



# **Ecosystem Services and Rural Poverty Reduction**

**Issues, Challenges and Opportunities**

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## Focus

Poverty

Poverty-Environment Linkages

Poverty – Biodiversity Linkages

Ecosystem Services

Perspectives

Opportunities

Nature and Economics

Conceptual Framework

Reflections and Thoughts



# A Vicious Circle?



Brundtland Report 1990 - *poverty as a major **cause** and **effect** of global environmental problems*

***Poverty is the worst kind of pollution*** – Mme. Indira Gandhi, the then Prime Minister of India



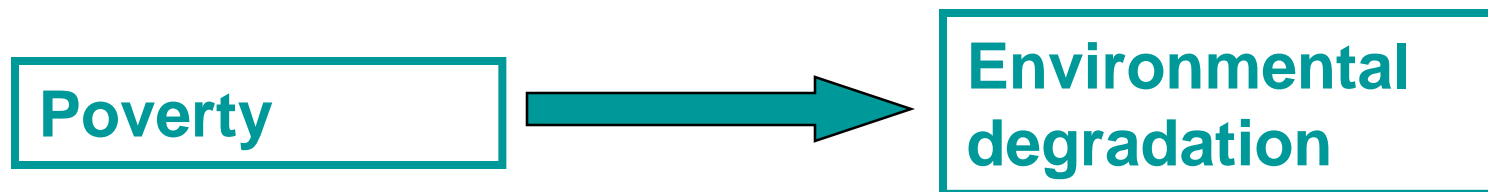
# Responding to environmental threats

- **Demand for environmental quality ...**
  - ... the poor are too busy thinking about basic survival to concern themselves with environmental issues, therefore for them it is a luxury
- **Ability to respond to such demands ...**
  - ... economic prosperity and technological sophistication allow nations to react to environmental challenges



# Views on poverty-environment linkages

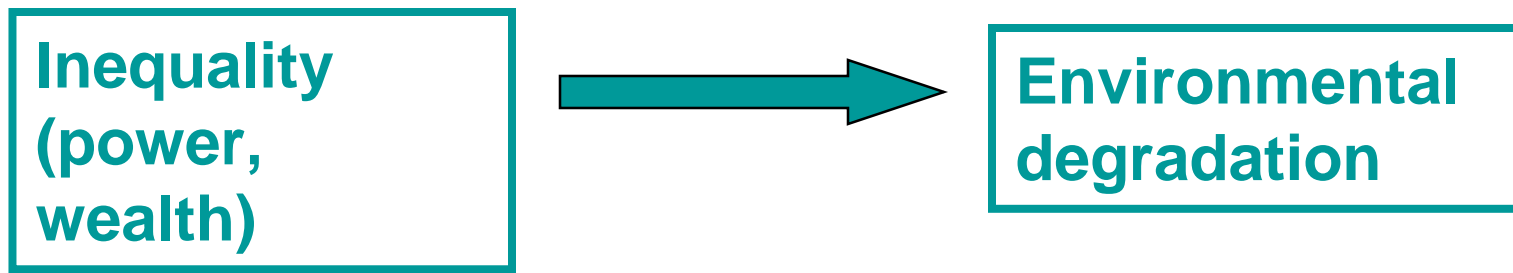
- **Conventional wisdom**
  - Deterministic relationship: if one is poor, then one degrades the environment
  - Poverty is negatively related to sustainable development - short time horizons of the poor
  - ***Policy: need for economic growth to break the downward spiral***





# Alternative perspectives

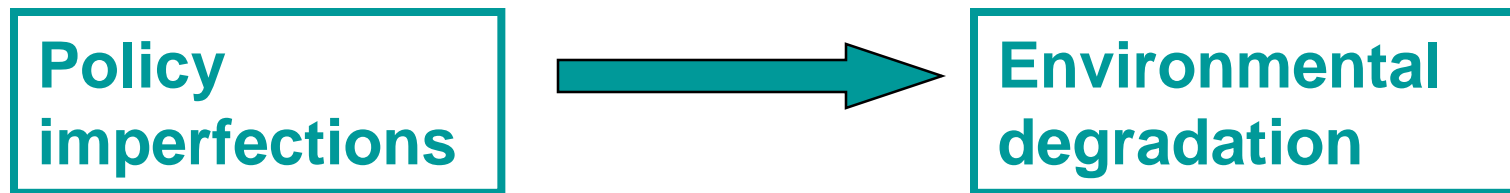
- **Political economy**
  - Why are people poor? Poor as proximate causes, but inequalities as the ultimate causes
  - Evidence that the poor can and do care for the environment: effective environmental stewardship
  - The poor as environmental activists: new social and ecological movements; grassroots political action
  - ***Policy - remove inequalities***





# Alternative perspectives

- **Market/institutional failure**
  - Price signals - perverse subsidies/taxes
  - Tenure policies/property rights
  - Legal framework
  - Implementation capacity
  - Competing policy demands
  - ***Policy – correct market/institutional failure***





# Alternative perspectives

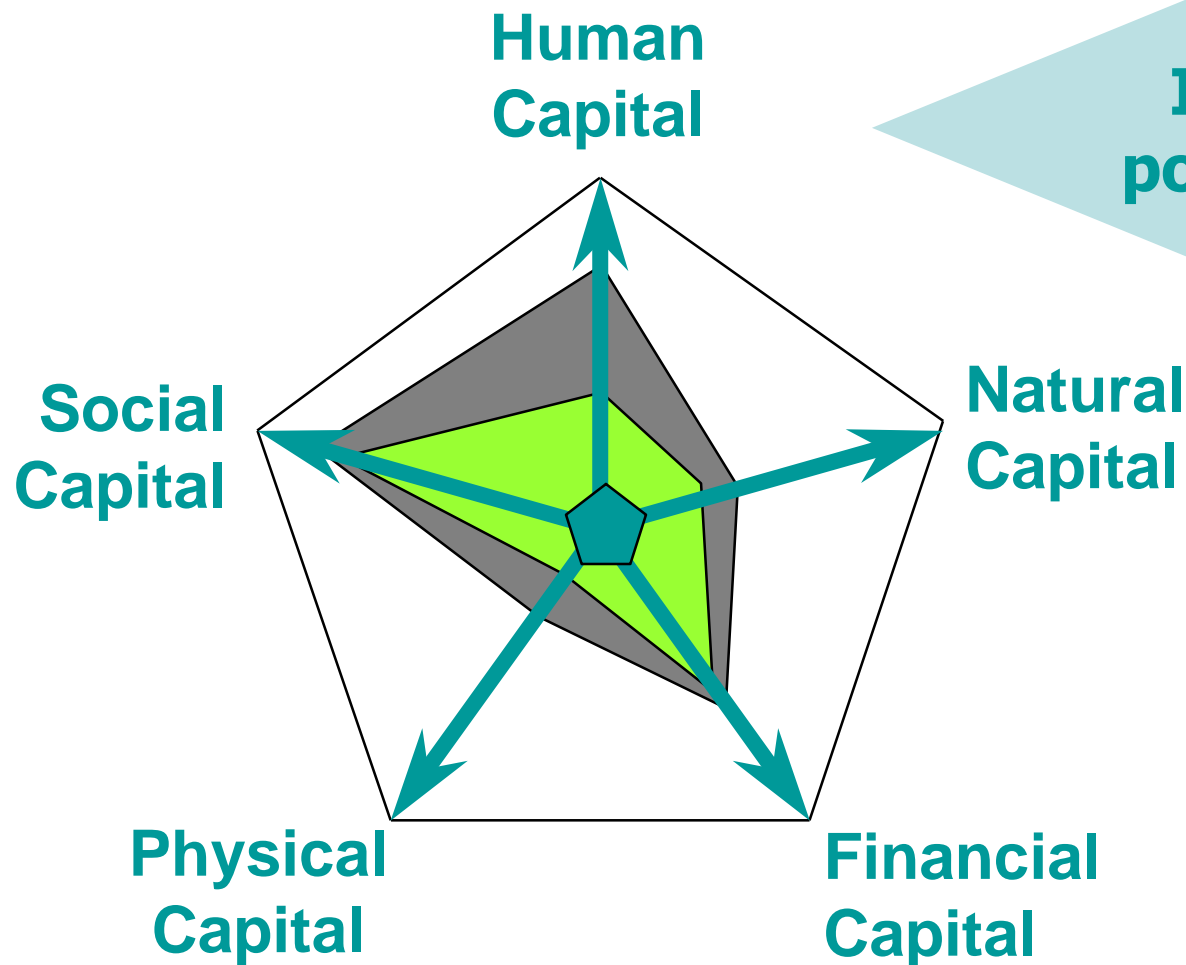
- Reversing the causality
  - Dependence of the poor on natural resources for their livelihoods
  - Impact of internal and external pressures is to undermine the sustainability of the local resource base
  - ***Policy - improved environmental sustainability as a poverty alleviation strategy***



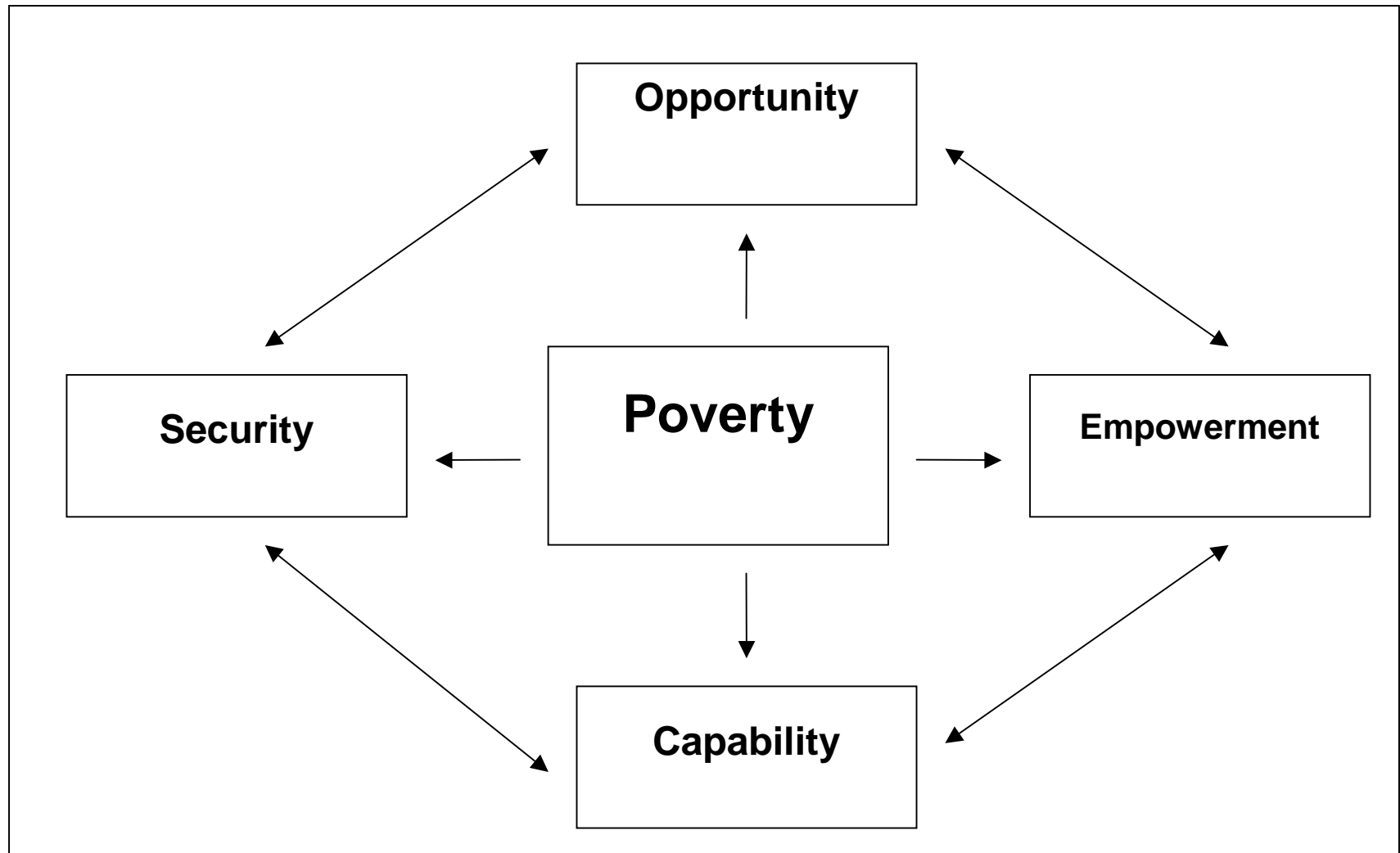




It's all about pushing out the 'area' of these assets



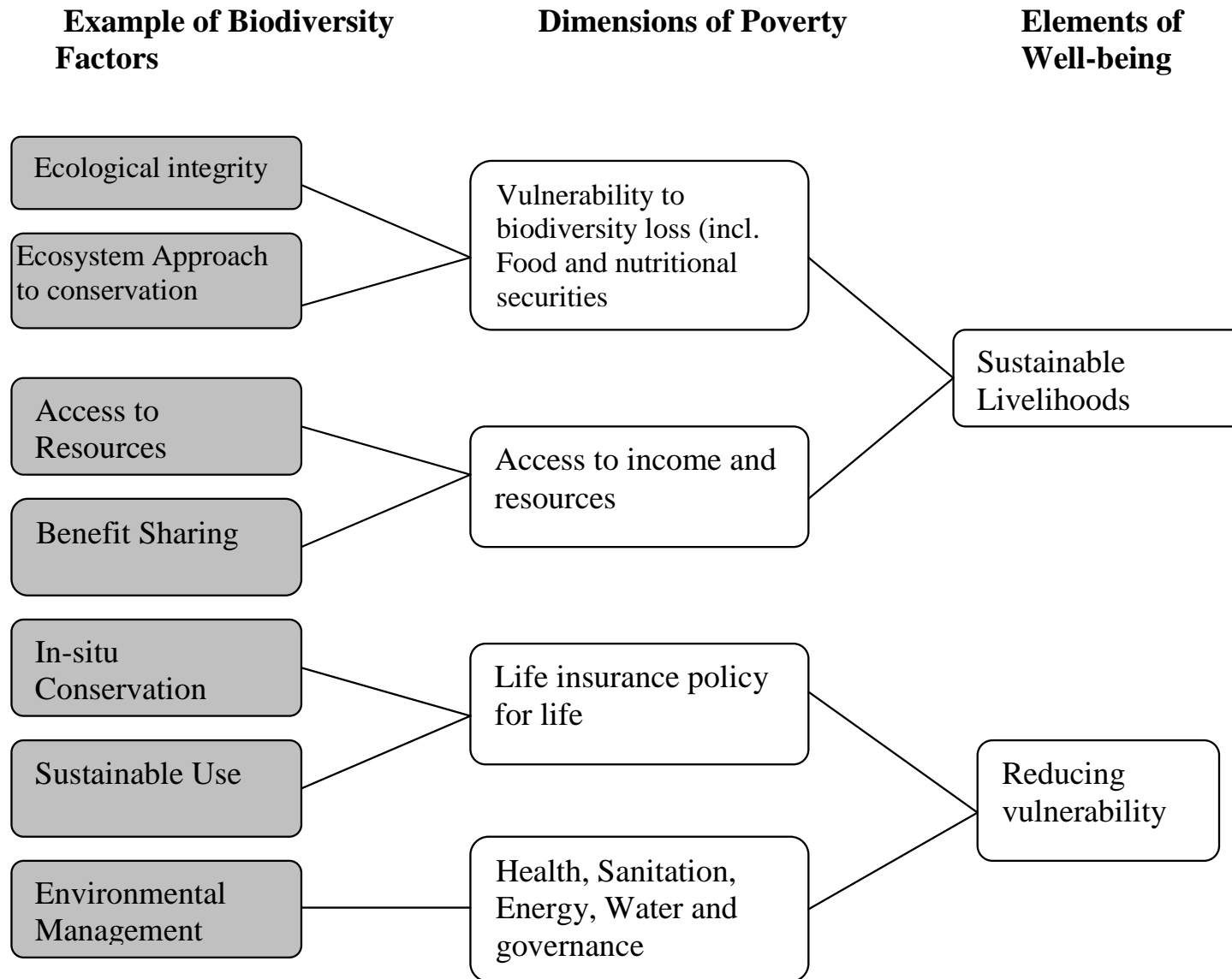
# Dimensions of Poverty





# Biodiversity, Poverty and Well-being

Figure 3 – Biodiversity Links to the Dimensions of Poverty





# Ecosystem Services



# Ecosystem Services

- 60% (15 out of 24) ecosystem services are either degraded or used unsustainably.
- Provisioning services are declining
- Regulating and cultural services are not receiving enough attention



## Perspectives on Ecosystem Services and its contributions to Poverty Reduction

- ✓ Wildlife conservation perspective – conservation finance
- ✓ Environmental management perspective – incentive for good environmental stewardship
- ✓ Poverty reduction perspective – alternate incomes
- ✓ Economic planners' perspective – way of correcting market failures



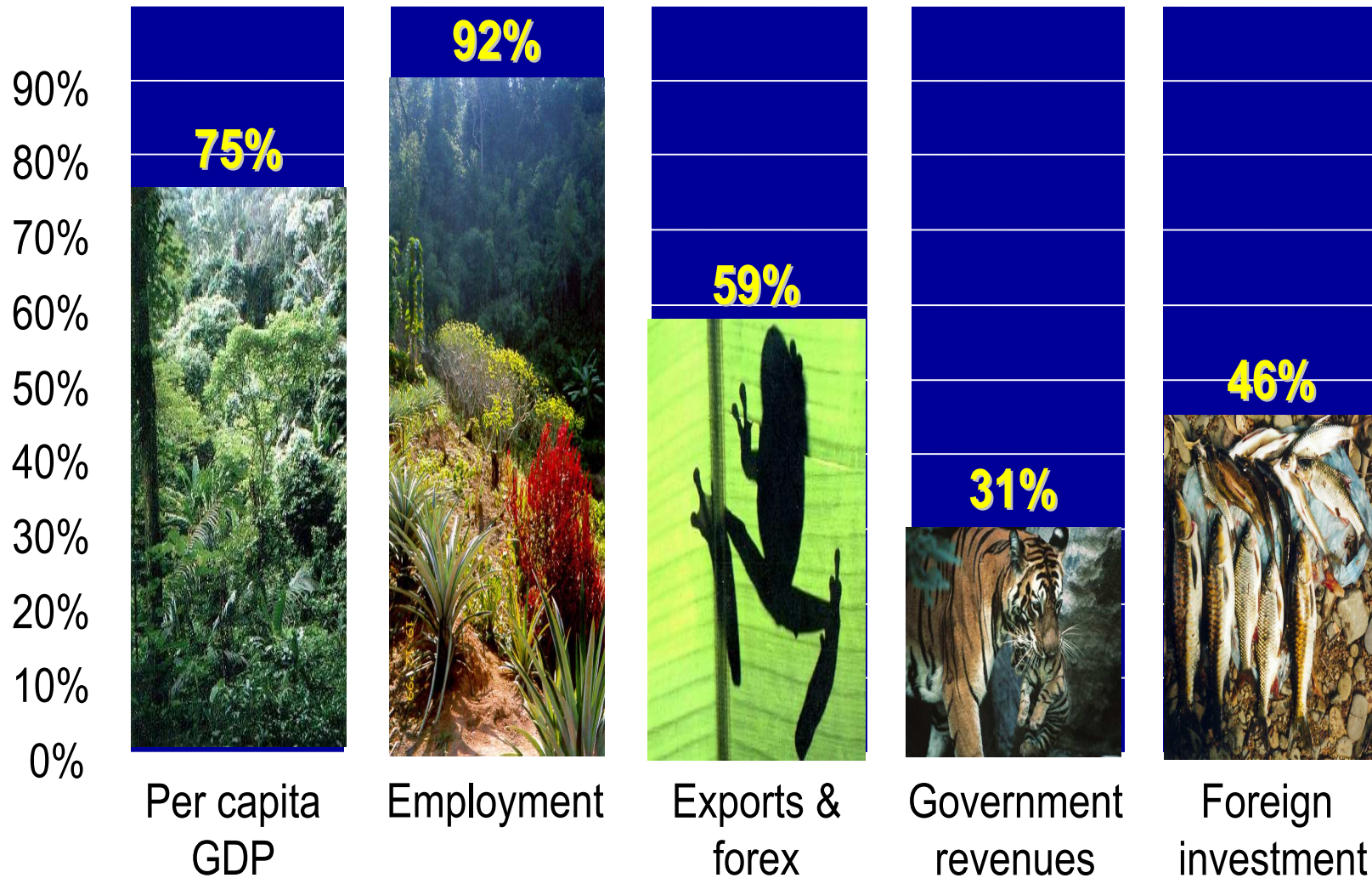
# Perspectives on Ecosystem Services and its contributions to Poverty Reduction

- ✓ Rural empowerment and equity perspective – redress historical imbalances
  - ✓ Peace and Justice perspective – mechanisms for managing conflicts on resource use or benefit sharing
  - ✓ Business perspective – redressing damage, CSR
  - ✓ Local community – recognition of their efforts and source of revenue
- 
- The CBD perspective
    - The UNFCCC perspective
    - The ITPGRFA perspective
    - The MDG perspective



# Value of Forests in National Economy – Lao PDR

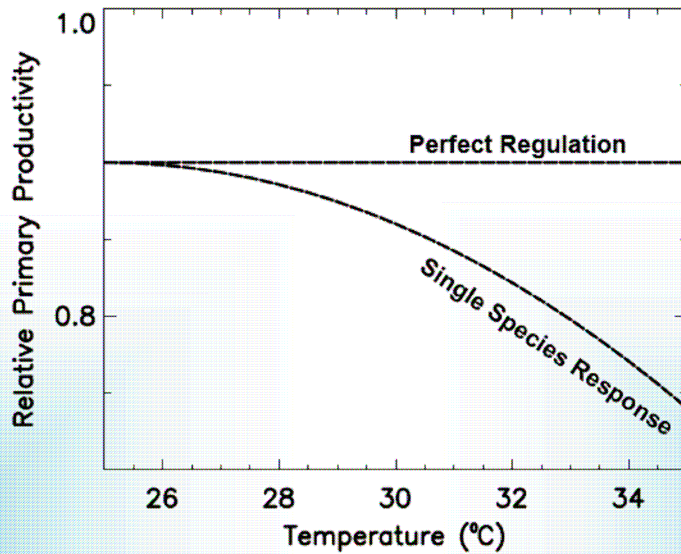
(Source: IUCN, 2003)





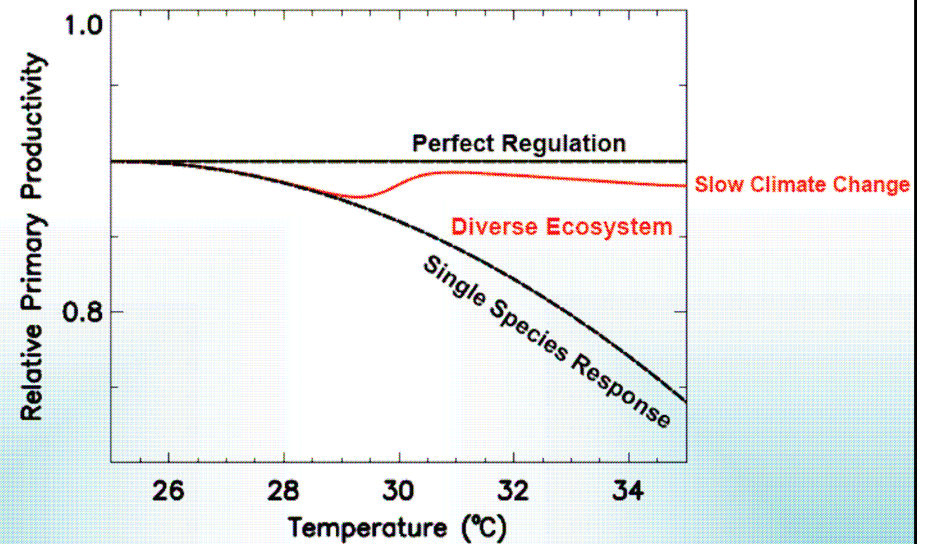


### Schematic Sensitivity of Primary Productivity to Climate



**Role of biodiversity in productivity related to climate change**

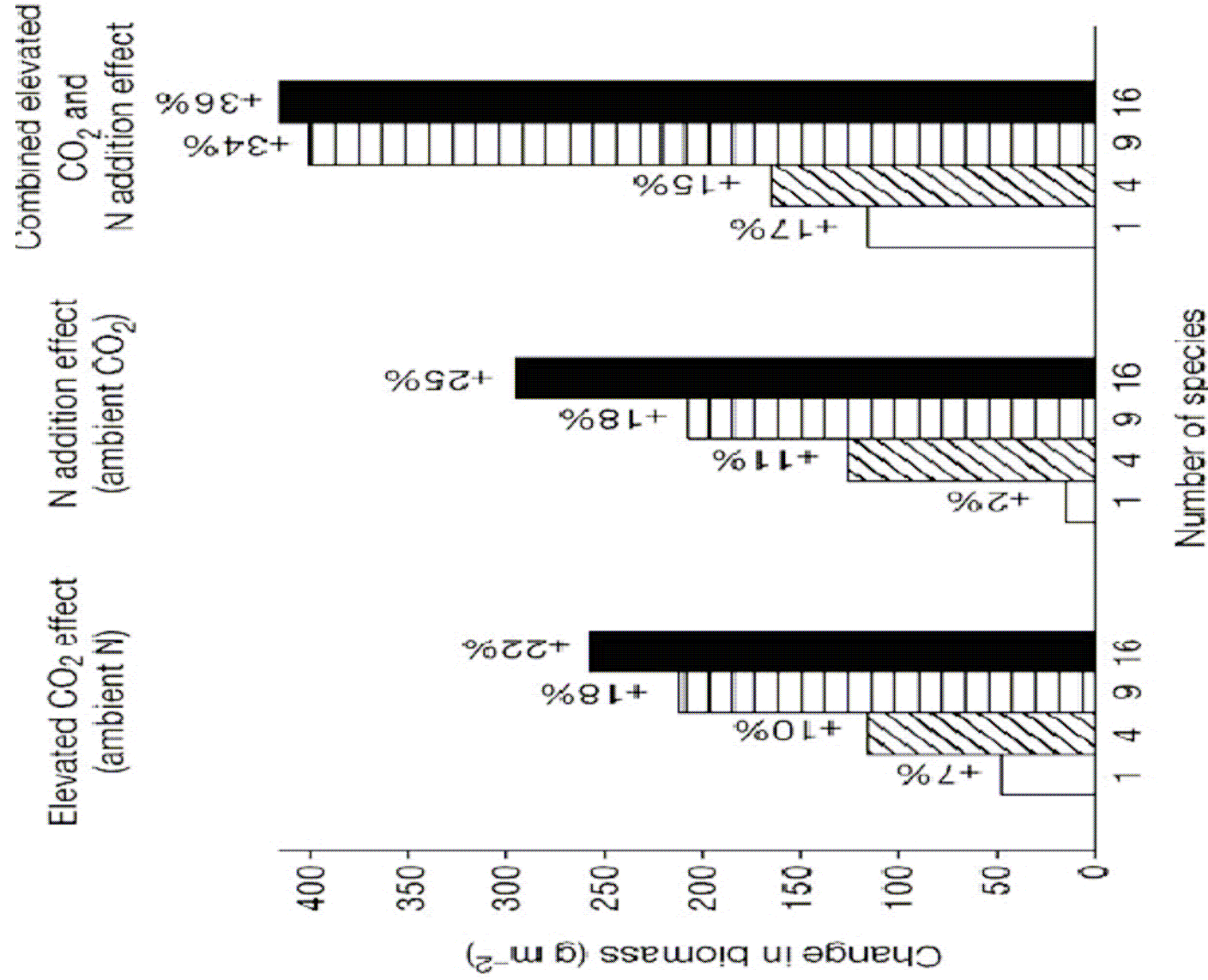
### Impact of Diversity on Sensitivity of Primary Productivity to Climate Change





# Plant diversity enhances ecosystem responses

(CEH, 2005)





## Decision Making - Challenges

- ⌚ Scientific data on economic and social benefits of ecosystem services are scarce and scale useful for decision making is still small**
- ⌚ Beneficiaries of ecosystem services depending on natural capital are a different constituency from those who would benefit from liquidation of the capital**
- ⌚ Markets typically reward short term term values of natural resources underestimating or not capturing the real value**



# **Ecosystem Services and Markets**



- More than 300 markets for ecosystem services have been inventorised
- Several hundred models exist, there is no single standard
- Location and approach specific
- Sources of finance – public and private
- Several trading platform available



# Estimates of Market Size – GHG trading

<b>Source</b>	<b>Projections of Size of GHG trading market</b>
World Bank	\$ 10 billion by 2005
US Council for foreign relations	\$2.3 trillions trade completed by 2012
Energy policy Journal	\$ 24-37 billions trade completed annually during 2008-2012
Resource and Energy Economies	\$ 46.6 billions annually
The Economist	\$ 60 billion-1 trillion annually

(Source: DICE, 2005)



## Some emerging opportunities

- Using REDD

Reduced emissions from  
deforestation in developing countries

- Using arguments such as **considering biodiversity as a global public good**



# Issue of payments: options

- Payment for Ecosystem Services
- Payment for reducing threat and alternate management practices
- Payment for investments (direct and indirect)
- Payment for compensation





# Pro-poor PES

## **OPPORTUNITIES**

- The world needs a new urban-rural compact
- The map of rural poverty overlaps with the map of rural biodiversity
- In many cases the poor are actually the de facto stewards of the environment
- In many cases nature is the poor's main asset

## **OBSTACLES**

- Fears that the poor will lose more as buyers than they may gain as sellers
- Conservation is usually nature-intensive, seldom labor-intensive
- The poor may lack the property rights, know-how and capital
- High transaction costs
- Non-supportive regulations



# Need for new Economics!

- Valuation of ecosystem system goods and services – available
- Including them into economic policies – extremely weak
- Translating them into useful indicators for development – almost non-existent



# Nature and Economy

*World Bank view of Macroeconomic History* – based on traditional way of measuring per capita which is the final value of goods produced by a countries residents in a given year

Indicator	Rich countries	Poor countries <b>(biomass based economies)</b>
Population	1.0 b	2.3 b
GDP per capita	\$30,000	\$2,100
HDI	High	Low
Rural population	20%	70%
Agriculture's share in GDP	5%	25%
Annual growth rate (per capita 1966-2004)	2.4%	1.8%



## The Progress of Nations – considering **Nature as a capital asset** **in production activities** (% annual growth rate 1970-2000)

Source: Dasgupta P 2006

Country/Region	Population (per head)	Total Factor Productivity	Productive base	GDP (per head)	HDI (change between 1970-200)	
Sub-saharan Africa	2.7	0.1	-2.9	-0.1	+	
Bangladesh	2.2	0.7	0.1	1.9	+	
India	2.0	0.6	0.4	3.0	+	
United Kingdom	0.2	0.7	2.4	2.2	+	
USA	1.1	0.2	1.0	2.0	+	



## Nature as a capital asset

- Natural capital is of direct use in consumption, of indirect use as inputs into production, or of use in both
- The values are derived from its usefulness as well as its non-use value
- Interpreting natural capital in an inclusive way allows us to add ecosystems to our list of capital assets.
- Natural capital can be introduced into both micro and macro economic reasoning.
- Raising per capita consumption provides global community with a reason for discounting future consumption benefits at a positive rate, but declining per capita consumption would provide a reason for discounting future consumption benefits at a negative rate.



## Nature as a capital asset

- For economic reasoning – if natural resources are getting scarce, their prices would have risen – signalling something was wrong.
- But, if prices are to reveal scarcities, markets must function well.
  - Unfortunately for many natural resources, markets not only do not function well, they do not even exist.



# Assessment and Monitoring Systems for Sustainable Development – Key Weaknesses

- UNDP – HDI → No explicit link to environmental resources or biodiversity
- World Development Indicators – World Bank → Adjusted Net Savings (ANS) estimates do not include all natural resources (e.g. fisheries and freshwater are not included); ANS estimates are only as dependable as the underlying data sets
- Global Environmental Outlook - UNEP → A descriptive approach, relying on available data; Weak on economic links
- The Living Planet Report → Poor/ non-existent connections to human welfare and economic growth (or even improved environmental management)



# Conceptual Issues





## Essential Components for Ecosystem Services Market Growth

Public Payment Schemes

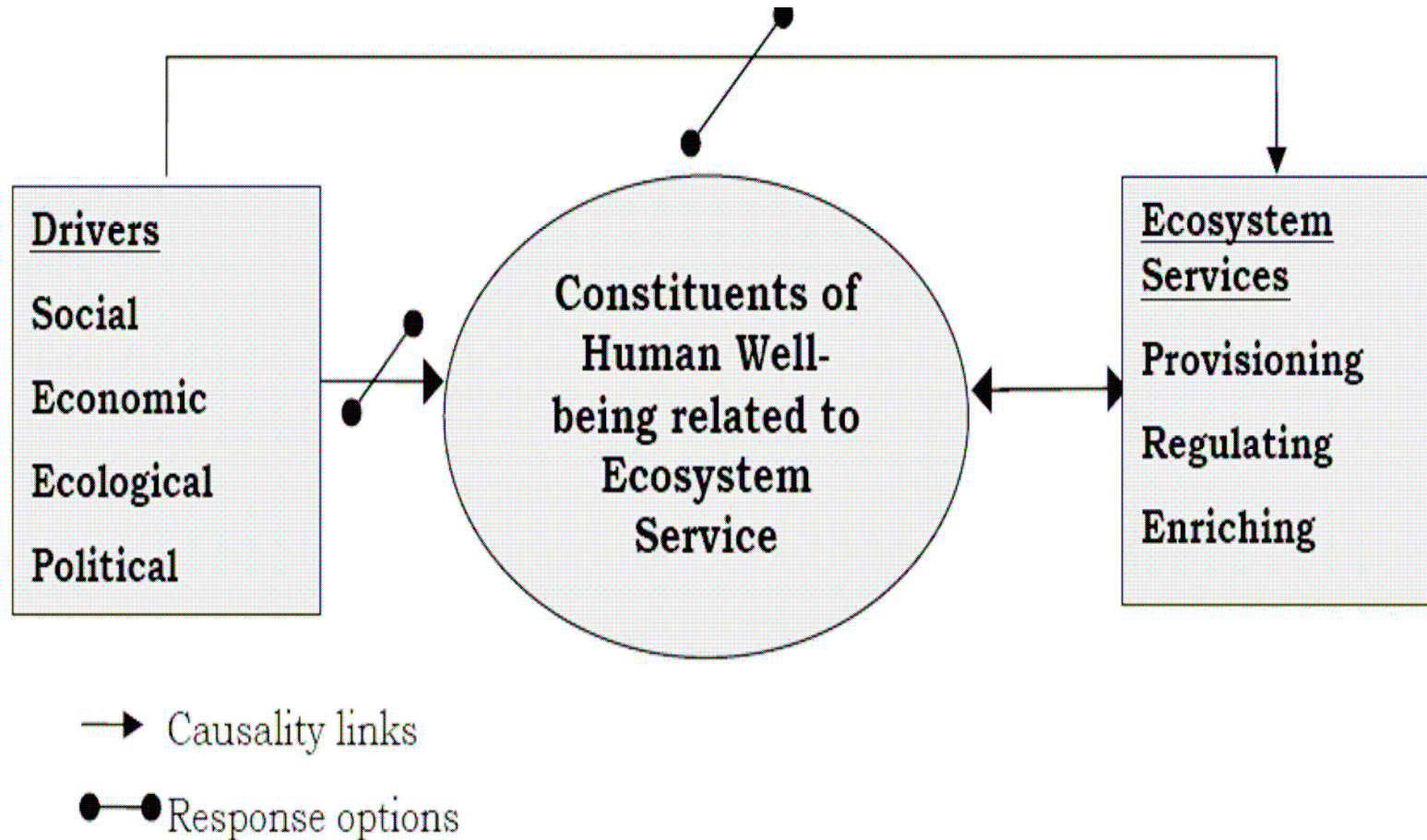
Open Trading

Self-Organized Private Deals





# Conceptual Framework linking Human Well-being and Ecosystem Services







## **Guiding Principles for Ecosystem Services and Rural Poverty Reduction**

- A: Adopt and use an ecosystem approach
- B: Reduce the 'Resource Curse' focusing on national action with better environmental governance
- C: Assess economic footprints using criteria and indicators to evaluate environmental activity
- D: Develop national and local policies to integrate economic and conservation planning where conservation is not a spin-off but a mainstay
- E: Develop economic policies that take into consideration full values of negative externalities which lead to inefficiency
- F: Focus on equity in addition to efficiency



## Thoughts.....

- **Make policy makers and negotiators understand the role of ecosystem services in contributing to reducing biodiversity loss and reducing poverty**
- **Link processes on setting targets and agendas on biodiversity conservation, including post 2010 issues related to ecosystem services**
- **Make economists re-define GDP and HDI that considers natural resource capital in addition to manufactured capital and human capital.**
- **Discuss welfare economics, development economics, environmental economics in terms of mainstreaming biodiversity and natural resource management**
- **Assess the role of current and emerging opportunities in enhancing means to deal with ecosystem services and poverty reduction**
- **Deal with ecosystem management and poverty reduction using principles and modalities of management science**

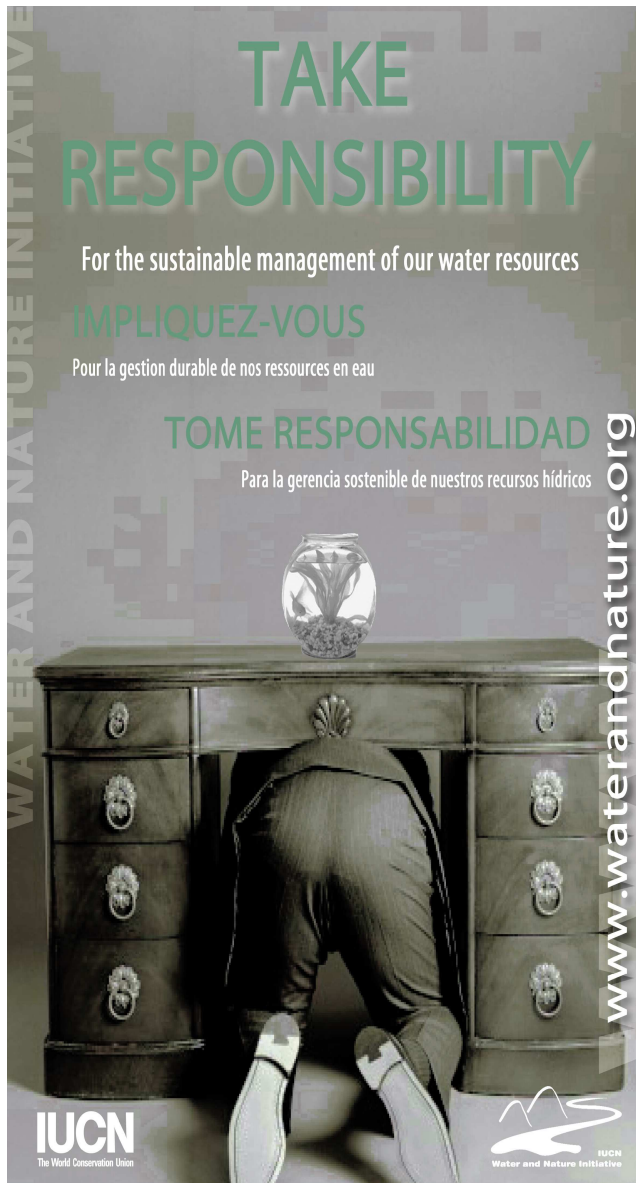


Chinese ideogram for “Crisis”  
comprising characters for “**Threat**”  
and “**Opportunity**”!




# What we should (not) do now!

**TAKE RESPONSIBILITY**  
For the sustainable management of our water resources  
**IMPLIQUEZ-VOUS**  
Pour la gestion durable de nos ressources en eau  
**TOME RESPONSABILIDAD**  
Para la gerencia sostenible de nuestros recursos hídricos

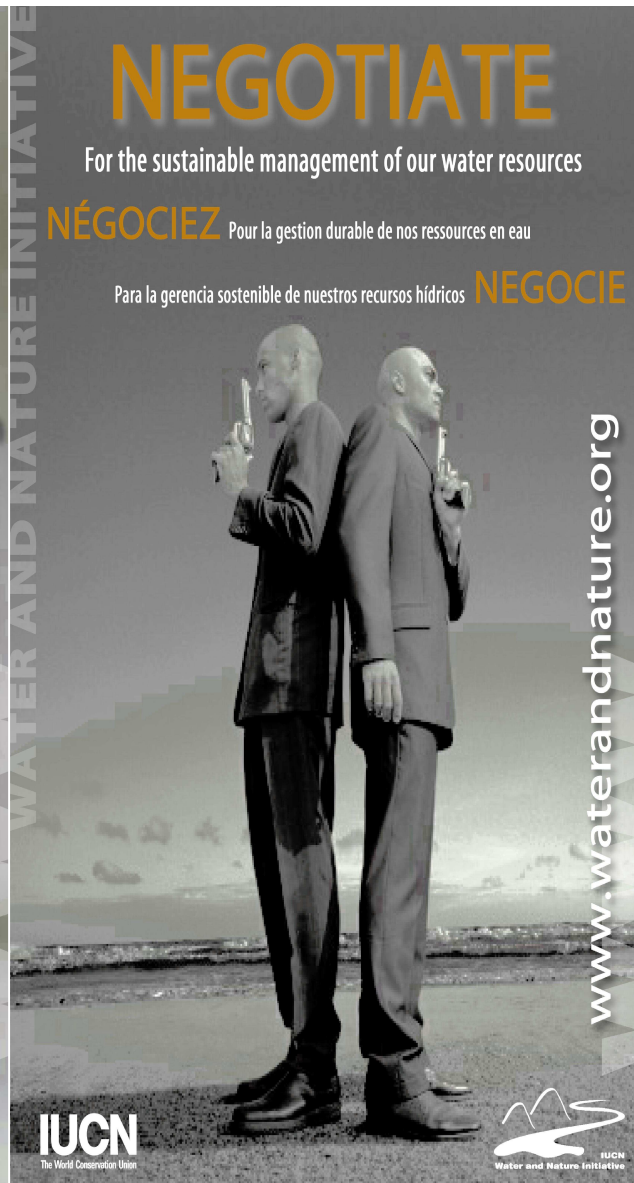


[www.waterandnature.org](http://www.waterandnature.org)

**IUCN**  
The World Conservation Union




**NEGOTIATE**  
For the sustainable management of our water resources  
**NÉGOCIEZ** Pour la gestion durable de nos ressources en eau  
Para la gerencia sostenible de nuestros recursos hídricos **NEGOCIE**



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**ACT NOW**  
For the sustainable management of our water resources  
**AGISSEZ DÈS MANTENANT**  
Pour la gestion durable de nos ressources en eau  
**ACTUE AHORA**  
Para la gerencia sostenible de nuestros recursos hídricos



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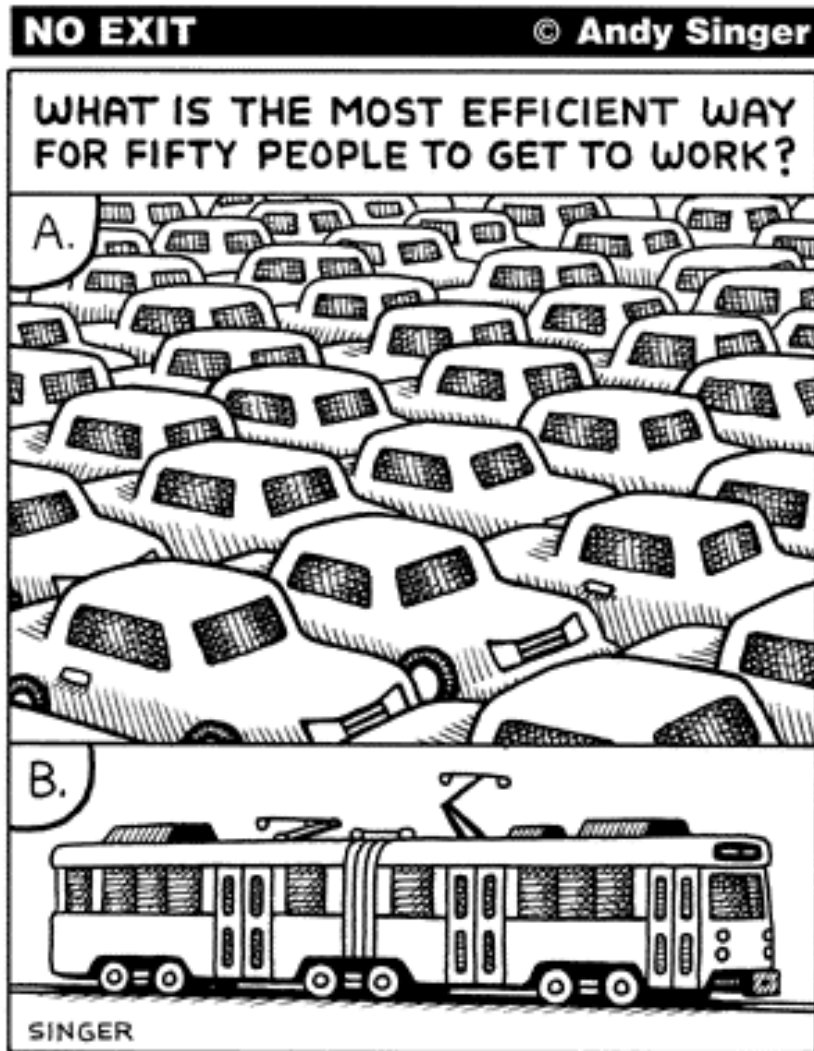


**Thank you!!**





# Responding to changing needs – policy options!



**Social responsibility**

**Economic insight**

**Government Response**

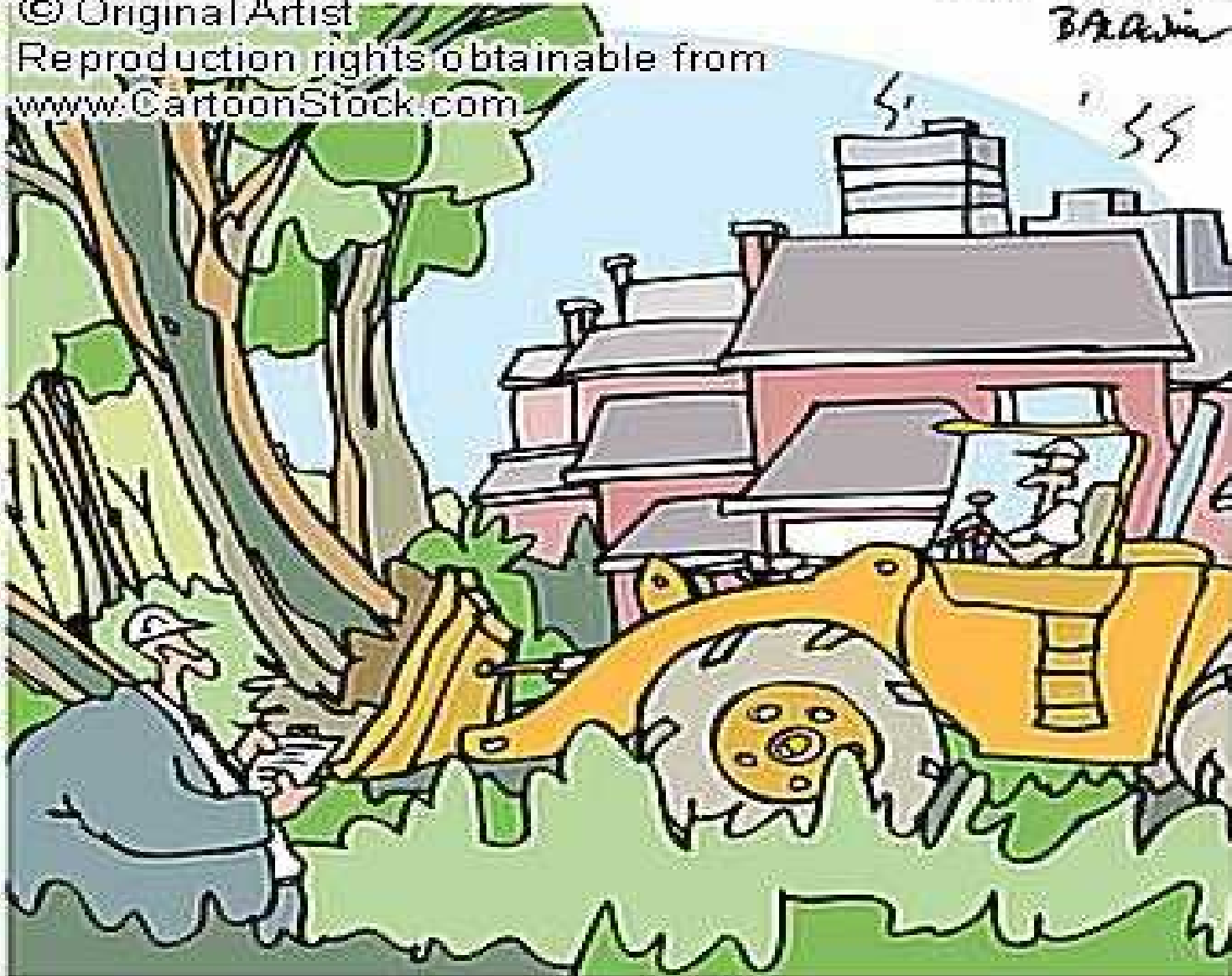
**Sustainability and  
accessibility of  
choices**



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*B. Baldwin*



It was hard to put a price on progress.  
Real hard without a calculator.



## **MEA-based Markets for Ecosystem Services**

**Most developments are outside the frameworks of MEAs except for UNFCCC through the Clean Development Mechanism (CDM)**

**Markets for ecosystem services – such as in carbon, wetlands, water and biodiversity – are emerging in ranges of multi-million dollars.**





Protecting the environment is indeed supported by a large majority — *it's just **not supported very strongly.***

When we use the term 'environment' it makes it seem as if the problem is 'out there' and we need to 'fix it,'

The problem is not external to us but **US**