



Science and Policy in TEEB: Key Messages

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Rijksoverheid

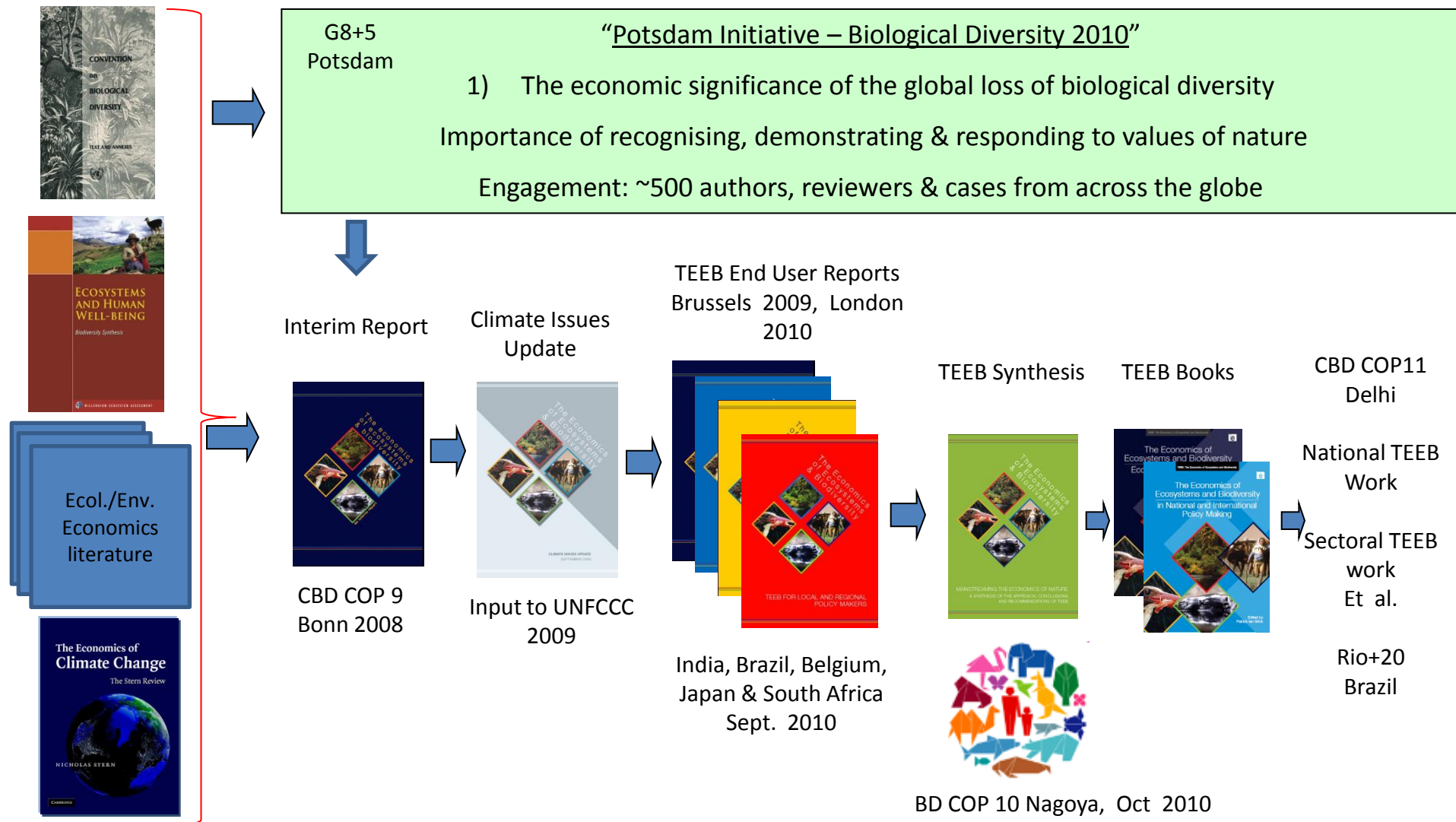


MINISTRY OF FOREIGN AFFAIRS





TEEB's Genesis, Aims and progress





The Economics of Ecosystems and Biodiversity

Ecological and Economic Foundations

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Ecological and Economic Foundations

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Pushpam Kumar



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Framework: Multiple benefits from ecosystems

Provisioning services

- Food, fibre and fuel
- Water provision
- Genetic resources

Regulating Services

- Climate /climate change regulation
- Water and waste purification
- Air purification
- Erosion control
- Natural hazards mitigation
- Pollination
- Biological control

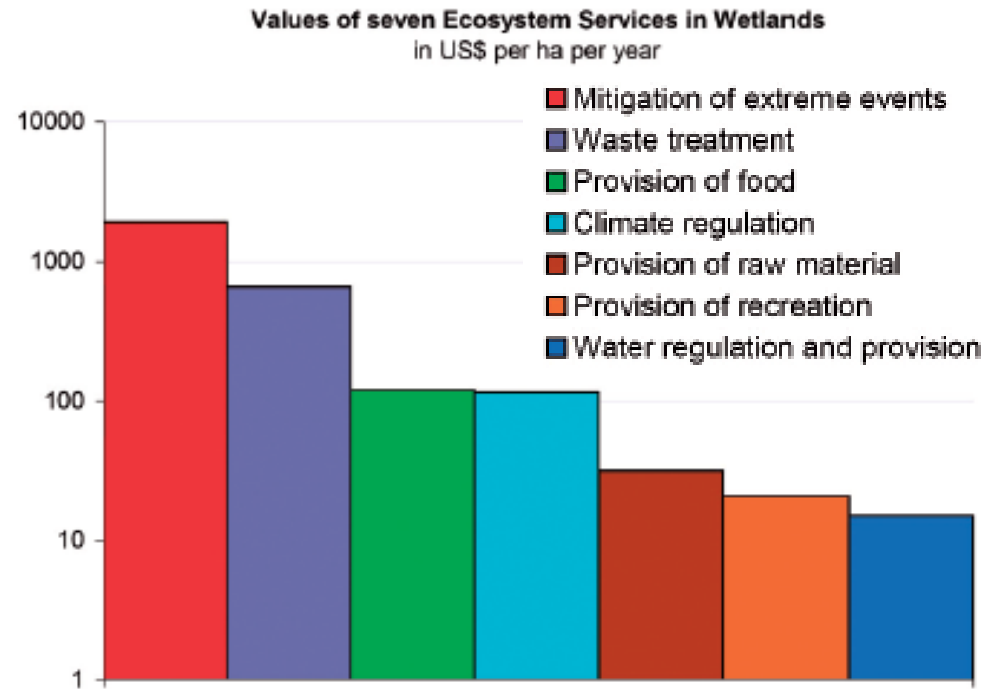
Cultural Services

- Aesthetics, Landscape value, recreation and tourism
- Cultural values and inspirational services

Supporting Services

- Soil formation

Many services from the same resource



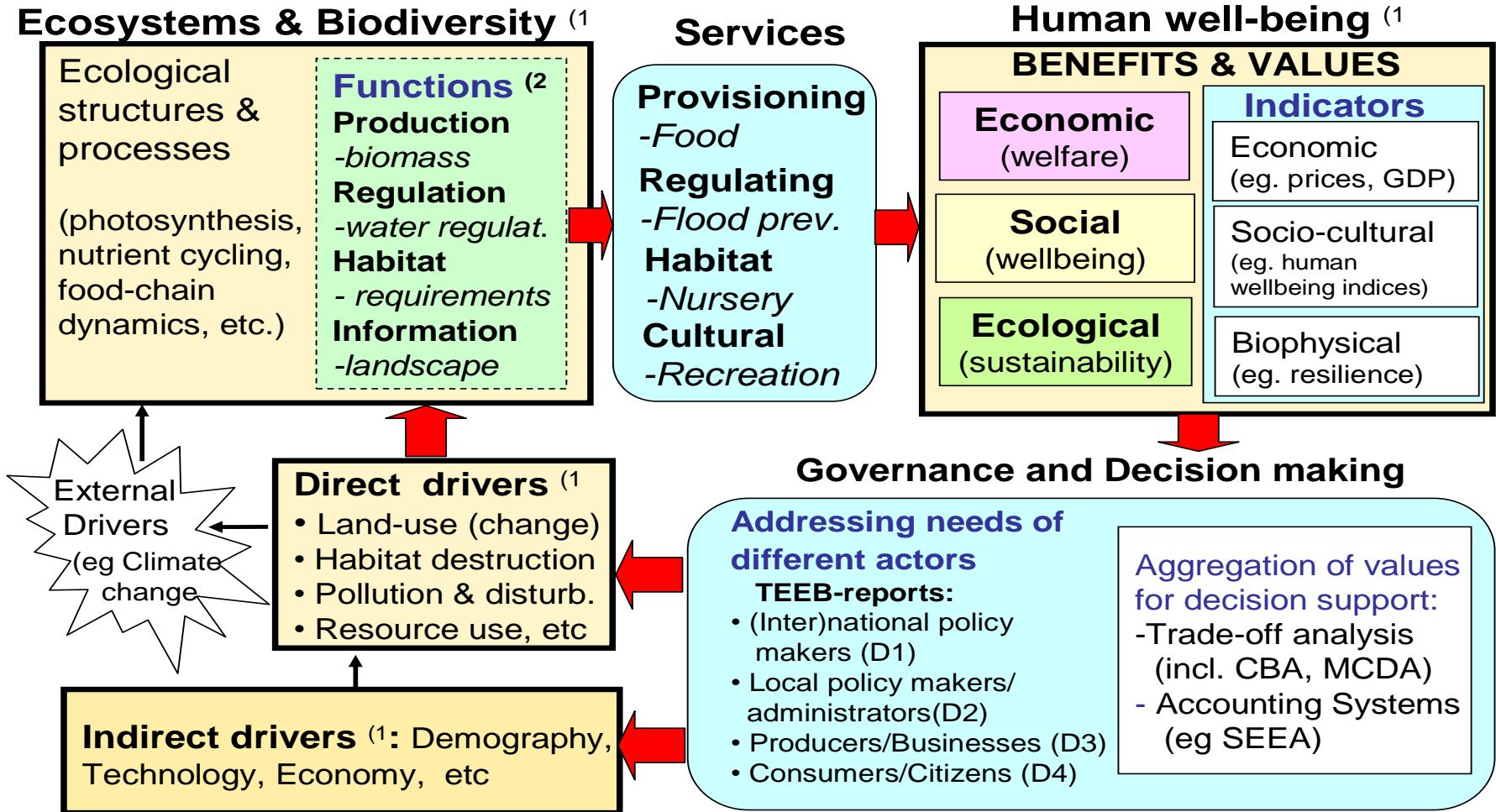
Source: Emerton and Kekulandala 2003

Important to appreciate the whole set of eco-system services & take into account in decisions

Not only after they have been lost and oft costly substitutes needed



Framework Revisited

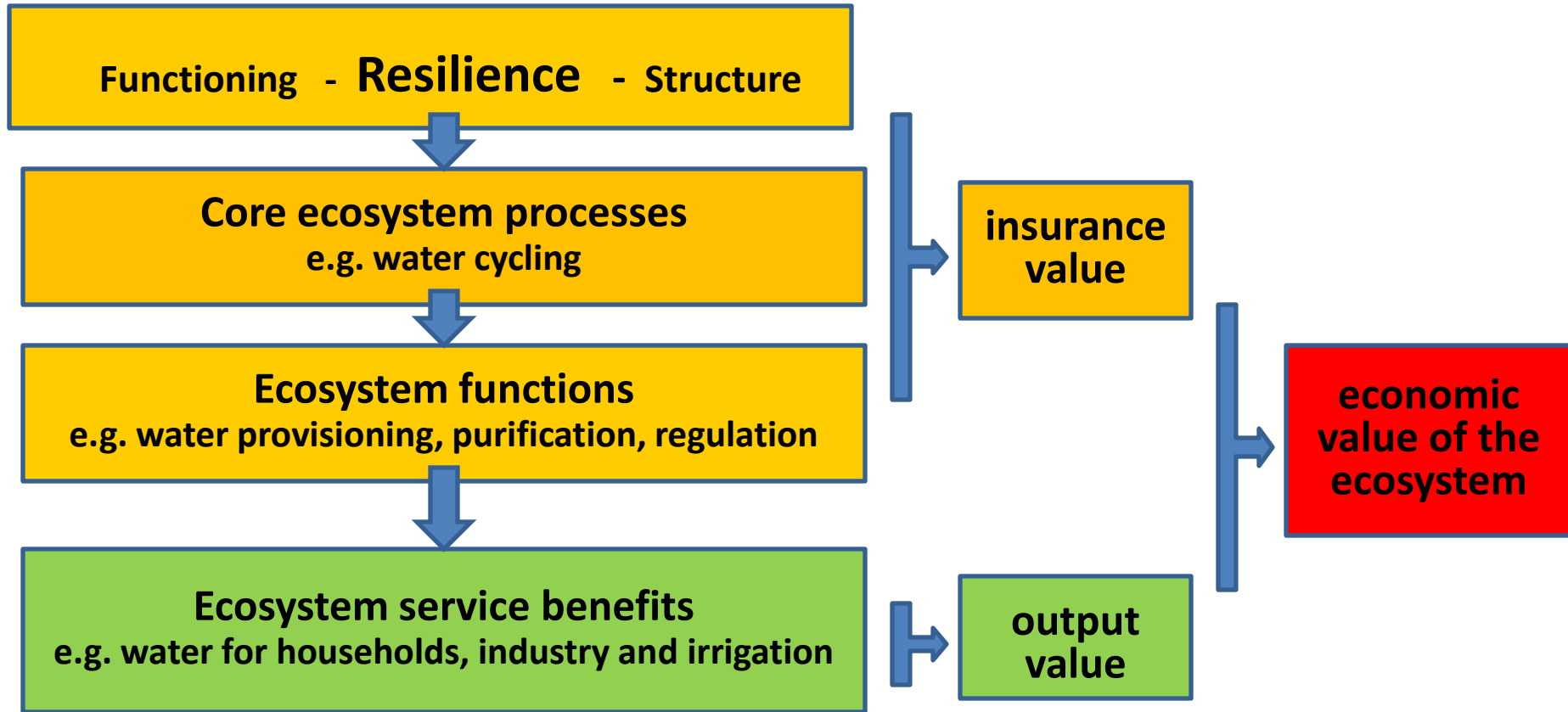


1) The four bold-lined, brown filled boxes coincide with the overall MA-Framework

2) subset of ecosystem processes & components that is directly involved in providing the service



2: Ecosystems and Valuation: Perspective



Insurance and output value as part of the economic value of the ecosystem



Lessons and Recommended Actions

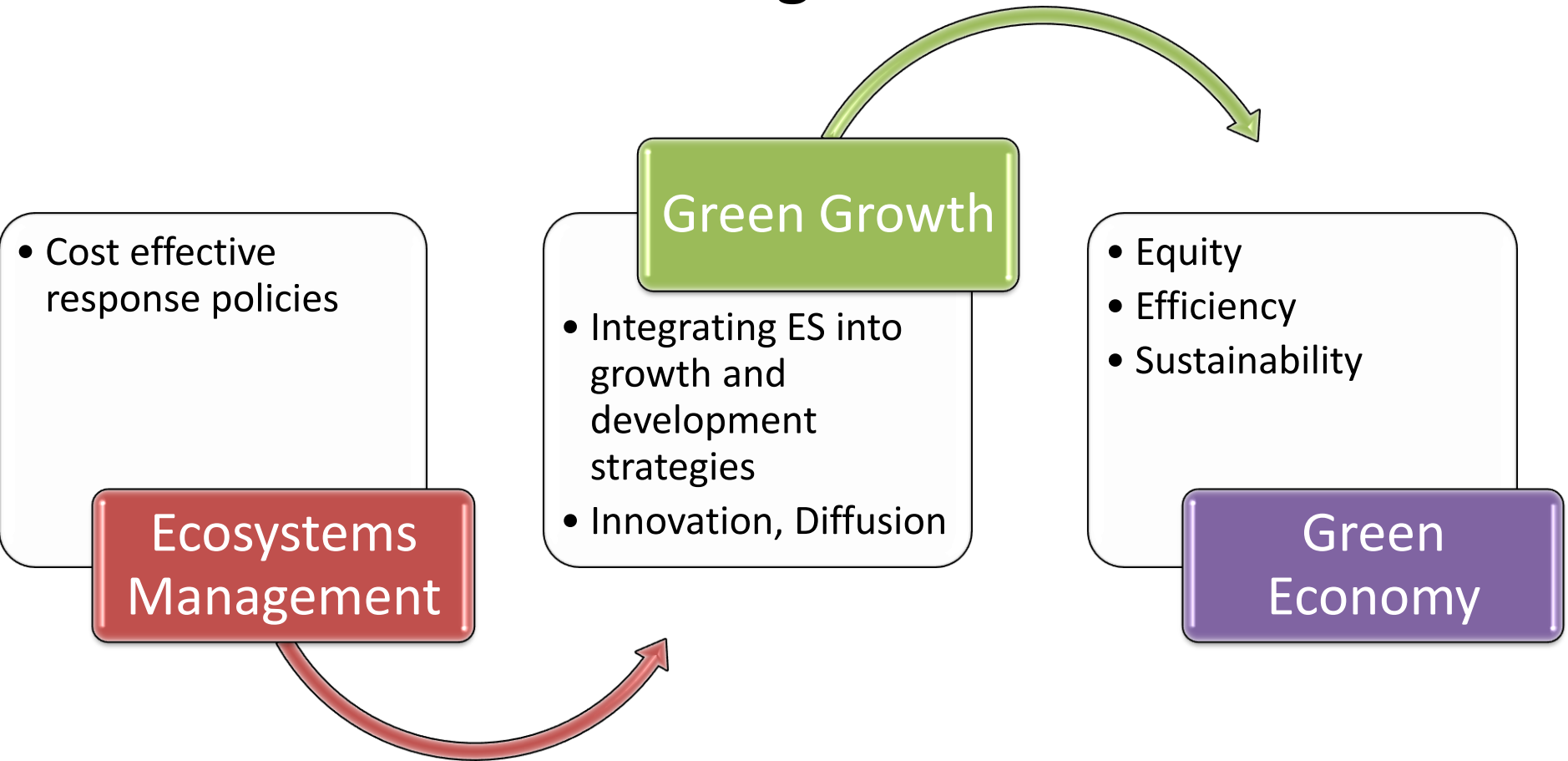
1. Indicators like GDP are distorted and does not reflect the changes in the level of welfare
2. Growth accounting does not incorporate ecosystem services leading to erroneous sense of gain / losses
3. Drivers like Trade and Investment impacting the Ecosystems have far reaching impact for society
4. Missing Links of Sectoral Policies causing unsustainable policies



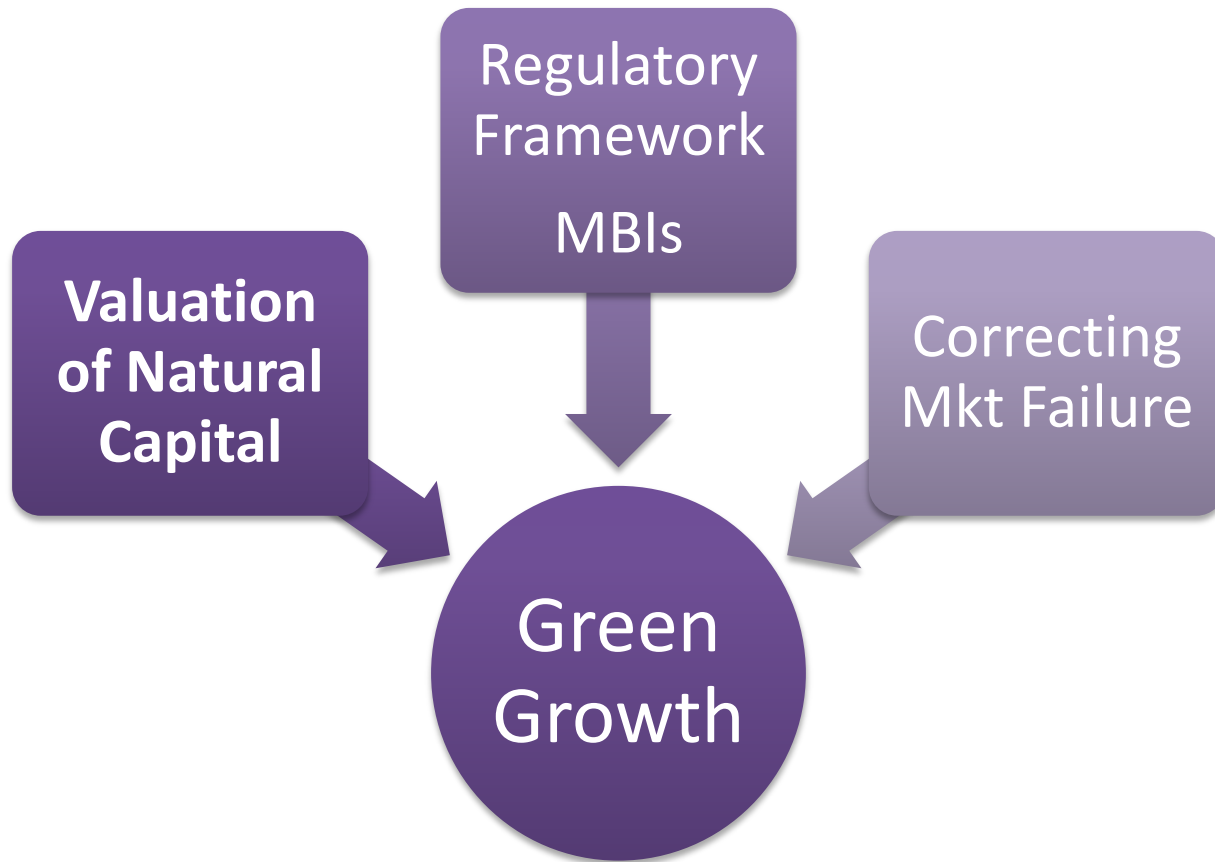
“I believe that the great part of miseries of mankind are brought upon them by false estimates they have made of the value of things.”

Benjamin Franklin, 1706-1790

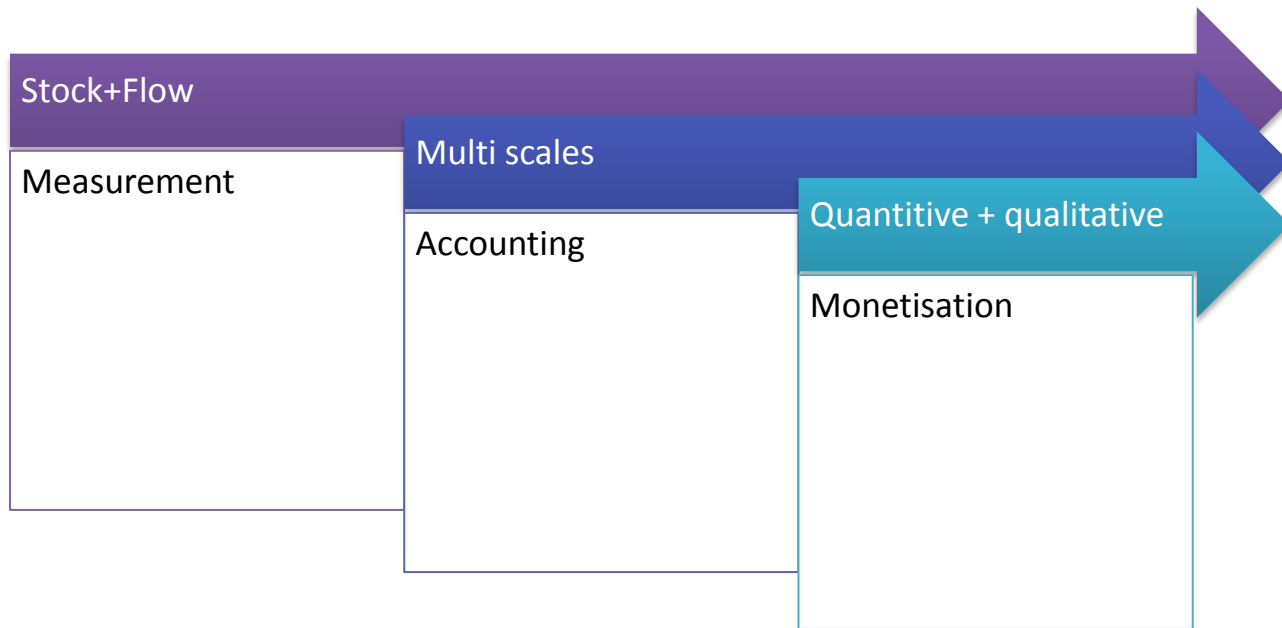
Overarching framework



Green Growth and Green Economy



Tools and Methodologies



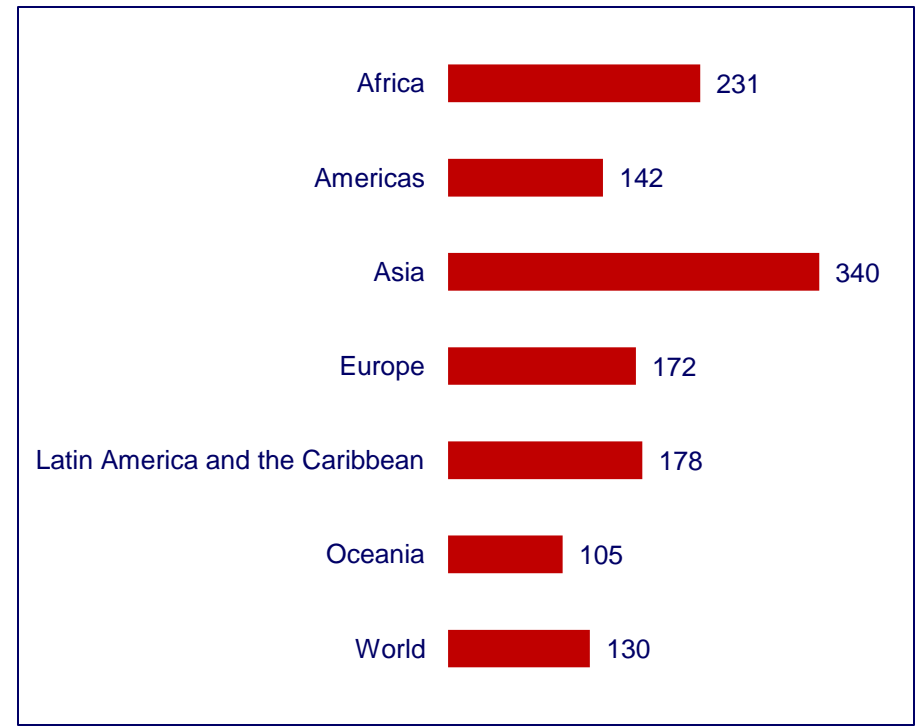
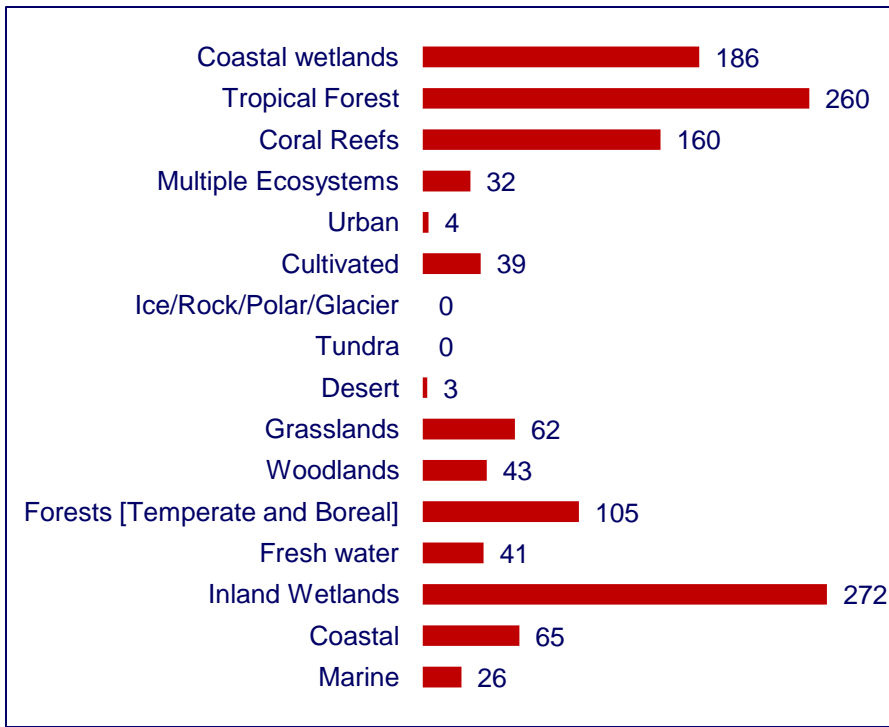


TEEB for Policy Makers – Available Solutions to respond to the value of nature

- **Rewarding benefits**
 - Payments for ecosystem services (PES)
 - REDD+
 - Tax incentives, and tax transfers
 - Markets and certification/labelling
 - Green public procurement (GPP)
- **Avoiding damage**
 - Pricing – full cost recovery, pollution charges, liability
 - Regulation: standards, bans
- **Protecting assets**
 - Spatial planning
 - Protected areas – designation, management
- **Investing in natural capital**
 - Restoration, new investments

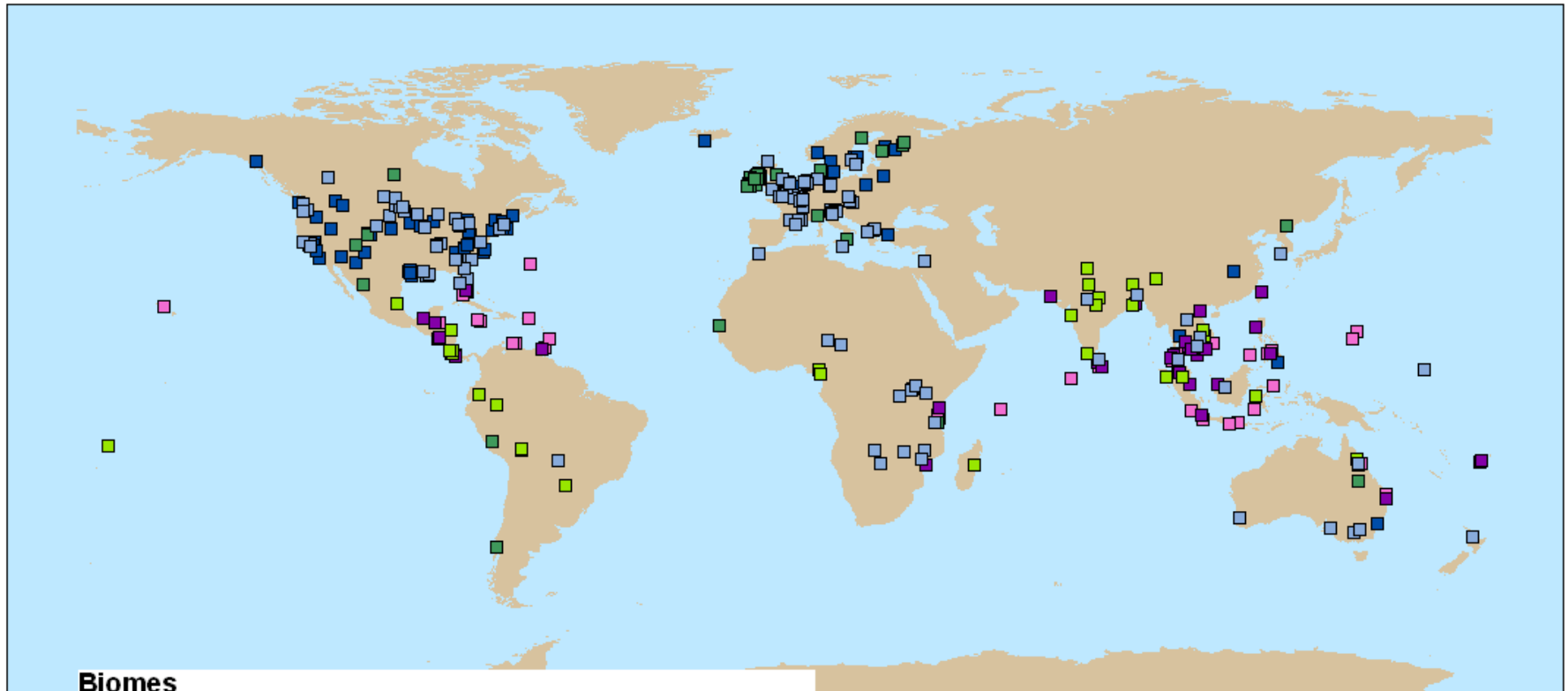


Gathering Evidences on Estimates of ES Values



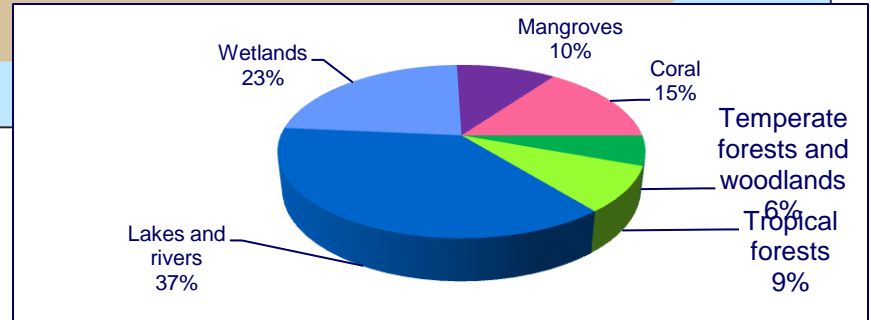


The Economics of Ecosystems & Biodiversity



Biomes

■ Temperate forest and woodlands	■ Lakes and rivers	■ Mangroves
■ Tropical forest	■ Wetlands	■ Coral





Key Findings from Future Projections

- Annual land use change benefits 2050 = **\$161 bn**
 - Central and South America = \$63.2 bn
 - Russia and Central Asia = -\$6.2 bn
- Aggregate 2000 to 2050 = **\$2964 bn** at 1% discount rate
- Cost 2000 to 2050 = **\$568 bn**
- B/C ratio = **5.2**
- Carbon benefits = **\$6343 bn**
- B/C ratio including carbon = **16.4**



Investment in ecological infrastructure: multiple benefits

- Afforestation: carbon store+ reduced risk of soil erosion & landslides
- Wetlands and forests and reduced risk of flooding impacts
- Mangroves and coastal erosion and natural hazards
- Restore Forests, lakes and wetlands to address water scarcity
- Coral reefs as fish nurseries for fisheries productivity / food security
- PAs & connectivity to facilitate resilience of ecosystems and species

Potential for lower cost adaption to climate change and policy synergies

Adaptation to climate change will receive hundreds of US\$ billions in coming years/decades.

Critically important that this be cost-effective.

Support for identifying where natural capital solutions are appropriate & invest.



Summary

- ❖ **Making Nature's Values Visible:** improved evidence base for improved governance, awareness for action – government, business, people
- ❖ **Measuring better to manage better:** from indicators to accounts
- ❖ **Changing the incentives:** taxes, charges, subsidy reform, markets
- ❖ **Protected areas:** biodiversity riches that can offer value for money
- ❖ **Ecological infrastructure and benefits:** climate change and beyond
- ❖ **Natural capital and poverty reduction:** investment for synergies
- ❖ **Mainstream the economics of nature:** across sectors, across policies, seek synergies across disciplines.