagnostic Tool, Inventory Template → Strategic planning and assessment



The SEEA and SNA

Indicators with

Quality

Comparability

(Dis)aggregation

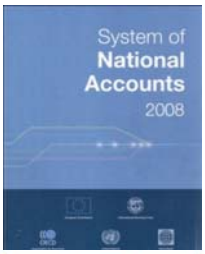
International Statistical Standards

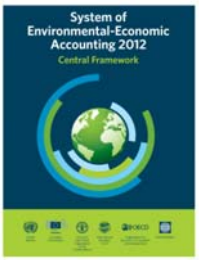
Agreed among NSOs

Aligned definitions and classifications

Comparable statistics from different sectors

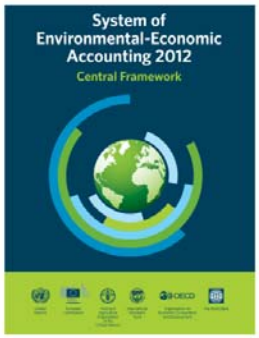
Coherent and comprehensive data sets



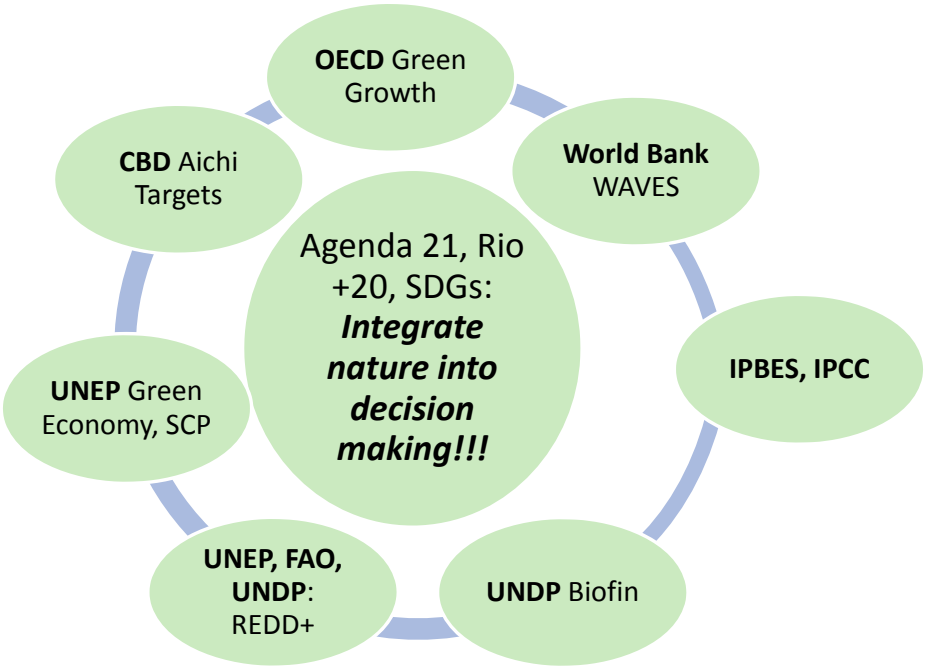


SEEA Features

- A coherent measurement framework linked to SNA:
  - Aligned concepts, classifications and methods
- Based on accounting principles & systems theory:
  - Stock/flow → asset, supply, use
  - Double/quadruple entry → supply = use
  - Time of recording
  - Consistent units of measure & valuation rules
- Flexible and modular
  - Select and adapt components to country needs
  - Don't need to be complete to be useful



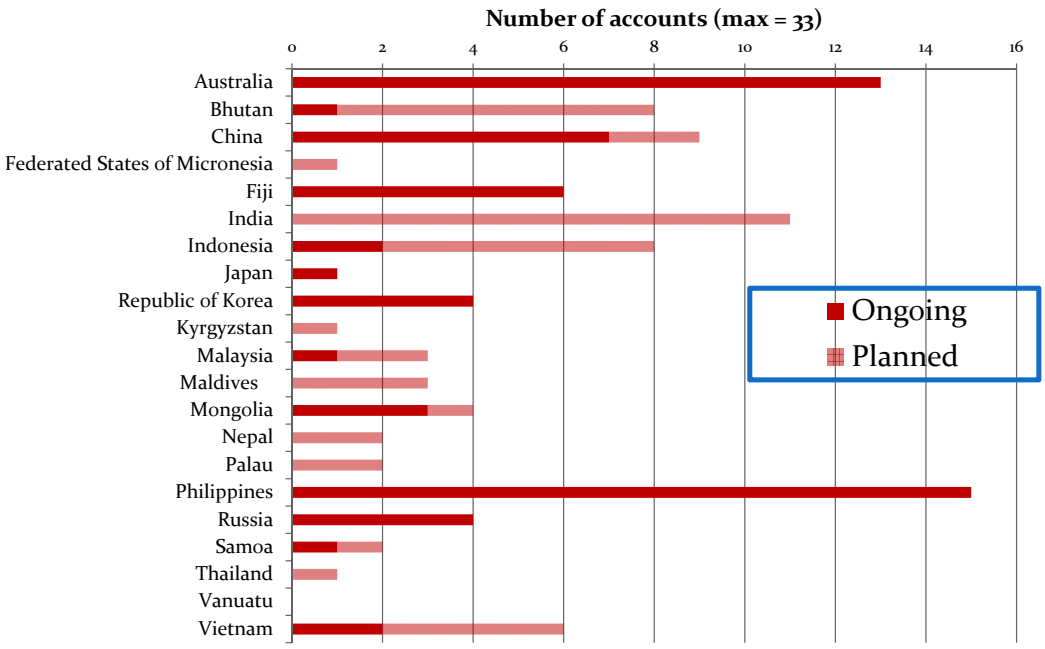
International platforms for integration



The SEEA

- Is accepted as a contributing measurement framework to most international environmental platforms:
  - CBD, SDGs, World Bank WAVES, BioFin, TEEB, REDD+, IPBES, OECD Green Growth, EU Beyond GDP
- Since 1992, has been implemented, in part, by over 90 countries
  - NSOs, natural resource, finance, planning and environment departments
- Supports a sustainable statistical infrastructure to regularly produce relevant accounts and indicators
- Is **NOT**: a model, database or analytical framework

Asia and the Pacific SEEA Progress (preliminary)



Initiatives on environment statistics

Stage	Countries
Requested	Myanmar, Kiribati, Vietnam, Philippines
Planned	Sub-regional assessment/training
Assessment	FSM, Malaysia, Maldives, Palau, Samoa, Vanuatu
Training	Malaysia (with UNSD); Pacific Sub-region
Implementation	Fiji, Nepal
UNSD Pilots	Bhutan, Indonesia, Vietnam

Take home messages

"Good statistics are cheaper than bad decisions."

- Integrated decisions need integrated data
- Environmental statistics are:
  - *Interdisciplinary* and *inter-institutional* therefore **fragmented**
- The SEEA is a very useful measurement framework to "disentangle" environment data

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- World Bank. WAVES: https://www.wavespartnership.org/

Thank you

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