

WORKING TOGETHER TO
INSPIRE SUSTAINABLE
SOLUTIONS



Training in Payments for Ecosystem Services

Sofia August 8, 2013

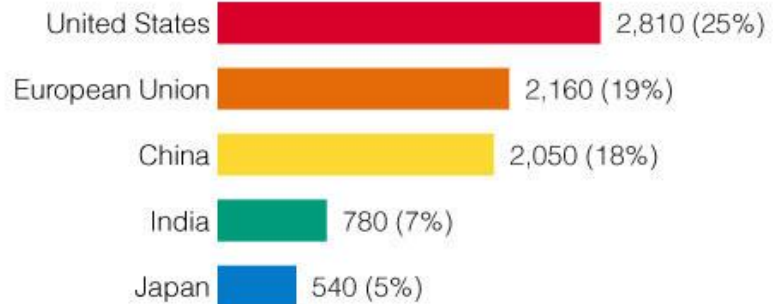
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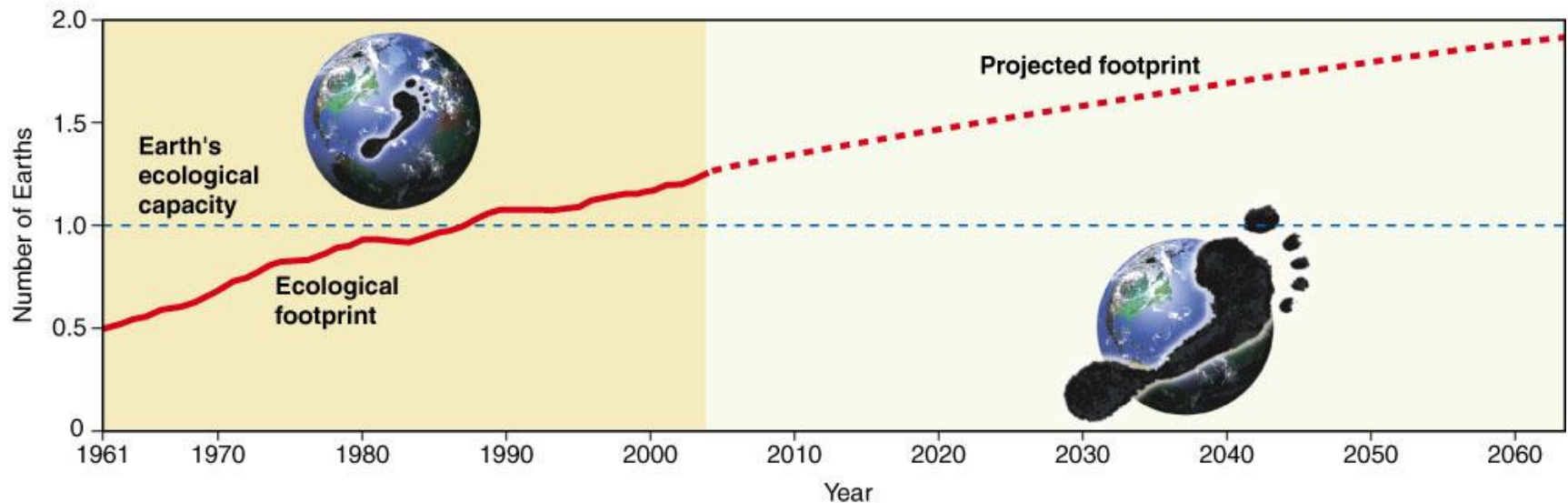
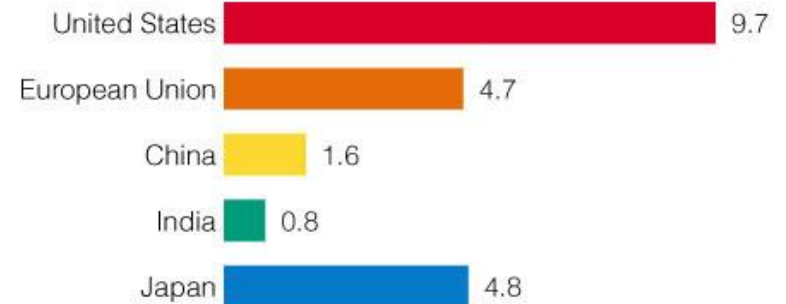
BULGARIAN-SWISS COOPERATION PROGRAMME
БЪЛГАРО-ШВЕЙЦАРСКА ПРОГРАМА ЗА СЪТРУДНИЧЕСТВО

Ecological Footprint

**Total Ecological Footprint (million hectares)
and Share of Global Ecological Capacity (%)**



**Per Capita Ecological Footprint
(hectares per person)**



- About half of earth's land surface has been transformed by human activity,
- over half of available freshwater is used by humans,
- Because of human activity only one half of the world's original forests remain (WRI, 1997).
- Humans are driving species to extinction at a rate of four each minute.

Ecosystems producing services that are often 'invisible' to most people such as air and water filtration, flood protection, carbon storage, pollination for crops, and habitat for fisheries and wildlife

These values are not captured in markets, so we don't know how much they contribute to the economy and livelihoods. *We often take these services for granted and don't know what it would cost if we lose them.*

The value of the earth's *ecosystem services was estimated at US\$33 trillion*, compared to a *global GNP of about US\$18 trillion* at the time.

(Costanza et al 1997).

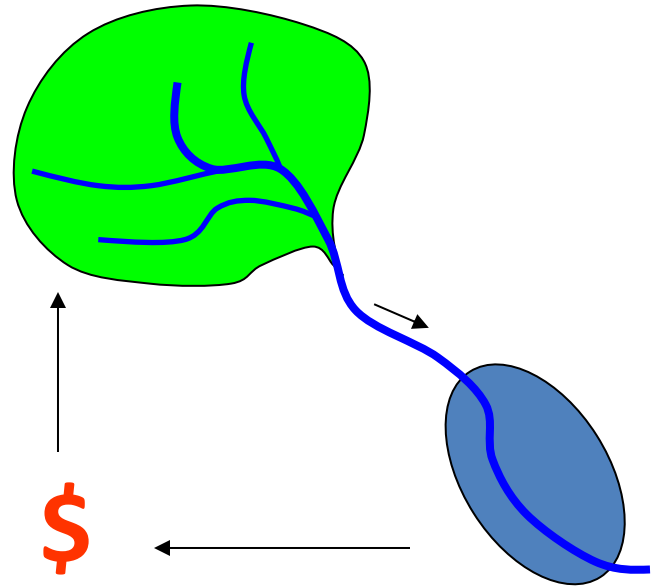
Because of human activity the planet is in bad shape. According to the Living Planet Index [\(2\)](#), the health of the earth has declined 30% since 1970.

How much are the earth's breathable air and fresh water worth? How about all the vegetation and wildlife and all the complex ecosystems that tie everything together and allow us to live on this planet?

When the entire value of environmental services and environmental capital resources is known, along with the effect of human activity on this value, *intelligent decisions can be made within the economic framework.*

Payments for Ecosystem Services

Those who use the
ecosystem service
pay those who
provide the service



WHAT IS PES?

PES can be essentially defined in terms of payments to land managers and others to undertake actions that increase the quantity and quality of desired ecosystem services, which benefit often remotely.

TYPES OF PES:

- Biodiversity
- Water
- Carbon
- Others: Scenic beauty (eco-tourism), bundled services (land trusts, conservation)

PES: what it is not

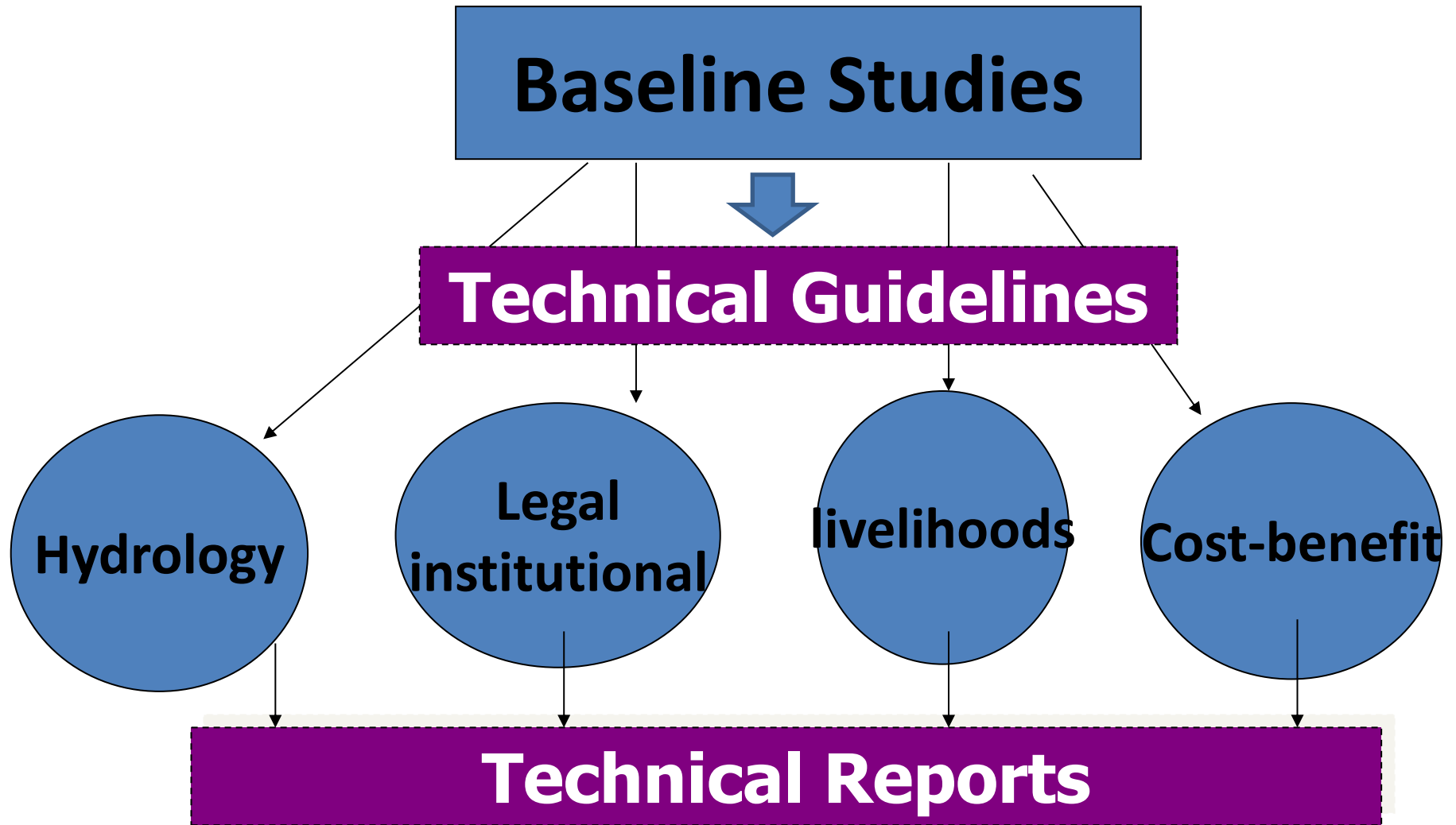
- Incentives for Conservation
- Social Corporate Responsibility
- Command and Control
- Payments or compensation?
- Polluters pay

PLANNING PES

BASIC COMPONENTS/STEPS

- PROBLEM CLEARLY DEFINED: SCIENTIFIC EVIDENCE
- ANTHROPOGENIC CAUSE. NOT NATURAL CAUSES; NOT ADMINISTRATIVE PROBLEMS. UNSUSTAINABLE LAND USE
- IMPACT FOR USERS CLEARLY ESTABLISHED
- BUSINESS AS USUAL NOT ACCEPTABLE
- OTHER OPTIONS STUDIED. PES: BEST AVAILABLE OPTION.

Programme Development



CONSTRUCTING PES

WHO ARE THE BUYERS? WHO ARE THE SELLERS?

WHAT IS BEING SOLD?

HOW DO DETERMINE THE VALUE (PRICE OF THE SERVICE)?

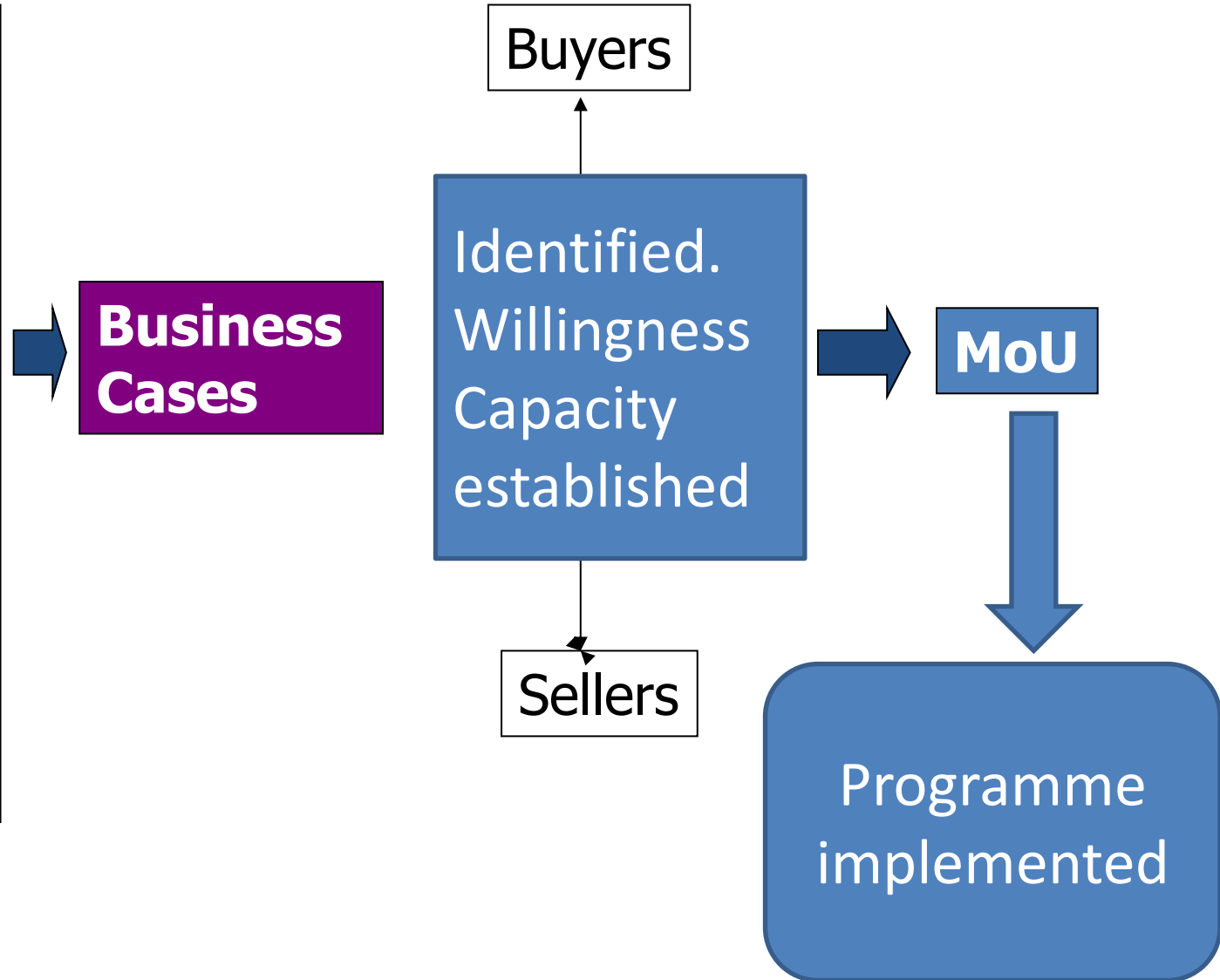
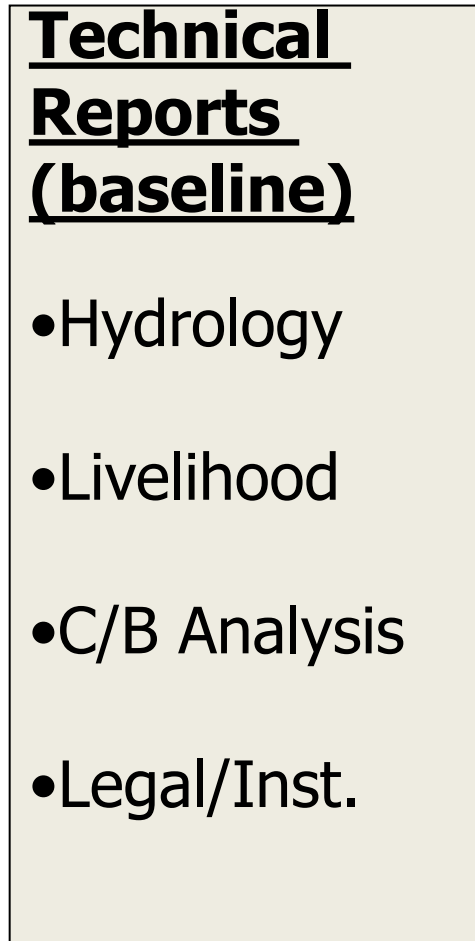
HOW DO YOU ASSURE COMPLIANCE BY SELLERS (SERVICE DELIVERY) ?THE

CONTINGENCY PRINCIPLE

HOW DO YOU SECURE PAYMENTS?

SUSTAINABILITY; GOVERNANCE;POLICY

Programme Development (cont'd)



Valuation of Ecosystem Services

“Nowadays people know the price of everything and the value of nothing”.
Oscar Wilde

“The labour of Nature is paid, not because she does much but because she does little. In proportion, as she becomes niggardly in her gifts, she exacts a greater price for her work. Where she is magnificently beneficent, she always works gratis.” (Ricardo, 1817)

- **Market economy** vs. Natural Economy
- **Willingness to pay** vs. real production costs
- **Opportunity costs:** An accounting/economics term referring to the value of something given up to pursue something else.

Monitoring Impact

Knowledge is cumulative endeavour constructed upon empirical outcomes.

PES as an innovative finance mechanism for conservation is, among other things, a **Knowledge systems** highly dependent on the effectiveness and accuracy of **monitoring**.

MONITORING AND EVALUATION

Allows verification of deliverables as per objectives

Facilitates adjustments and corrections while implementing project activities

Key factors for successful M/E

- Agreement on verification systems (Environmental Auditors)
- Joint selection of indicators: biophysical; social; economic

MONITORING IMPACT

Monitoring varies according to the kind of service involved:

- Carbon (changes in co2 emissions)
- Hydrology-watersheds (changes in quantity or quality of water)
- Biodiversity (changes in number of species)
- Aesthetic (tourism: changes in impact)

MONITORING IMPACT

- In ALL cases we need STRONG, RELIABLE and, VALID baseline. This must be scientifically Established and verified.
- It is the point of reference against which all measures of impact are made:
 - How many tons. of CO_2 are being emitted after 10 years of reduced deforestation.
 - how much lower are levels of water turbidity downstream after changes in land use upstream

Danube Basin

Area: 800,000 KM² (10% Continental Europe) the Danube Extends into the territories of 19 countries. It is considered the most international river basin in the World.
Population: 165 million

Environmental impact of the Danube River Basin: serious problems with water quality and quantity, and significant reductions in biodiversity

The steady degradation of the Danube's environment has severely affected the health of its residents, wreaked untold ecological damage on the river's once thriving ecosystem, and destroyed much of the region's biodiversity.

This environmental awareness has largely been driven by the realization that a healthy watershed offers the region numerous business opportunities for many industries, including shipping, ports, energy, construction, tourism, agriculture and fisheries.

Major problems affecting aquatic ecosystems in the Danube River Basin

- Excessive nutrient loads (particularly nitrogen and phosphorous)
- High amounts of organic substances originating from untreated or poorly treated wastewater
- Changes in river flow patterns (hydromorphological alterations) and its effect on sediment transportation
- Contamination with hazardous substances (including heavy metals, oil, and microbiological toxins)
- Accidental pollution from contaminated sites or waste disposal, as well as from navigation
- Degradation and loss of wetlands