Implementing Environmental Accounting in decision making

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Ecosystem Services and Sustainable Livelihoods


fodder production


slope stability


tourist attraction


recreation


water purification


biodiversity


pollination


fibre production


food production


flood protection


carbon sequestration


beauty


recreation


stabilising micro-climate


game reserve


shelter for life stock

Sourced from: MEA, 2007

Benefits from Forest Ecosystem Services

Provisioning

Goods produced or provided by ecosystems:

- **food**
- **fresh water**
- **fuel wood**
- **fiber**
- **biochemicals**
- **genetic resources**
- **timber**

Regulating

Benefits obtained from regulation of ecosystem processes:

- **climate regulation**
- **disease control**
- **flood control**
- **detoxification**

Cultural

Non-material benefits obtained from ecosystems:

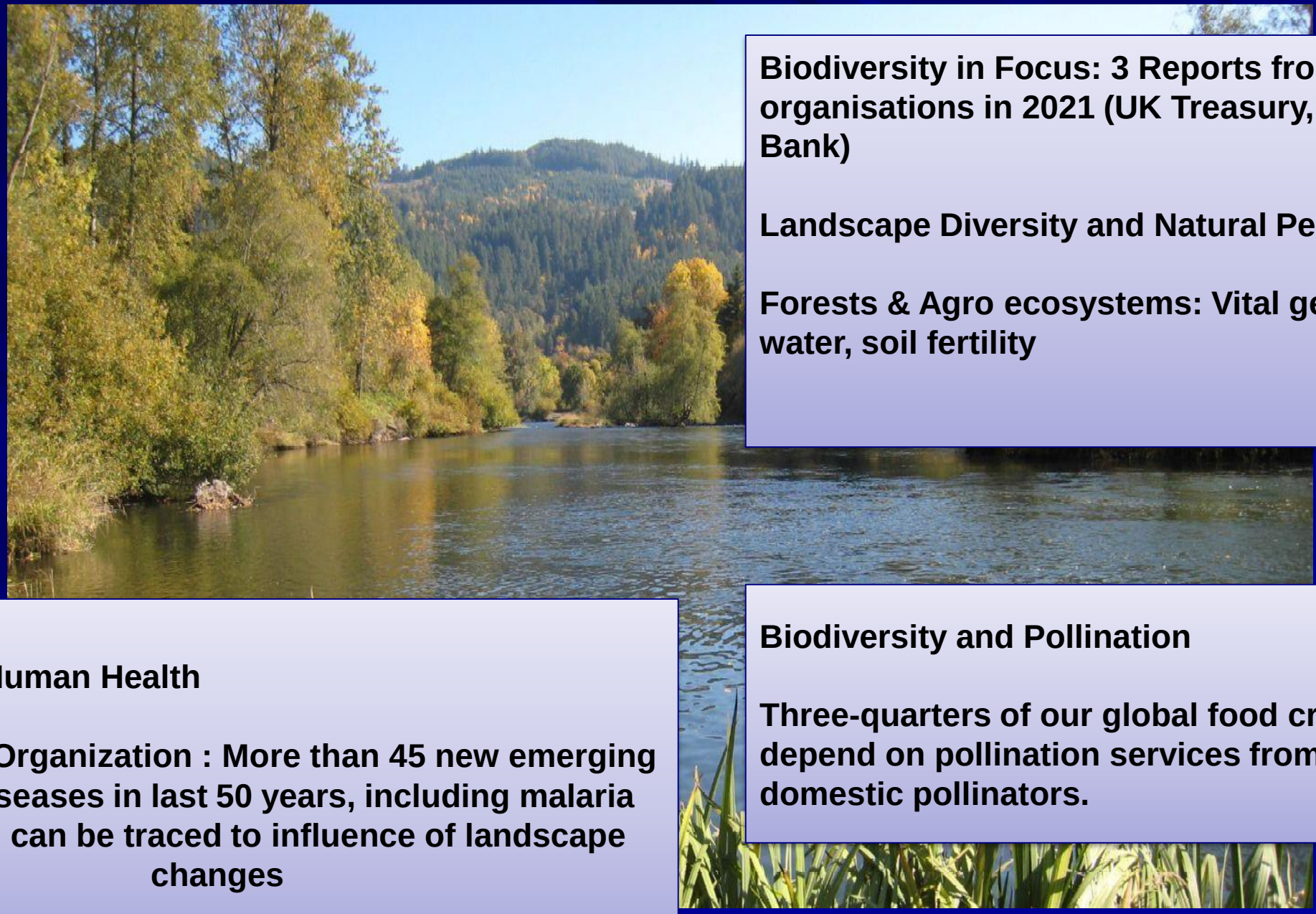
- **spiritual**
- **recreational**
- **aesthetic**
- **inspirational**
- **educational**
- **communal**
- **symbolic**

Supporting

Services necessary for the production of all other ecosystem services

- **Biodiversity**
- **Soil formation**
- **Nutrient cycling**
- **Primary production**

Sourced from: MEA, 2007



Biodiversity in Focus: 3 Reports from Financial organisations in 2021 (UK Treasury, OECD, World Bank)

Landscape Diversity and Natural Pest Control

Forests & Agro ecosystems: Vital genetic material, water, soil fertility

Ecology and Human Health

World Health Organization : More than 45 new emerging infectious diseases in last 50 years, including malaria and dengue, can be traced to influence of landscape changes

Biodiversity and Pollination

Three-quarters of our global food crops depend on pollination services from wild and domestic pollinators.

Profound thinking on the subject over the decades, methodological developments:

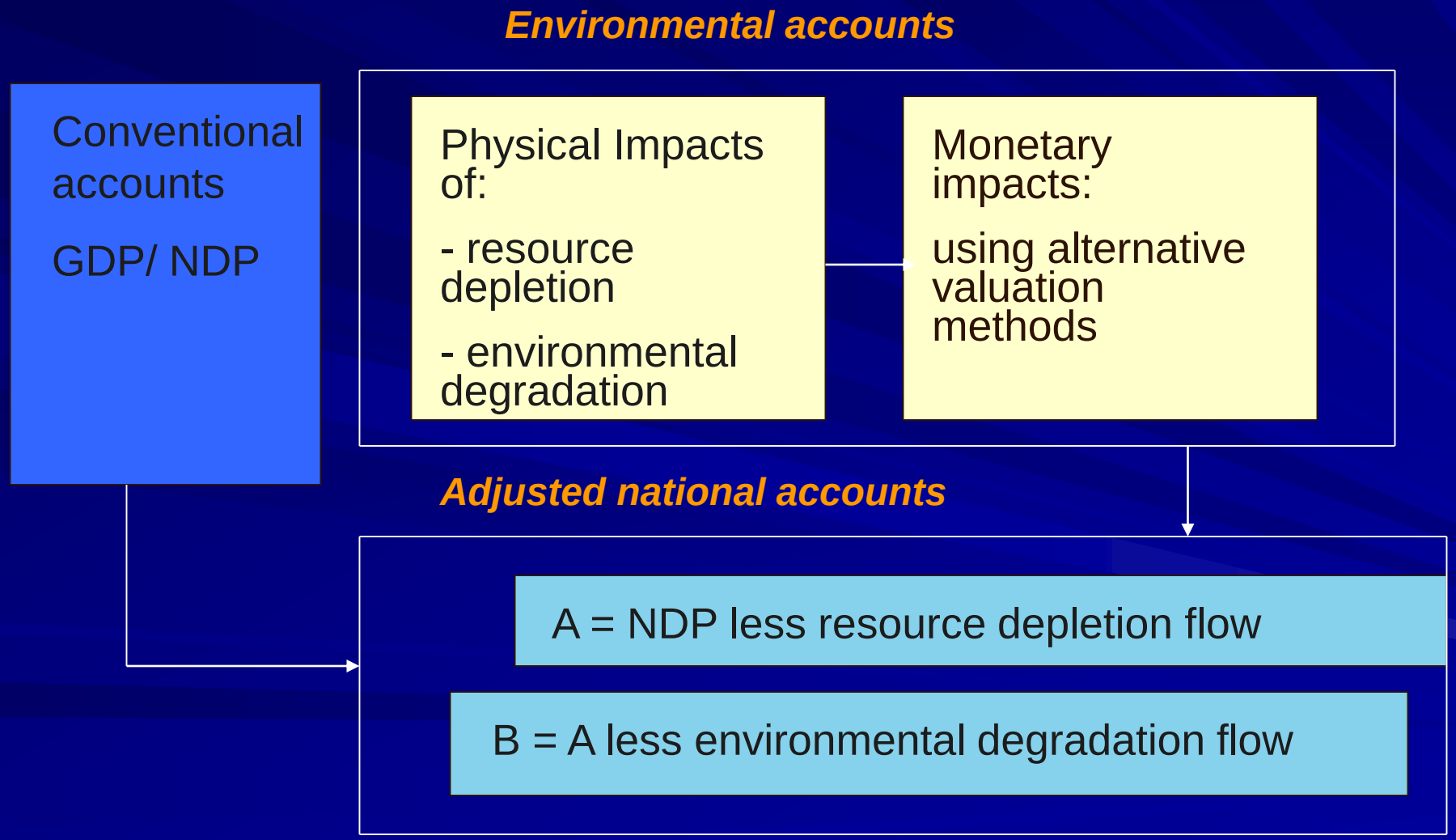
Strong/weak substitutability, Green GDP, Genuine Savings, Inclusive wealth, natural capital, satellite accounts, ….

Multi-Country Initiatives – World Bank led (WAVES),UN (NCAVES)

SEEA – CF, EA

India – a leading example in the region : SEEA CF; SEEA EA; Stage III (2021)

Draws on principles of environmental economics and national income accounting: A simplified illustration



Natural Resource Accounting

- Complements and expands the SNA to show inter-relations between economy and environment
  - extends the SNA asset boundary to include environmental assets
  - places financial values on non-economic assets
  - provides physical as well as financial measures
- 4 Main Types of Accounts under the UN's SEEA Framework

Asset accounts (physical and monetary)	Flow accounts (physical and monetary)	Expenditure accounts	Macroeconomic aggregate account

- Range of valuation methods used

Institutionalizing SEEA

SNA to SEEA: System for Environmental-Economic Accounts (SEEA), CF as adopted in 2012 By UN

Stocks/ flows/ and changes for each accounting year (depletion/accumulation/depreciation/ appreciation); aggregation; integration in macroeconomic aggregates

Physical and Monetary terms

Data and information requirements: Quantification

First 2 stages are:

(a) supply and use tables : flows of natural inputs, products and residuals;

(b) asset accounts for individual environmental assets

Accounting for Ecosystem Assets - Ecosystem Services

- Interdisciplinary approach
- Special methods and tools for assessing ES
- Multiple stakeholders
- Multiplicity of Values
- Trade-offs and Complementarities
- Monetary / Non-Monetary

International Experiences: Some examples

- Australia – asset accounts for water, also land, etc.
- Canada – Natural resource asset accounts
- Columbia – asset accounts for oil, gas, coal
- France – regularly published forest asset and now subsoil asset accounts
- Germany – material and energy flow accounts
- Mexico – soil, water, land, energy.
- Netherlands – environmental physical flow accounts (supported by EU for adoption of the framework by other countries)
- Norway –one of the earliest; Sweden; Namibia; Philippines
- WAVES initiative of the UN

Applications: Guatemala

- Forest accounts
- Real economic contribution of forests was 2.5% of GDP against 1% recorded in national accounts
- Policy application: Insights from resource accounts contributed to- new timber licensing rules, new Forest Incentives Law, National Strategy for Production and Use of Fuelwood, forestry section of National Development Plan, 2032

Applications: Botswana

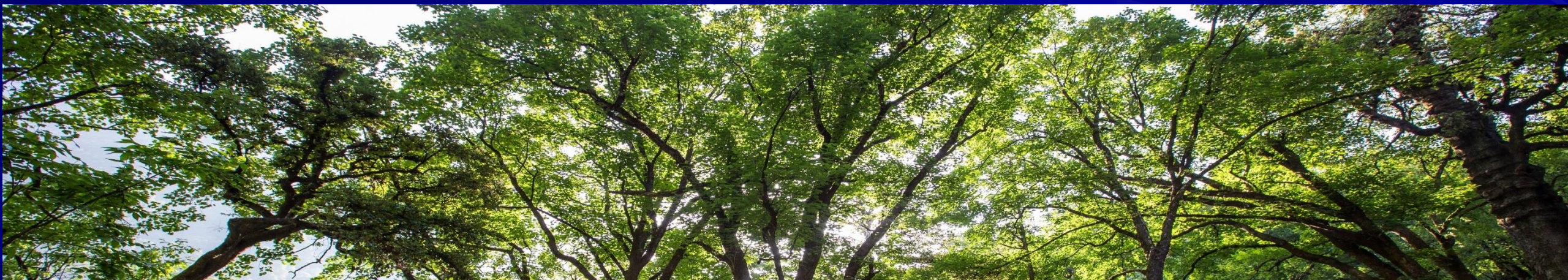
- Botswana is characterized as water scarce with uncertain rainfall and droughts
- Agriculture and mining sectors were highest water users
- Both agriculture and mining had very low value added per cubic meter; while services like communication, construction, tourism, transport , finance had highest value added
- Policy Application: Water accounts contribute to many policies- National Water Master Plan, 2013 Integrated Water Resources Management Plan, Master Plan for Wastewater and Sanitation, Vision 2036, National Development Plan (2017–22).
  - Water accounts also helps in designing water rates and water allocations

Challenges

- Lack of systematic knowledge base on natural capital: ecosystem services and their values.
- Gaps in consolidated and coherent database system ranging from National to local government level
- Adoption of methodology for national/sub-national relevance
- Capacity constraints in producing desired data and linking with policy and planning process
- Required level of statistical infrastructure
- Data quality and monitoring, updation of data and desired formats
- Studies carried out by different national and international organizations and universities to be communicated effectively with policy makers
- Gap in scenario planning and assessment of impacts from sectoral investments

Strengthening

- Co-ordination and collaboration with concerned ministries/line departments/ stakeholders who can contribute relevant data is required.
- Greater advocacy for these accounts and the ways in which these can contribute is important.
- Capacity building on appropriate data collection, methodology and tools adoption through experts for local/regional applicability.
- Resources for implementing the accounts are required.
- Global scale support: funds, capacity building, and development of global and regionally relevant tools will be important, in complementing and supporting national capacities and resources for enhanced implementation.
- Create an institutional framework for multistakeholder approach to implementation: A hub/platform for exchange of knowledge and experience that will ensure NRA relevant evidence generated are communicated effectively with policy makers within the country. (Current city groups, UN Expert Committee for international)



Implementation

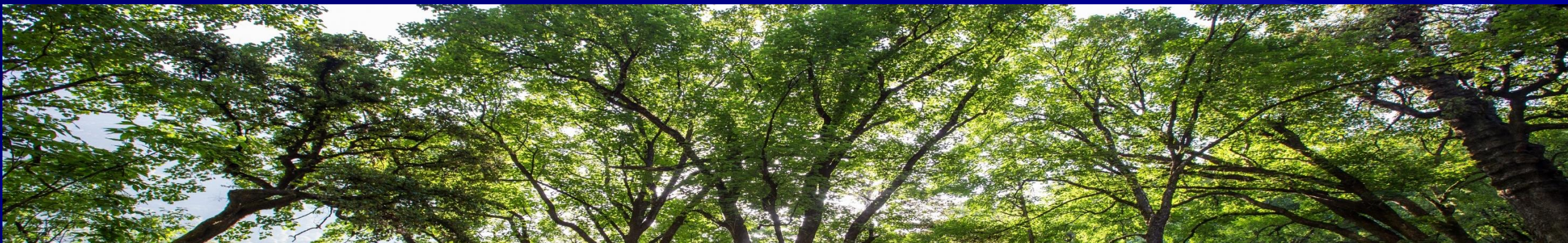
- Integrated MIS data reporting system in selected sectors and geographies.
- Building capacities of government agencies to develop the data and establish MIS
- Training for enhanced technical capacity to collect, compile and implement the data needs.
- Bring in the experts: Data collection has to be harmonised with the concepts and definitions of SEEA

Advocate for mobilisation of resources for smart data, using advanced technology.

- Leverage private sector, in keeping with big companies and their ESG commitments for enhanced mobilisation of resources including technical capacities. (CSR?)
- Recognise environmental data as a priority for substantiating and supporting achievements for international reporting (e.g. SDG goals 11 to 15; UNCCD, CBD….)

Raise awareness and strengthen communications

- among and within potential users and producers (agencies) of environmental data;
- on the co-benefits to economic systems from healthy nature.



Enhancement

- Expanding the Coverage: Identification of key sectors and selected geographies where already substantial understanding is available in India - minerals, forestry, river/ water.
- Starting with Asset accounts, in parallel valuation/monestisation even if its partial to begin with.
- Adoption of methodology to national/sub-national context for applicability
- Strengthen knowledge base on valuation of Ecosystem Services: case studies
- Compiled inventory of available information and gap identification; Mapping of environmental stocks and flows – significant progress being made at national level

- Use global resources as maybe relevant (GEF, has included this as a priority)