The Economics of Ecosystems & Biodiversity

WELCOME

Mainstreaming the values of water and wetlands into decision-making

TEEB Professional training workshop
Bali, Indonesia
Saturday 31 May, 09:00 – 17:30

Organized by:
Dustin Miller (Dustin.MILLER@unep.org)
UNEP TEEB Office
Geneva, Switzerland

Meet the team

- Learning facilitator: **Mathew Parr**
  (IUCN Netherlands)

- Trainers: **Daniela Russi**
  (Institute for European Environmental Policy - IEEP)
  Johannes Förster
  (Helmholtz Centre for Environmental Research – UFZ)

- Workshop organizer: **Dustin Miller**
  (UNEP TEEB Office)

Objectives of TEEB for Water and Wetlands Training

- **To generate better understanding of the values of water and wetland ecosystem services**

- **To learn from experts how the values of ecosystem service related to water and wetlands can lead to better informed and fairer decision making**

- **To learn practical recommendations of how to include these values in decision making**

- **To share experiences in managing water and wetlands**

Icebreaker

Getting to know each other:

- Your name, organisation and function (name on card)
- What you want to learn to today?
- Choose one person to report major learning objectives back to the group
- 10 mins

Training Programme (1)

MODULE 1.   **TEEB and its role in water and wetlands**
The TEEB initiative: from analysis to action   *Dustin Miller (UNEP TEEB Office)*
The 'TEEB for Water and Wetlands' report   *Daniela Russi (IEEP)*
The TEEB for Country Studies Guidance Manual   *Johannes Förster (UFZ)*
Work Groups
Break (15m)

Objectives of Module 1

- To explain **origins, objectives** and **key products** of TEEB

- To present the objectives and contents of the **TEEB Water & Wetlands** report

- To introduce the **TEEB Country Study Guidance Manual** and its relevance to the training

- To introduce **key terminology** and concepts

- To **practice** the use of some of these concepts

Training Programme (2)

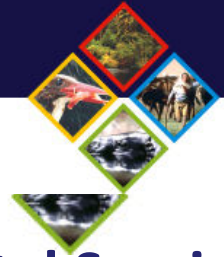| MODULE 2. |
| --- |
| **Improving measurement and assessment for better governance and wise use** |
| Knowledge check and objectives

Mathew Parr (IUCN NL) |
| Indicators and methodologies

Daniela Russi (IEEP) |
| Work Groups |
| Lunch (1h) |

Objectives of Module 2

- To **explain why it is important to measure** the ES provided by wetlands

- To **present the main categories of indicators** that are available to measure and value wetlands' ES , in order to contribute to their wise management

- To explain the **uses, advantages and limitation of monetary valuation**

- To give **some examples** to illustrate these points

- To **practice** the choice of methodologies

Training Programme (3)

MODULE 3.
Integrating the value of water and wetlands into decision-making
Knowledge check and objectives *Mathew Parr (IUCN NL)*
The RUPES Programme: Way Besai case study *Caroline Duque Pinon (ICRAF)*
Spotlight on SE Asia: Roundtable *Guest speakers from Malaysia, Nepal, Philippines and Thailand*
Policy instruments to wisely manage wetlands *Daniela Russi (IEEP)*
Work groups
Break (15m)

Objectives of Module 3

- To introduce the **Rural Upland Payment for Environmental Service** programme

- To discuss how the **ES approach** can contribute to the wise use of wetlands in Southeast Asia

- To present the **most important policy tools** that can be used to promote a wise use of wetlands

- To discuss **advantages and disadvantages** of each of them

- To give **some examples** to illustrate how the policy tools are used to improve wetland management

- To practice the use of some of these policy tools

Training Programme (4)

MODULE 4.
Wrapping up
Case study results and discussion *Johannes Förster (UFZ)*
Recap and objective check *Mathew Parr (IUCN NL)*
Evaluations

MODULE 1.

TEEB and its role in water and wetlands

Objectives of Module 1

- To explain **origins, objectives** and **key products** of TEEB

- To present the objectives and contents of the **TEEB Water & Wetlands** report

- To introduce the **TEEB Country Study Guidance Manual** and its relevance to the training

- To introduce **key terminology** and concepts

- To **practice** the use of some of these concepts

The Economics of Ecosystems & Biodiversity

The TEEB initiative: from analysis to action

Dustin Miller

Dustin.MILLER@unep.org

UNEP TEEB Office

Geneva, Switzerland

www.teebweb.org

"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."

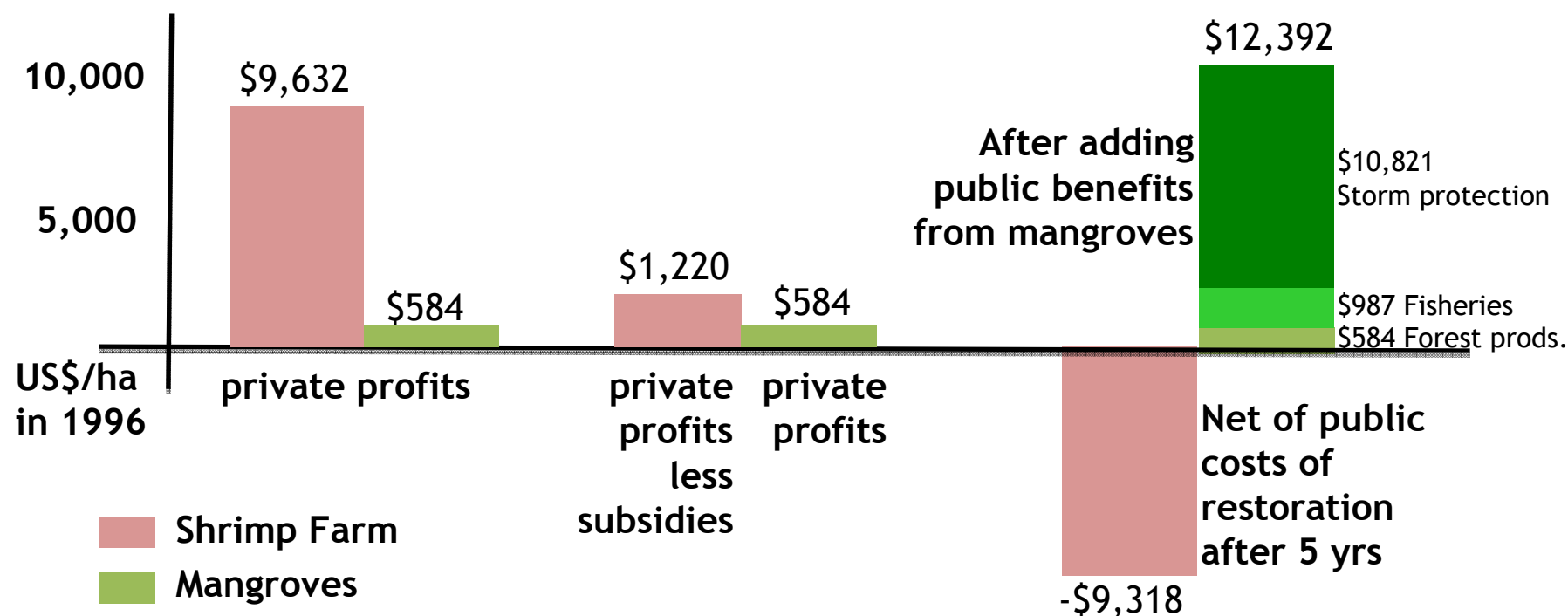Benjamin Franklin, 1706-1790

Economic Invisibility of Nature
Case study: Shrimp farms in South Thailand

10,000

5,000

US$/ha in 1996

$9,632 — private profits (Shrimp Farm)

$584 — Mangroves

$1,220 — private profits less subsidies (Shrimp Farm)

$584 — private profits (Mangroves)

-$9,318 — Net of public costs of restoration after 5 yrs

$12,392 — After adding public benefits from mangroves

$10,821 Storm protection

$987 Fisheries

$584 Forest prods.

Legend:
- Shrimp Farm
- Mangroves

Data from Barbier (2007)

All values in NPV over 9 yrs (1996-2004) at 10% discount rate
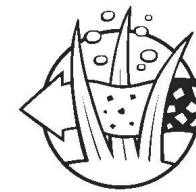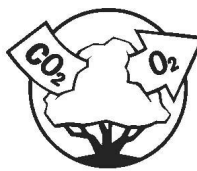
TEEB's perspective on Valuation...

1. **Recognizing value**: a feature of all human societies and communities... needs no economic models, no 'cost-benefit analysis'

2. **Demonstrating value**: in economic terms, to support decision making, but without any financial payments
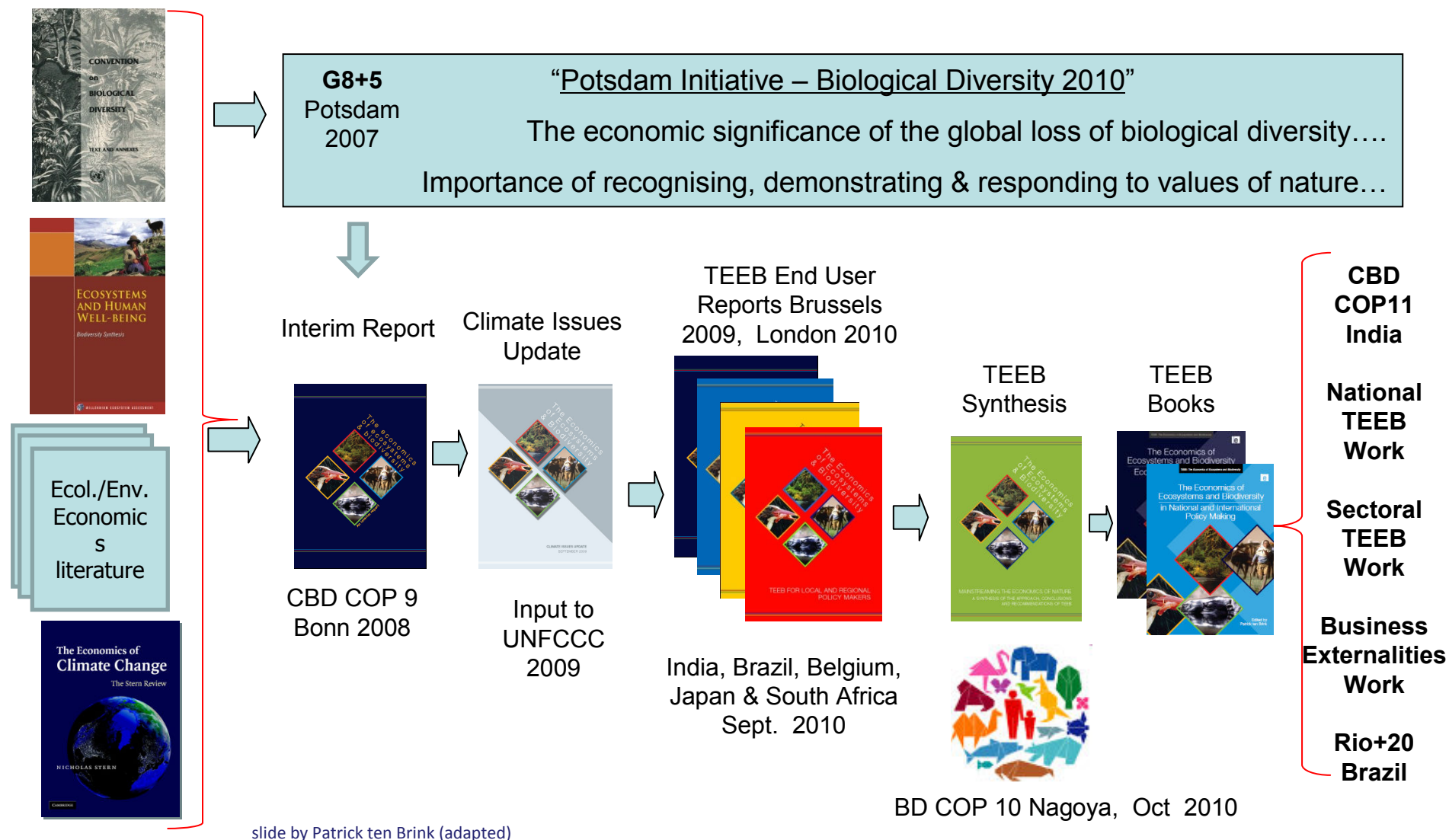
3. **Capturing value**: through mechanisms to incorporate the economic values of ecosystem services, with financial payments

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# TEEB (2008-2010) Genesis, Aims, and Progress

G8+5
Potsdam
2007

"Potsdam Initiative – Biological Diversity 2010"

The economic significance of the global loss of biological diversity….

Importance of recognising, demonstrating & responding to values of nature…

Ecol./Env. Economics literature

Interim Report

Climate Issues Update

TEEB End User Reports Brussels 2009, London 2010

TEEB Synthesis

TEEB Books

CBD COP11 India

National TEEB Work

Sectoral TEEB Work

Business Externalities Work

Rio+20 Brazil

CBD COP 9 Bonn 2008

Input to UNFCCC 2009

India, Brazil, Belgium, Japan & South Africa Sept. 2010

BD COP 10 Nagoya, Oct 2010

slide by Patrick ten Brink (adapted)

TEEB implementation

- **National TEEB studies:** e.g. Brazil, Georgia, Germany, India, Mexico, Netherlands, Norway, Portugal, Thailand, UK, Saint Lucia, South Africa, Sweden

- **Sub-national TEEB studies:** Polish TEEB for Cities, TEEB Flanders, TEEB Reykjavík

- **Regional TEEB studies:** Heart of Borneo, Nordic TEEB, Southeast Asia

- **TEEB for Business:** NL TEEB for Business, TEEB Germany for Business, TEEB for Business Brazil
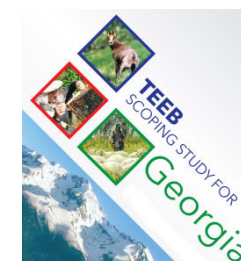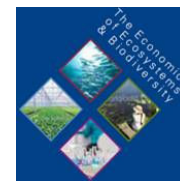
EC-funded TEEB National Implementation project:
Guidance Manual and Training

- **Target audience:** person(s) in charge of conducting a TEEB Country Study

- Developed in cooperation with UFZ, GIZ, IEEP, UNEP WCMC and others

- **GM provides:**

  - Introduction to TEEB and how it could be followed up by countries

  - Practical information on scoping to identify (a) which problems need to be addressed, (b) how to set up the process

  - A step by step guidance on how to apply the TEEB approach (6 step approach)

  - Guidance on how to communicate results and implement policy recommendations

  - Examples from other TEEB country studies (e.g. ToRs, stakeholder involvement, challenges) as well as list of references and links to other useful guidance

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TEEB for Business Coalition

- Inspired by TEEB for Business and Enterprise, 2012
- Launched in Singapore on 6th November 2012.
- Recently Launched "Natural Capital at Risk : The top 100 externalities of Business" on April 15th, 2013

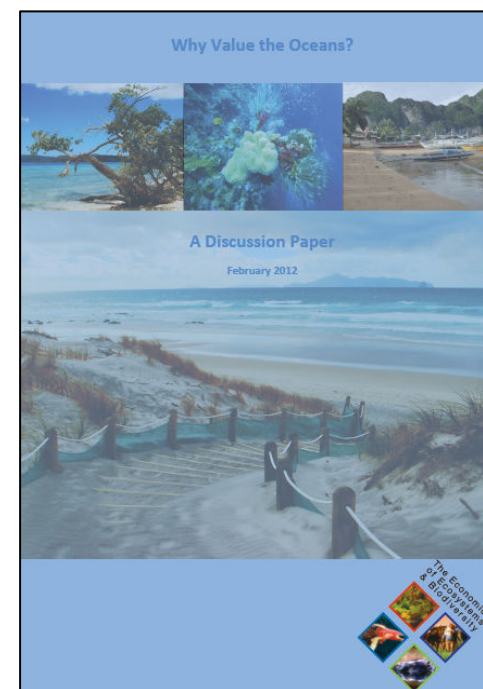Founders and members of the Board, Advisory and Observer Groups

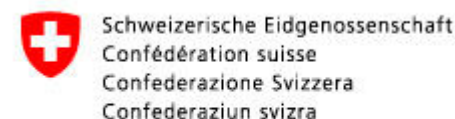# The Economics of Ecosystems & Biodiversity

TEEB Biome and Sectoral studies

- **Water and Wetlands (Report launched, Feb 2013)**

- Oceans and Coasts (Discussion Paper, flyer, and Project Proposal, 2012-2013)

- Agriculture and Food (Concept note, Aug 2013)

February 2012

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Thank You !

www.teebweb.org

www.teeb4me.com

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THE ECONOMICS OF ECOSYSTEMS AND BIODIVERSITY
FOR WATER AND WETLANDS

The Economics of Ecosystems & Biodiversity
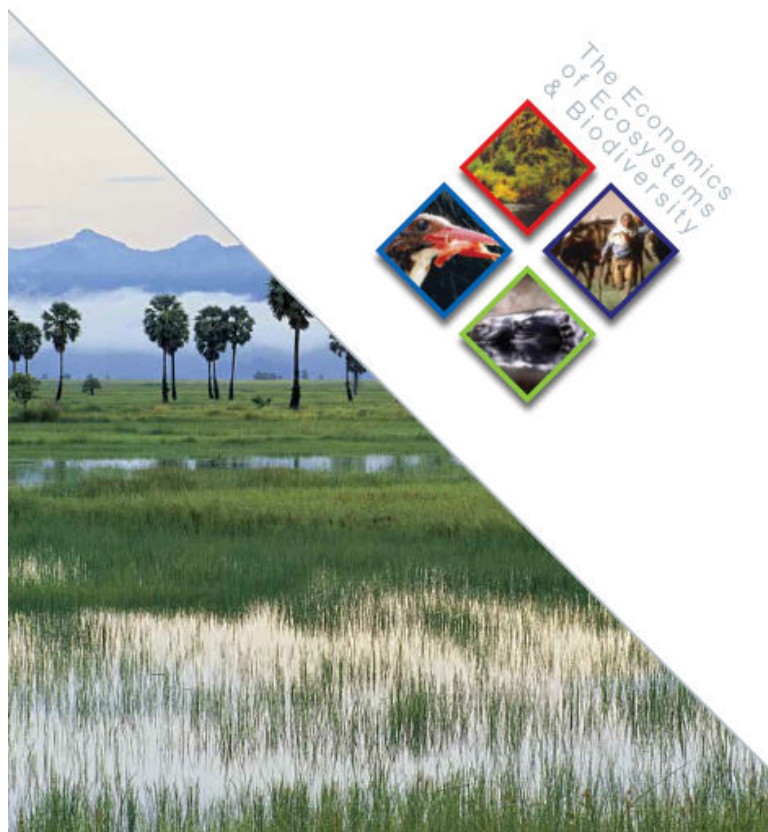
The TEEB for Water and Wetlands report

For more information: Chapters 1 and 2 of the TEEB W&W report

By Daniela Russi
Senior Policy Analyst, Institute for European Environmental Policy, IEEP

and Patrick ten Brink
Senior Fellow | Head of Brussels office & Environmental Economics Programme

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TEEB for Water and Wetlands www.teebweb.org/wetlands/

THE ECONOMICS OF ECOSYSTEMS AND BIODIVERSITY
FOR WATER AND WETLANDS

Core Team

Institute for European Environmental Policy

Ramsar CONVENTION ON WETLANDS (Ramsar, Iran, 1971)

WETLANDS INTERNATIONAL

Convention on Biological Diversity

IUCN

HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

Case contributions

Reviewers

Discussions at Rio+20, Ramsar COP 11, CBD COP11

- Objectives:
  - To argue for the <u>importance of measuring the ES</u> provided by wetlands
  - To show how to improve their management through <u>different policy tools</u>
  - To collect <u>many examples</u> of good practices and assessment exercises across the globe

- Targeted to a wide audience

- Buy-in strategy: revised by more than thirty experts, hundreds of comments received

Ecosystems: *"dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit"*

(Convention on Biological Diversity, art.2)

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Ecosystems services: benefits humans obtain from nature

Provisioning services

Food, fibre, fuel

Fresh water

Genetic resources

Medicinal resources

Regulating Services

Climate regulation

Water purification

Air purification

Natural hazards management

Erosion control

Pollination

Cultural Services

Spiritual/religious experiences

Landscape value

Recreation & tourism

Cultural heritage

Education &scientific knowledge

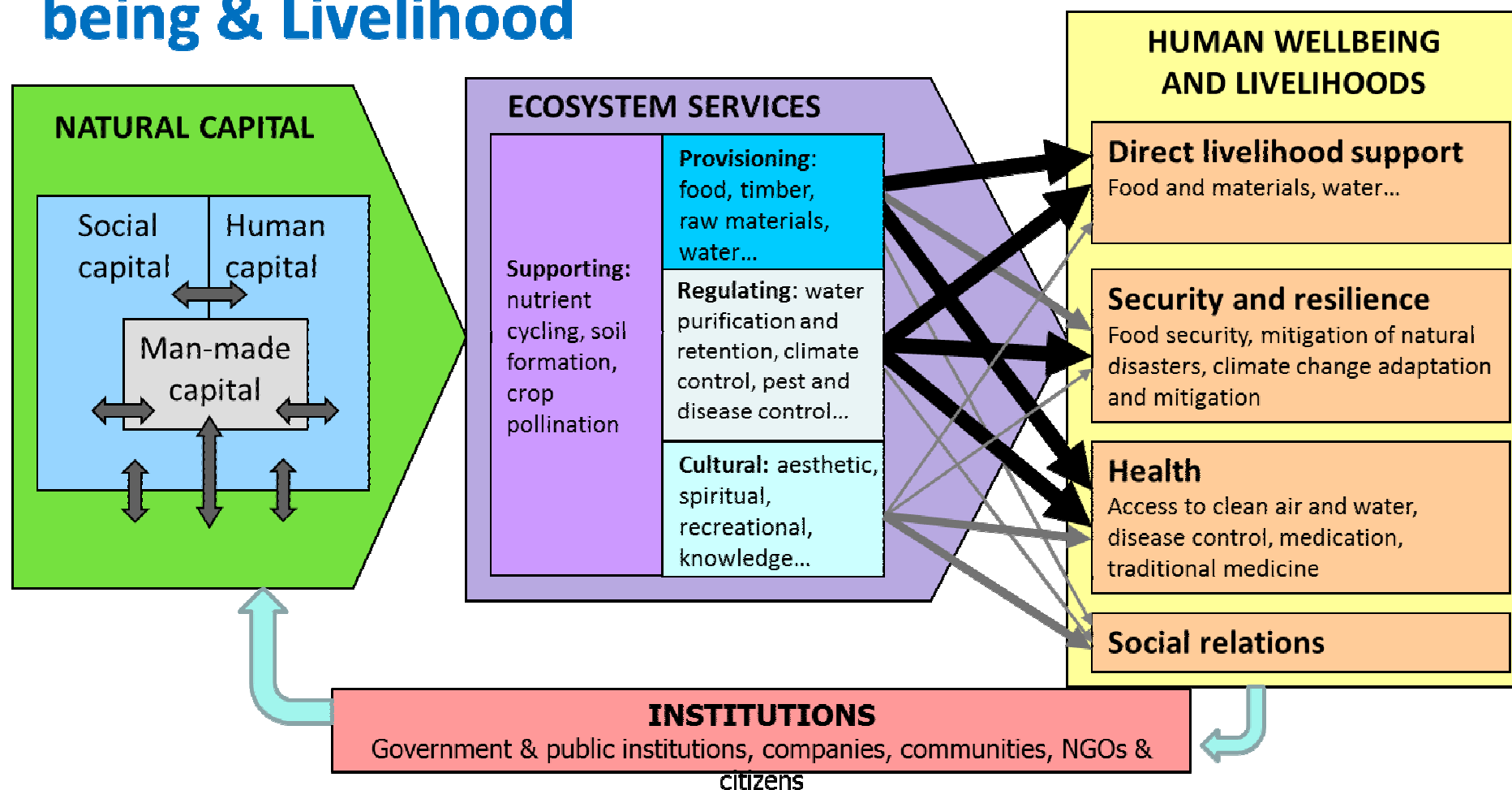### Supporting/habitat services:

Soil formation & fertility

Nutrient cycle

Photosynthesis

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Contribution of Natural Capital to Human Well-being & Livelihood

HUMAN WELLBEING AND LIVELIHOODS

NATURAL CAPITAL

Social capital | Human capital

Man-made capital

ECOSYSTEM SERVICES

Supporting: nutrient cycling, soil formation, crop pollination

Provisioning: food, timber, raw materials, water...

Regulating: water purification and retention, climate control, pest and disease control...

Cultural: aesthetic, spiritual, recreational, knowledge...

Direct livelihood support
Food and materials, water...

Security and resilience
Food security, mitigation of natural disasters, climate change adaptation and mitigation

Health
Access to clean air and water, disease control, medication, traditional medicine

Social relations

INSTITUTIONS
Government & public institutions, companies, communities, NGOs & citizens

slide by Patrick ten Brink, adapted from Laure Ledoux in ten Brink et al 2012, building on MA (2005) and TEEB (2011a)

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MAINLY LOCAL BENEFIT

MAINLY GLOBAL BENEFIT

ADDITIONAL NATIONAL BENEFIT

Climate / climate change regulation

Genetic / species diversity maintenance

Biochemicals & pharmaceuticals

Ecotourism & recreation

Education, art & research

Cultural & amenity values

Water (quantity)

Food/Fibre/Fuel

Natural hazards control (fire, flood)

Erosion control

Water and air purification & waste management

Pollination / seed dispersal

Institute for European Environmental Policy

What are wetlands?

## The broad definition by the Ramsar convention

- Areas where the water table is at or near the surface level, or the land is covered by shallow water

- Areas of marine water the depth of which at low tide does not exceed 6m

- A list of islands or bodies of marine water deeper than 6m (e.g. coral reefs)

The definition includes human-made wetlands (e.g. aquaculture, farm ponds, inundated agricultural land)

Photo credit: Nick Davidson

Inland wetlands cover at least **9.5 M km²** (i.e. **6.5%** of the Earth)

Inland and coastal wetlands cover a minimum of **12.8 M km²**

slide by Daniela Russi
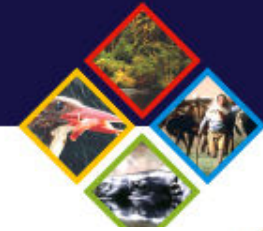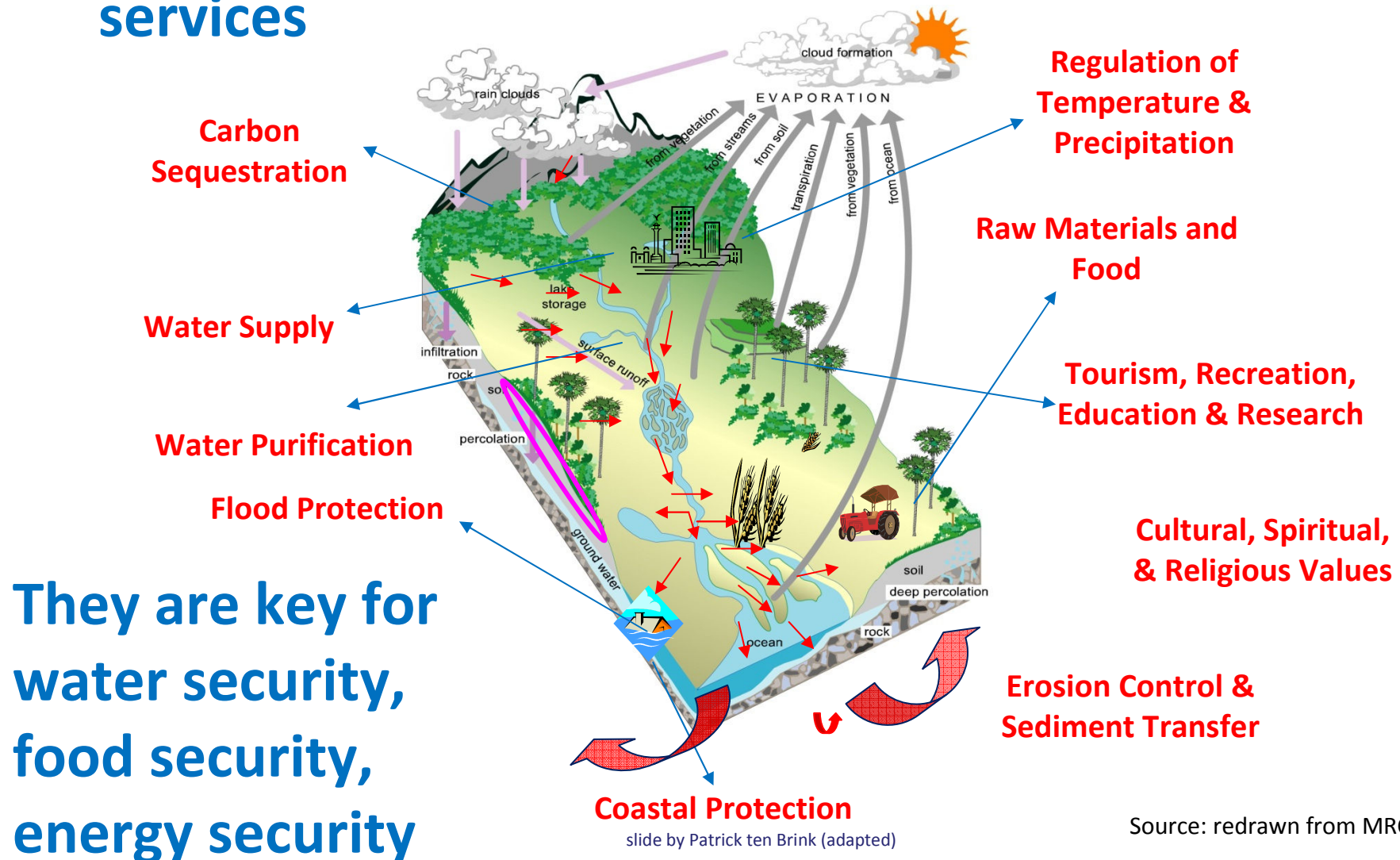
The water cycle and wetlands

- Global and local water cycles
are strongly dependent on wetlands

- Without wetlands, the water cycle, carbon cycle, and nutrient cycles would be significantly altered

Source: redrawn from MRC (2003)
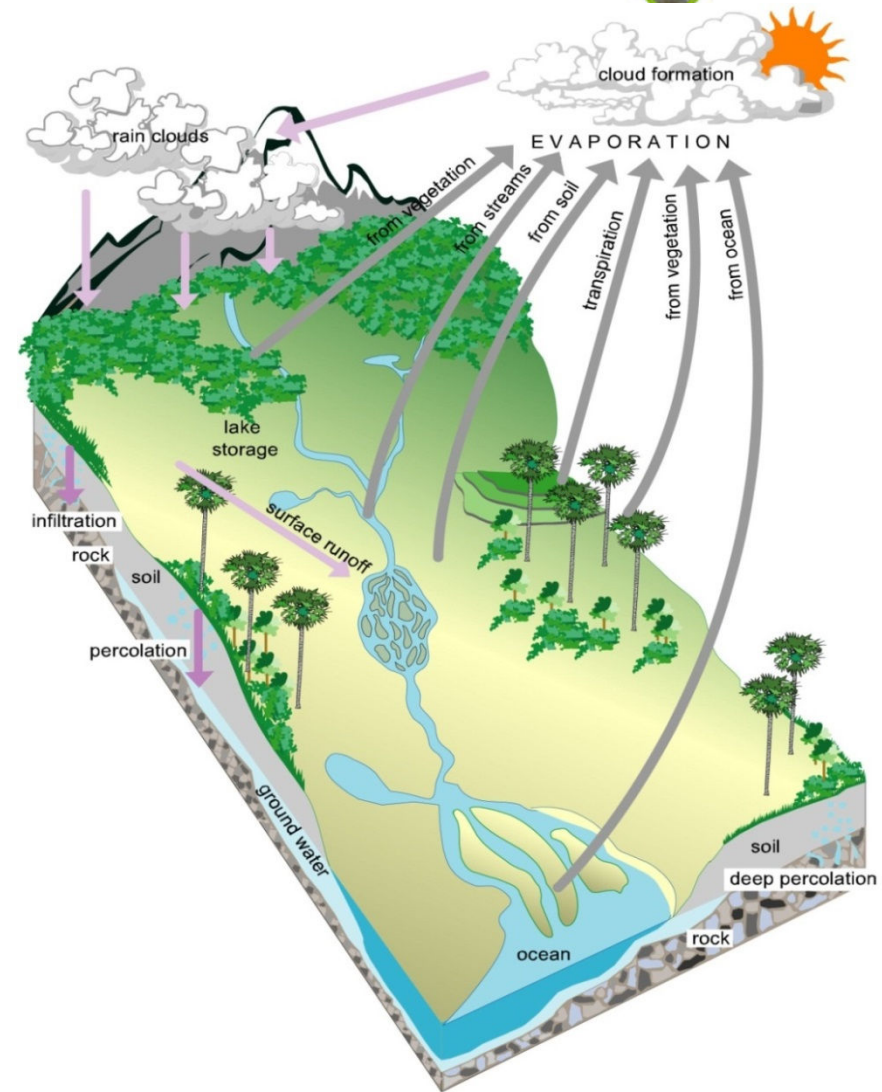
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Wetlands provide many key ecosystem services

Carbon Sequestration

Water Supply

Water Purification

Flood Protection

They are key for water security, food security, energy security

Regulation of Temperature & Precipitation

Raw Materials and Food

Tourism, Recreation, Education & Research

Cultural, Spiritual, & Religious Values

Erosion Control & Sediment Transfer

Coastal Protection
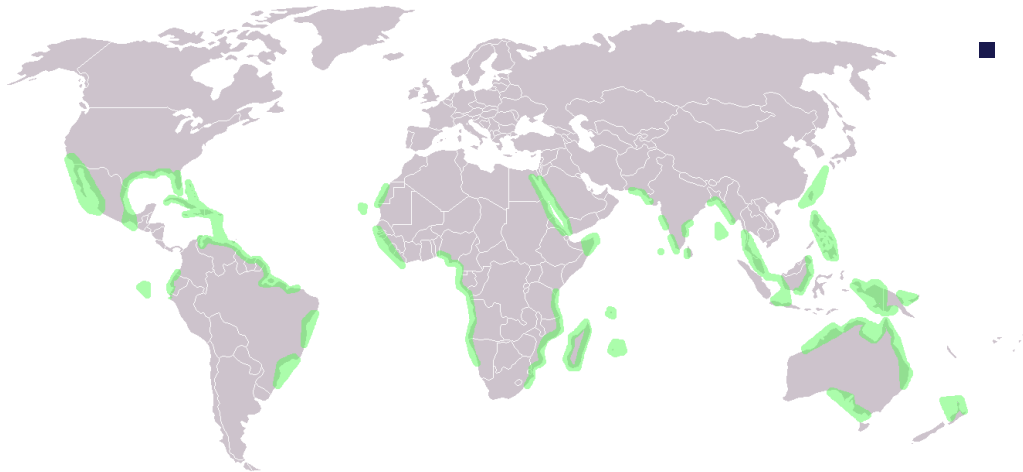
slide by Patrick ten Brink (adapted)

Source: redrawn from MRC (2003)

Wetlands : historical loss of natural capital

- **Since 1990 around 50% of wetlands have disappeared worldwide (UNWWAP 2003), and around 60% in Europe (EEA 2010)**

- **In the past two decades, 35% of mangroves have disappeared. In some countries the loss has been up to 80% (MA 2005)**

http://upload.wikimedia.org/wikipedia/commons/9/95/World_map_mangrove_distribution.png

Coral reefs
Warm water
Cold water

- **~20% of the world's coral reefs destroyed**

- **24% of the remaining reefs under imminent risk of collapse due to human pressure** *(Wilkinson C., 2004; Nellemann et al 2008)*
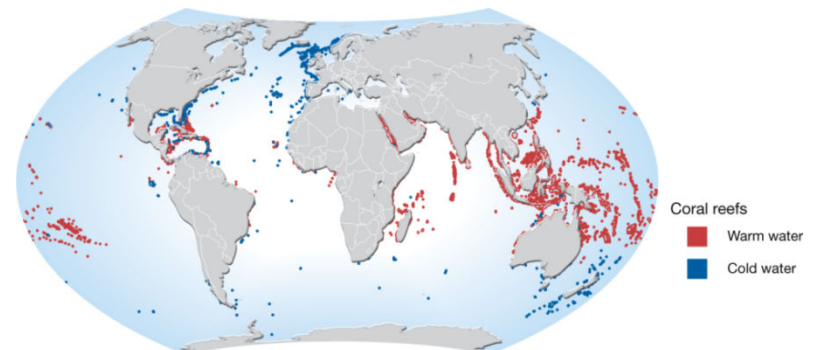
Why?

One of the reasons is that the ES provided by wetlands are often <u>invisible</u>, as they are <u>free</u> or <u>underpriced</u>
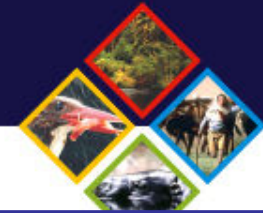
- <u>Not enough awareness</u> of full benefits/costs of restoration vs. degradation $\Rightarrow$ insufficient incentives towards wise use
- <u>Inadequate evidence base</u> at policy makers' finger tips

Continued loss of wetlands

slide by Patrick ten Brink (adapted)

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Understanding and communicating the economic, social and cultural value of wetlands is crucial to fostering conservation
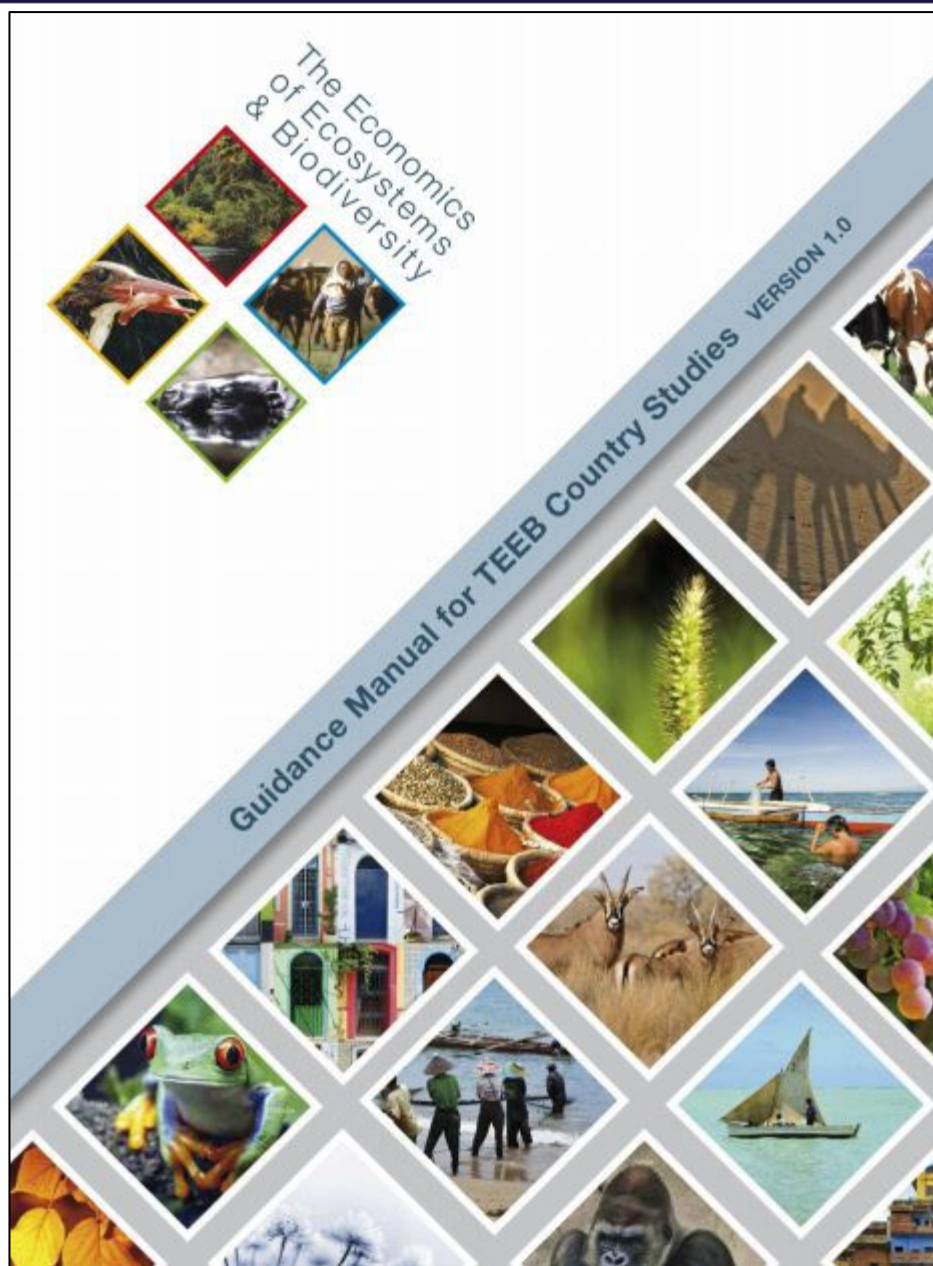
This need a combination of **qualitative and quantitative** and, where appropriate, **monetary indicators**

Different policy tools can be used to promote the wise use of wetlands (e.g. regulation, MBIs, PAs, …)

© Daniela Russi

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TEEB for Country Studies
Guidance Manual

Presenter: Johannes Förster

HELMHOLTZ
CENTRE FOR
ENVIRONMENTAL
RESEARCH – UFZ

Authors:
Heidi Wittmer, Hugo van Zyl, Claire Brown, Julian Rode, Ece Ozdemiroglu, Nick Bertrand, Patrick ten Brink, Andrew Seidl, Marianne Kettunen, Leonardo Mazza, Florian Manns, Jasmin Hundorf, Isabel Renner, Strahil Christov, Pavan Sukhdev

6th ESP Conference, 2013, Bali, Indonesia
Session on TEEB Country Studies

UNEP   HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ   giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH   BMZ Federal Ministry for Economic Cooperation and Development   European Commission

Guidance Manual for TEEB Country Studies

Focus: Guidance for countries who would like to do a
TEEB Country Study (TCS)

Target audience: Person(s) in charge of conducting a TCS

Format:

- Practical guidance for how to do a TCS
- Integrates problems, experience, obstacles, pitfalls from on-going projects

Timeline:
First draft available since May 2013
Final version printed by 2015

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What is the TEEB Country Study Manual about?

1 What is TEEB? How does it integrate into the policy landscape?

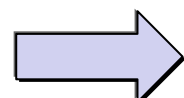**2** How to select the scope and objective of the TEEB Country Study (TCS)? How to set up the process?

3 Main study phase: TEEB six-step Approach

4 How to use findings & recommendations of a TCS?

➡ **Experiences from TEEB International Study**

Was TEEB-international successful?

- **Discourse:**
  - Good press coverage
  - Presented and mentioned at important conferences
  - Plenty of invitations from science, society and policy
  - High feedback to review request

- **Inclusion in policy debate:**
  - Included in CBD strategic plan in 25 articles

- **Inclusion in policy**
  - E.g. ecosystem services and their value in many research and project funding tenders
  - National Assessments started in several countries in preparation in several others
  - EU biodiversity strategy

Why was TEEB international a success?

- **„Independence"** (Study leader, advisory board, call for evidence, open architecture, UNEP)

- **„Relevance"** (coord group, advisory board, active promotion, simple tailored messages)

- **Leadership and knowledge in process organisation**
  - Study leader (background and active communication)
  - Broad experience in processes (international organisations, international negotiations, public administration, private sector, UFZ competence);
  - Discursive and consensus-oriented discussion style

Specific challenges of TEEB Studies

1) **Show the „added value" of a TEEB-approach / an economic perspective**

   – Gap analysis, feasibility study...

   – The Economics vs. The Politics of Ecosystems & Biodiversity

Specific challenges of TEEB Studies

2) Balance credibility – relevance – legitimacy

- – Governance structure
- – Open architecture
- – Involving other ministries
- – Independence of study

Specific challenges of TEEB Studies

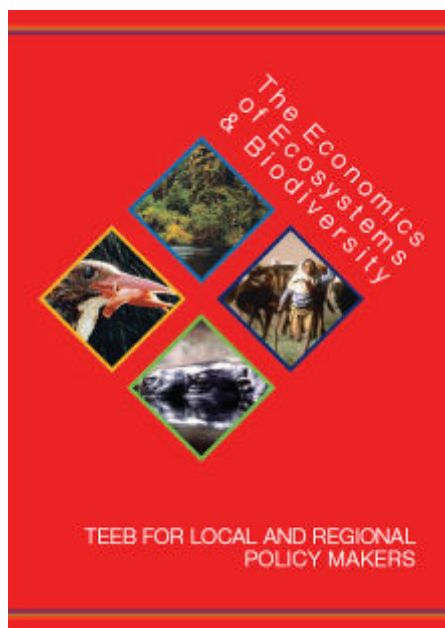## 3) Translate results into arguments for policy debates

- Beyond the „converted"

- Impact on the ground

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Six steps for effectively appraising ecosystem services

➢ Not a fixed recipe but guidance for policy makers in designing their own processes:

TEEB FOR LOCAL AND REGIONAL POLICY MAKERS

1. Specify and agree on the policy issue with stakeholders.
2. Identify the most relevant ecosystem services.
3. Define the information needs and select appropriate methods.
4. Assess ecosystem services.
5. Identify and appraise policy options.
6. Assess distributional impacts of policy options.

Source: TEEB 2010 – Quick Guide to TEEB for Local and Regional Policy Makers

Conclusions

1. **TEEB is more than economic valuation:**
   - Economics is about the relationship between humans and ecosystem services, choices, public goods, trade-offs
   - Complementary argument: Economic argument should complement not replace other arguments.

2. **TEEB is an instrument rather than a goal:**
   - it can help address policy and management concerns

3. **TEEB is not (just) a study but a process:**
   - „Valuation as conversation" Kai Chan, Univ British Colombia
   - Dialogue in society to decide the kind of life we want to live:
     Globally, nationally, regionally, locally

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Thank you!
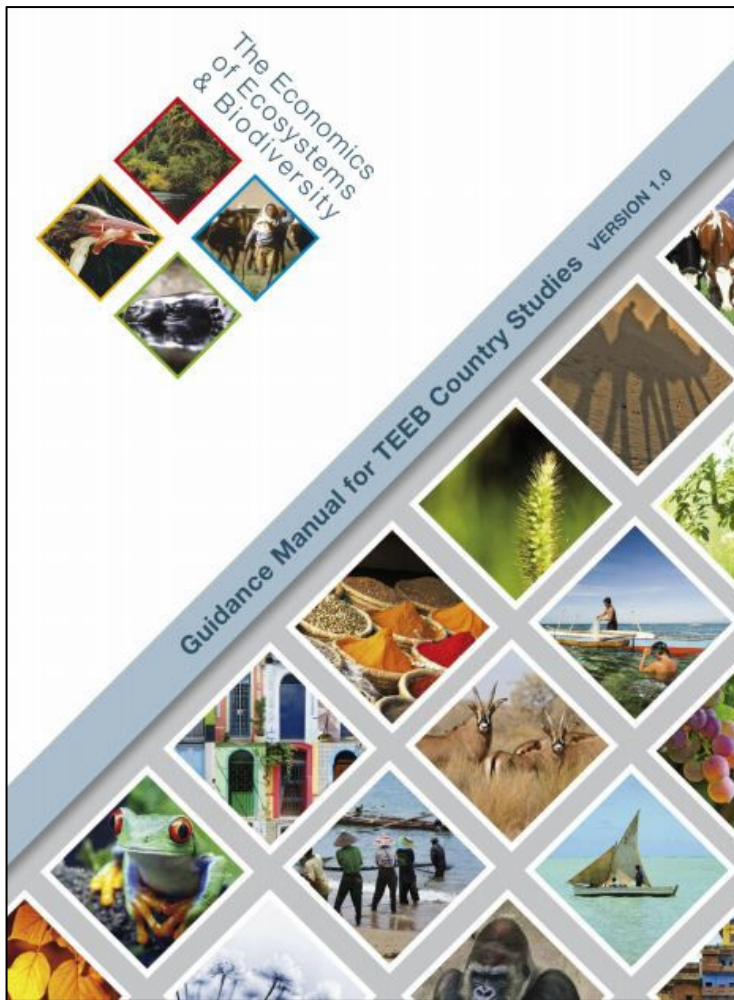
Available at:
www.teebweb.org/wp-content/uploads/2013/05/TEEB_GuidanceManual_2013_1.0.pdf

Authors:
Heidi Wittmer, Hugo van Zyl, Claire Brown, Julian Rode, Ece Ozdemiroglu, Nick Bertrand, Patrick ten Brink, Andrew Seidl, Marianne Kettunen, Leonardo Mazza, Florian Manns, Jasmin Hundorf, Isabel Renner, Strahil Christov, Pavan Sukhdev

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giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

BMZ Federal Ministry for Economic Cooperation and Development

European Commission

Case Study Practical Exercise:
TEEB Reef

Instructions:

- *Choose your group leader, who will lead the discussion and report back to the other participants*
- *Use the questions as a guide to propose solutions for the case study, taking into account the methodologies and the issues discussed during the previous session*

Case Description:

The TEEB Reef is a healthy coral reef providing multiple benefits to a variety of people. Besides sustaining fisheries the TEEB Reef is also an appealing destination for dive tourists.

Therefore the TEEB Reef was declared a marine protected area and a no-take zone was established. However, fishermen were not convinced of the no-take zone causing conflicts over the use of the reef and undermining the establishment of the protected area.

Practical Exercise Questions – Module 1

- What are the most important ecosystem services provided by the wetland? Where are the ecosystem services of the wetland used?
- What are the potential threats to the wetland and its ecosystem services? How do they impact the wetland and its functions?

	Local context	Regional context	National context	International context?
Ecosystem services provided by the wetland				
Threats to the wetland				