# The Green Economy Initiative ("GEI")

**Geneva Meeting & Workshop,**
**1st-2nd December 2008**
**Pavan Sukhdev**

- Why do we need a “GEI” ?
- What is “GEI” ?
- on Sectors…
- on Enabling Conditions..
- on Communication…

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- **The Three Canaries in the Mine…**
- **After the canaries…. ?**

# Four questions…

- Can more liquidity and even more credit solve a credit crisis ?
- Can more *production* solve an energy and resources crisis ?
- Can the global economic system manage to recover with just a *"re-boot" ?*
- Can Capitalism survive the next 200 years without a sharp focus on *Natural Capital* ?

# … have One Answer

- “No”

# Two More Questions ….

- What part of “No” don’t we understand ?
- Can the thinking that *created* the problem actually *solve* the problem ?

# EXAMPLE : Applying Old Thinking to New Opportunity

- Five years ago, Solar energy was considered a "commercially feasible" alternative only if crude prices more than doubled, to $ 60-70 / barrel
- In 2008, at $ 100+ crude, the tar sands of Alberta become an investment focus for Energy companies
- Solar PV continued to attract more kudos, more VC.... But still hasn't scaled....

- **Moral of story : “Green Economy” is easier said than done…**

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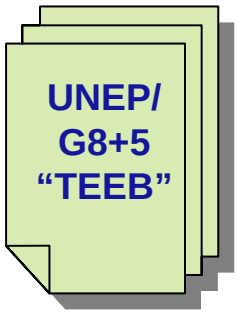
# Dimensions of the "Green Economy" Challenge

- Proving ***"RoI"*** competitiveness
- Demonstrating green economic ***growth***
- Demonstrating net ***employment*** dynamic
- Showing how to solve (not exacerbate) the persistence of ***poverty***
- ***Communicating*** "all of the above"
- Addressing ***Enabling Conditions*** for Greening
- Addressing ***Inertia*** among Policy-makers, Businesses, Consumers…

- **UNEP's GEI must tackle all these…**

# A family of initiatives…




1

## Green Economy Project

Demonstrating that Greening is a New engine for growth, sizing sectoral opportunities, addressing hurdles & enabling conditions

2

## Poverty Environment Initiative

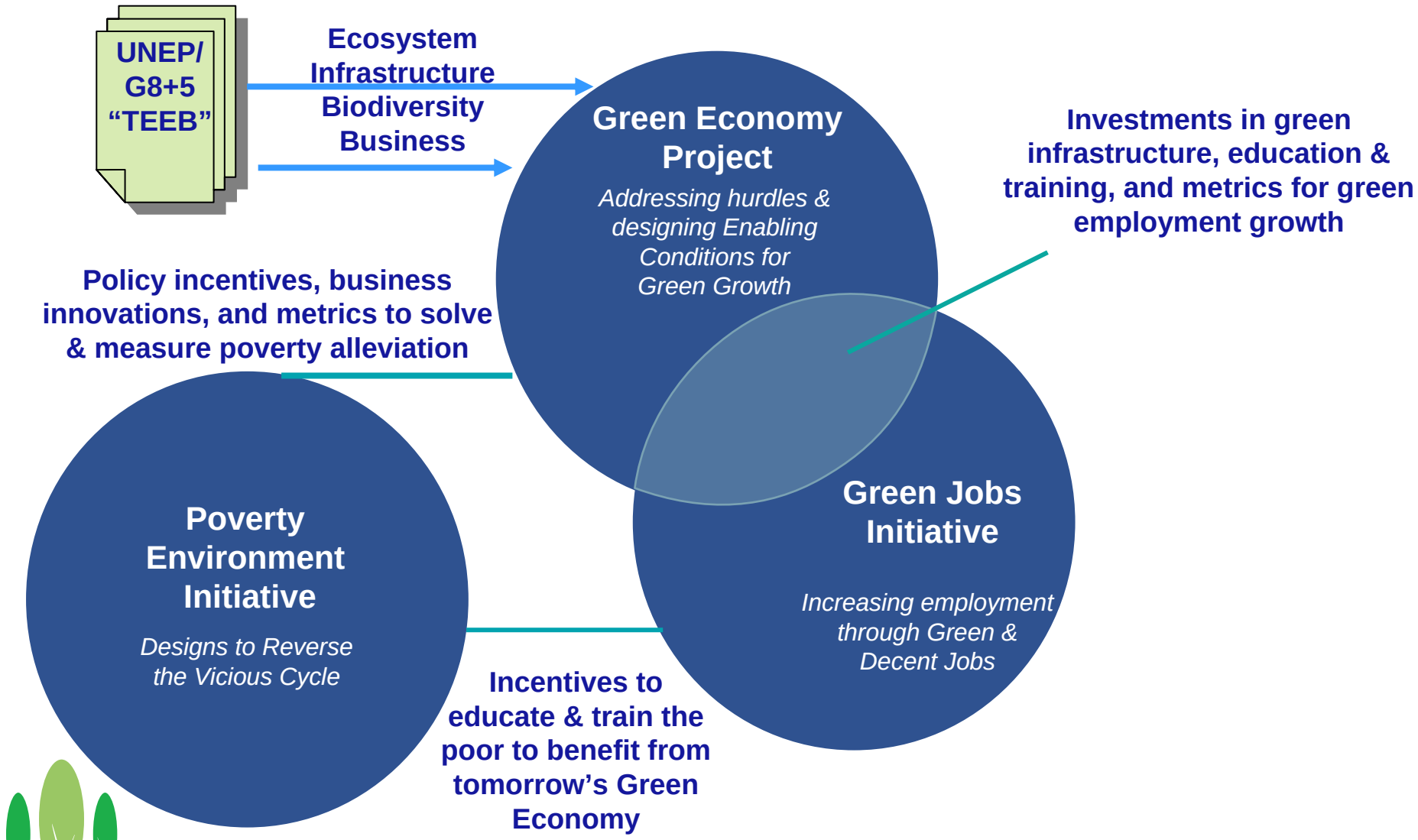
Demonstrating and reversing the Vicious Cycle of environmental losses and persistent poverty

3

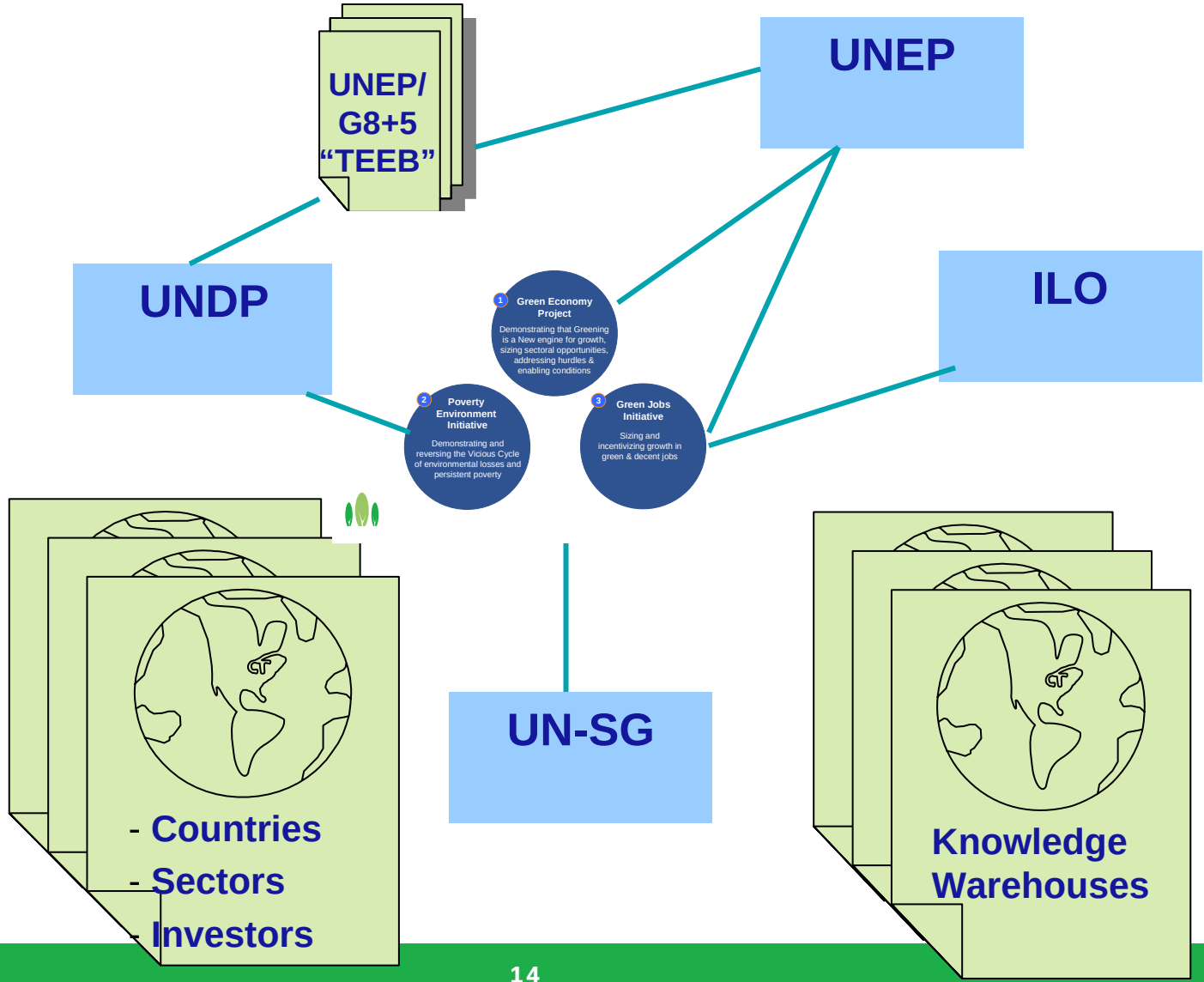
## Green Jobs Initiative

Sizing and incentivizing growth in green & decent jobs

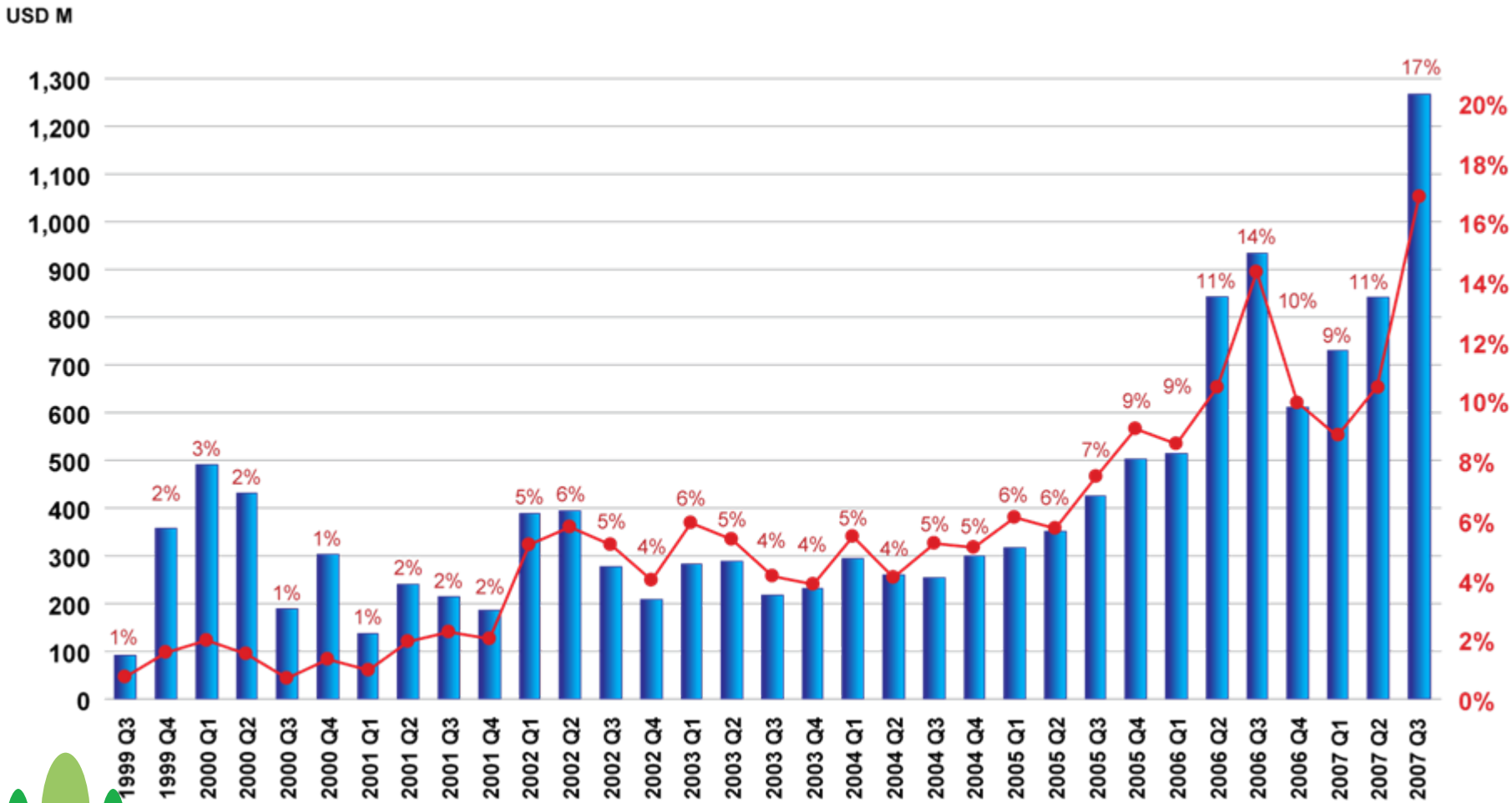
# …..that work together…



# … within an international network of institutions, governments, businesses..



# North American Cleantech Venture Capital Deals by Quarter and as a percentage of total VC (by amount), 1999 – 2007



# GEI & Employment

- **“Where capital flows today, jobs follow tomorrow”**

- **What are the key sectors at risk ? What are the key sectors of opportunity ? And the net change in FTE’s for each ?**

- **How does ‘greening’ impact employment ?**
  - **Elasticity** : what is the functional relationship of greening & employment ?
  - **Induced Jobs :** can the effect on savings & growth also be measured ?
  - **Renewables** : Will these jobs scale from 2.3 million today to 20 million by 2030 ? Do renewables provide 2x – 3x jobs compared to fossil fuels ?
  - **Farming** : What is happening, what will happen, to the 1.3 billion at work ? Is turning farming organic a net increase or decrease in jobs ?
  - **Recycling :** of an estimated 12 million employees globally, 10 million are in China – why ? What prevents opportunity elsewhere ?

- **“Green Jobs Initiative”**

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# Sectors

- Environmental Infrastructure / Ecosystems
- Biodiversity-based businesses
- Renewable Energy
- Clean Tech : Materials & Energy Efficiency
- Waste Management & Mitigation
- Sustainable Cities : Planning, Building, Transport

***Sectoral Overlaps Unavoidable***

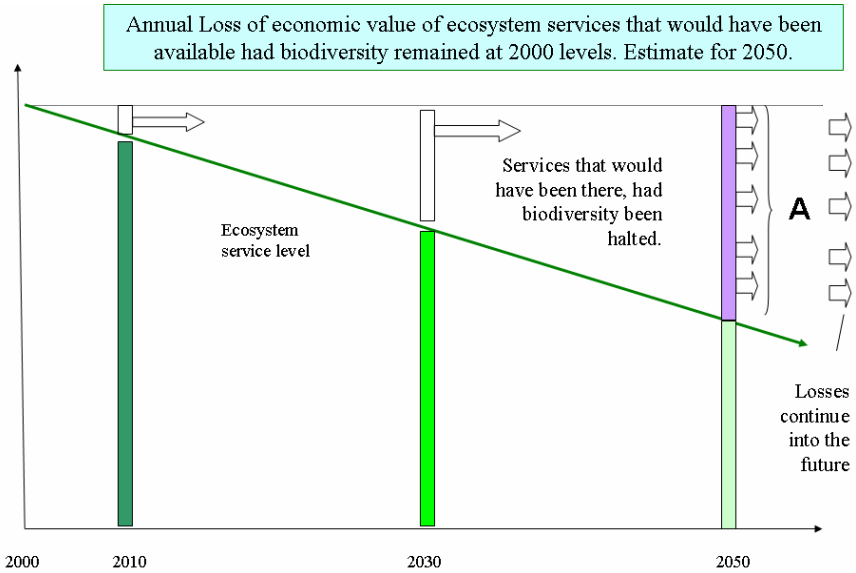
**(eg) Waste to Energy**

- Depolymerization
- Landfill $CH_4$ capture
- Agri-waste / Biofuel

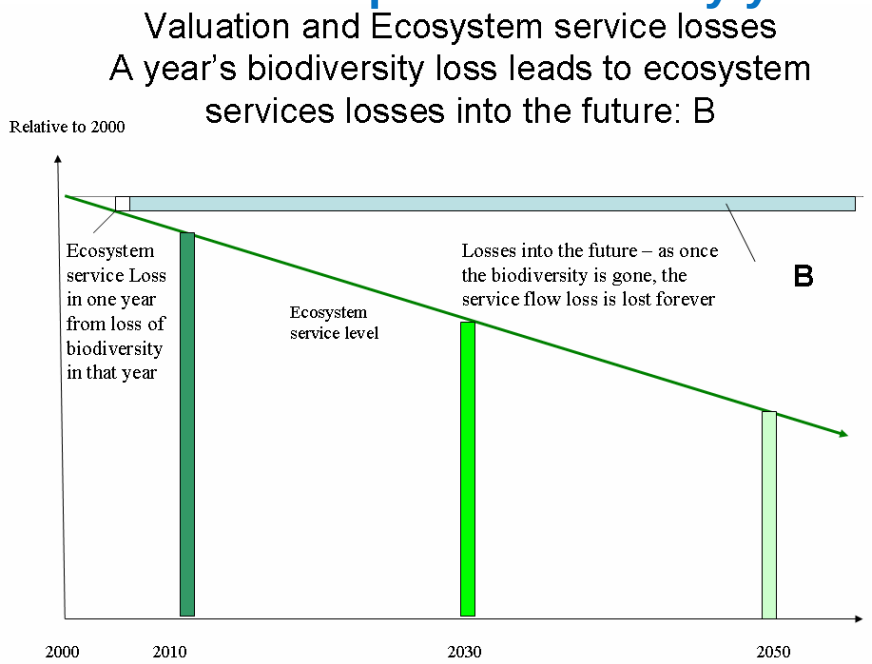
Demonstrating the role of ***Environmental Infrastructure*** in economic development

# The Size of "BAU" Losses is the Size of the Opportunity !

## A : 50-year impact of inaction




## B : Natural Capital Loss every year




**Lost Welfare equivalent to 6 % of GDP… or…**

**Natural Capital Lost from EUR 1.35 x $10^{12}$ to 3.10 x $10^{12}$**
**(@ 4% Discount Rate) (@ 1% Discount Rate)**

**Source : Natural Capital Losses - Forest Biomes (COPI study, May 2008, TEEB)**

# "PA Conservation" as a New Sector of the Economy ??

| Measures / Sectors | Revenues (USD Bio) | Capital Employed (USD Bio) | People Employed |
|---|---|---|---|
| Automobiles[4] | $ 1,882 Bio | $2,217 Bio | 4.4 Mio |
| Steel[4] | $ 530 Bio | $ 588 Bio | 4.5 Mio |
| IT Services & Software[4] | $ 942 Bio | $ 179 Bio | 5.7 Mio |
| Protected Area Conservation | $ 4,500 Bio[1] | $ 125,000 Bio[2] | 1.5 Mio[3] |

1. Balmford et al, 2002, "Economic Reasons for Conserving Wild Nature", Science 297, estimates Protected Areas could produce goods and services valued at between $ 4,400 billion - $ 5,200 billion per annum
2. Natural Capital : Present Value (PV) of a constant service annuity of $ 5,000 billion per annum, discounted @ 4% per annum
3. Estimate of the number employed directly in the maintenance, protection, and oversight of Protected Areas globally
4. Global Business Sector estimates from Global Markets Centre ("GMC"), Deutsche Bank

# Rewarding Unrecognized Benefits

- **Panama Canal** : Insurance firms and shipping companies are financing a 25-year project to reforest the water catchment of the canal to restore freshwater flow to its locks… the fear of loss due to closures of the Canal had been making shipping insurance premiums mount

- **Costa Rican PES :** Payments for Environmental Services are virtually a national strategy for forest and biodiversity conservation and sustainable development

- **Guyana :** A Private Equity firm recently bought the rights to environmental services from a 370,000 hectare rainforest reserve in Guyana anticipating that its services (water storage, biodiversity maintenance, rainfall regulation, etc) will gain value. Revenues will be shared 80% with the local community.

***These are just a selection of the many examples we encountered …***

Source : TEEB, Interim Report, May 2008

# Rewading Unrecognized Benefits…
# New Markets have a role…

**Wetland Banking :** In the U.S., companies or individuals can buy environmental credits from Wetland Mitigation Banks to pay for degradation of wetland ecosystems due to agriculture or development activities. More than 400 banks had been approved by September 2005, almost three quarters of them sponsored by private entities. The total market is over $ 3 billion.

**Endangered Species Credits :** A biodiversity cap-and-trade system in the U.S. has created 'endangered species credits', which can be used to offset a company's negative impacts on threatened species and their habitats. The market volume as of May 2005 was over US$40 million, with 930 transactions carried out and more than 44,600 ha of endangered species habitat protected.

**BioBanking :** In 2006, Australia began a pilot project in New South Wales called BioBanking to create incentives for protecting private land with high ecological value. Developers buy "biodiversity credits" to offset negative impacts on biodiversity. These credits can be created by enhancing and permanently protecting land.

**…. but to succeed, they need institutional infrastructure, incentives, financing and careful governance : in short, Investment**

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# Tackling ***perverse subsidies***

**Global agricultural subsidies**

***>US$ 300 bn/yr***

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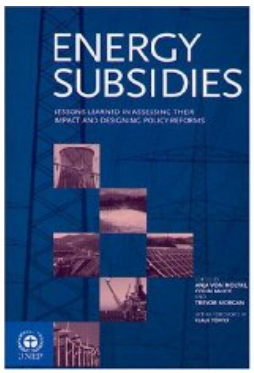
**Lack of $$$ for *reforestation***



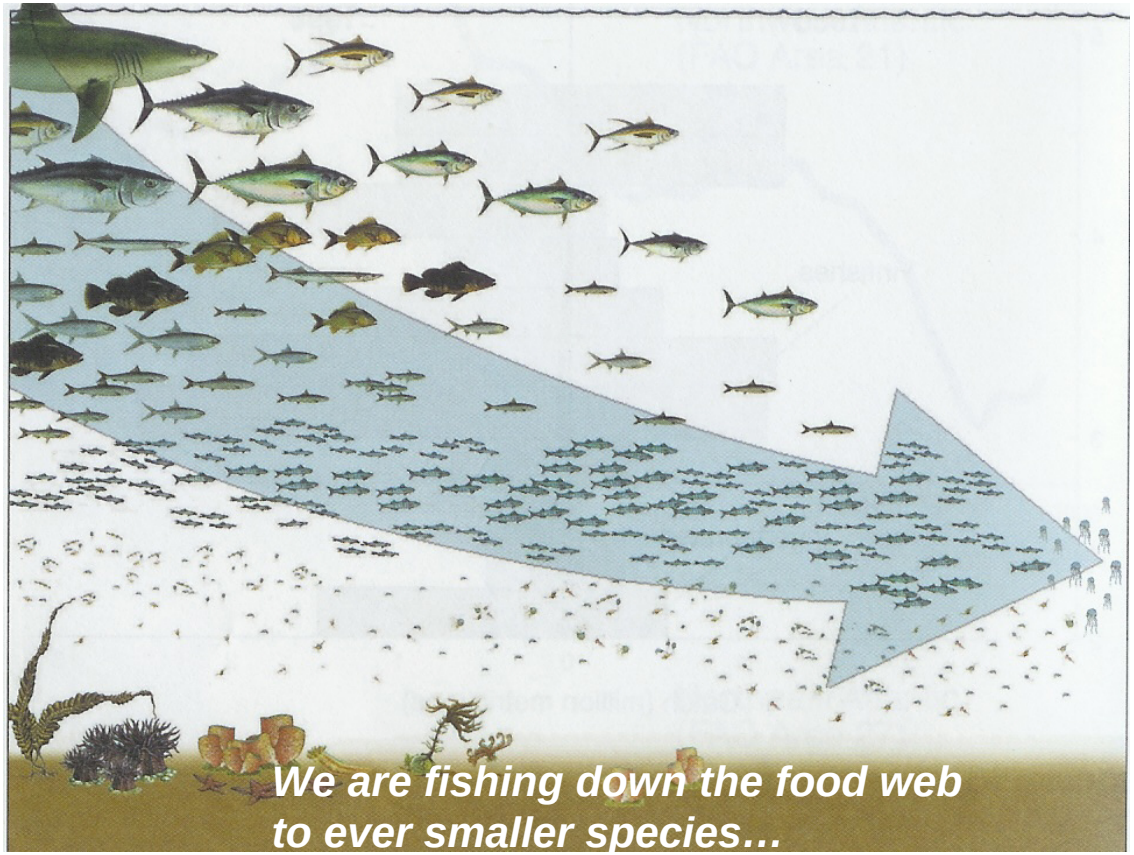

**Global energy subsidies**

***=US$ 240-310 bn/yr***

⟺

**Lack of support for *renewable energy***

# Example : Humanity‘s Exposure to The Loss of Global Fisheries

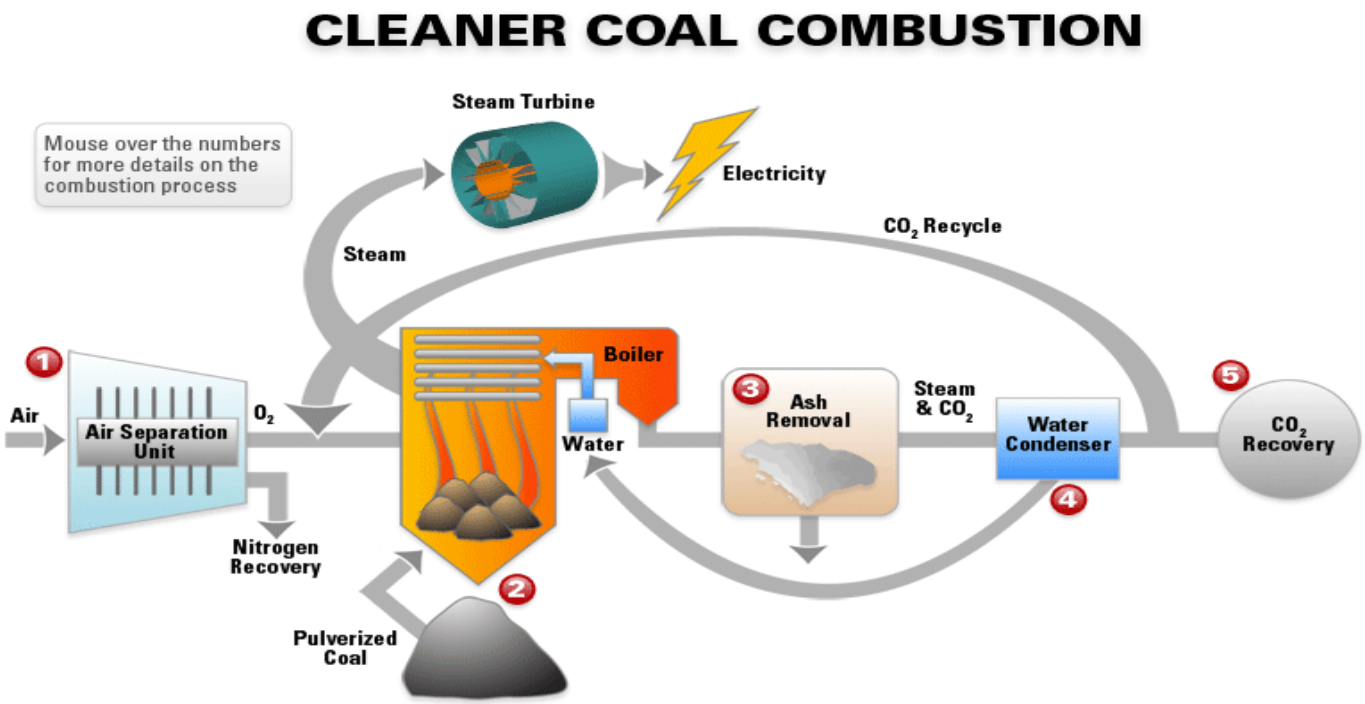



- ❑ **Open Access & Perverse Subsidies are key drivers of the loss of fisheries**
- ❑ **Half of wild marine fisheries are fully exploited, with a further quarter already over-exploited**
- ❑ ***at risk : $ 80-100 billion income from the sector***
- ❑ ***at risk : est. 27 million jobs***
- ❑ ***but most important of all…..***

***at risk : Health … over a billion rely on fish as their main or sole source of animal protein, especially in developing countries.***

*Source: Ben ten Brink (MNP)* presentation at the Workshop: ***The Economics of the Global Loss of Biological Diversity 5-6 March 2008, Brussels, Belgium. Original source: Pauly***

# Identifying ***funding needs and sources***



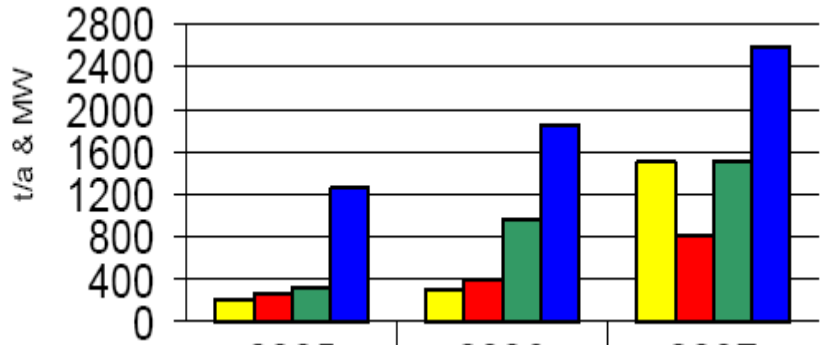

- **Funding needs:**
  - ***About US$560 bi. to build IGCC in India and China.(Barry Worthington,2006)***
- **Funding sources:**
  - ***Public- Private Partnership***

# Proposing reforms of ***policies and institutions***

## Renewable Energy Policy - China

- **2006 --Renewable Energy Law**
- **2007 --Mid and long-term RE dev.plan till 2020,which would triger $270 billion investment;**
- **Financial Incentives:**
  - Subsidies:
  - Tax incentives: Reducing the VAT on wind power to 8.5% (previously 17%) in 2001;
  - Customs duties: bio-energy equipment, such as power generators for biogas, is classified as high-tech and is exempt from customs duty.

PV Industry Development 2005-2007




| | 2005 | 2006 | 2007 |
|---|---|---|---|
| Silicon t/a | 200 | 300 | 1500 |
| Wafer (MW) | 260 | 400 | 800 |
| Cells (MW) | 320 | 960 | 1500 |
| Modules (MW) | 1250 | 1850 | 2580 |

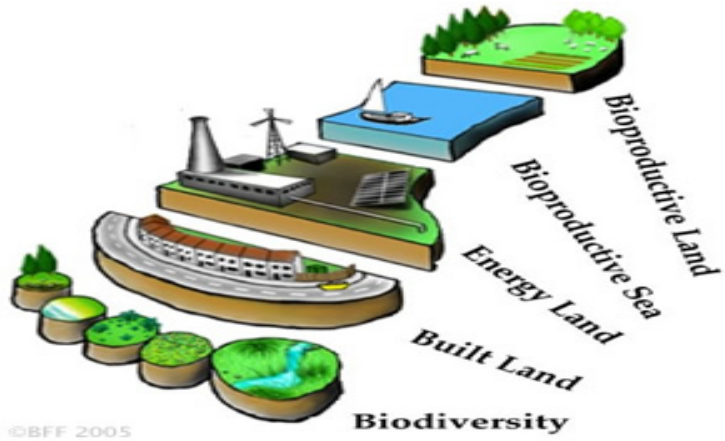
Source: ENF Study 2006; personal research and interviews.

# Addressing ***entry barriers***

WATER IQ SM

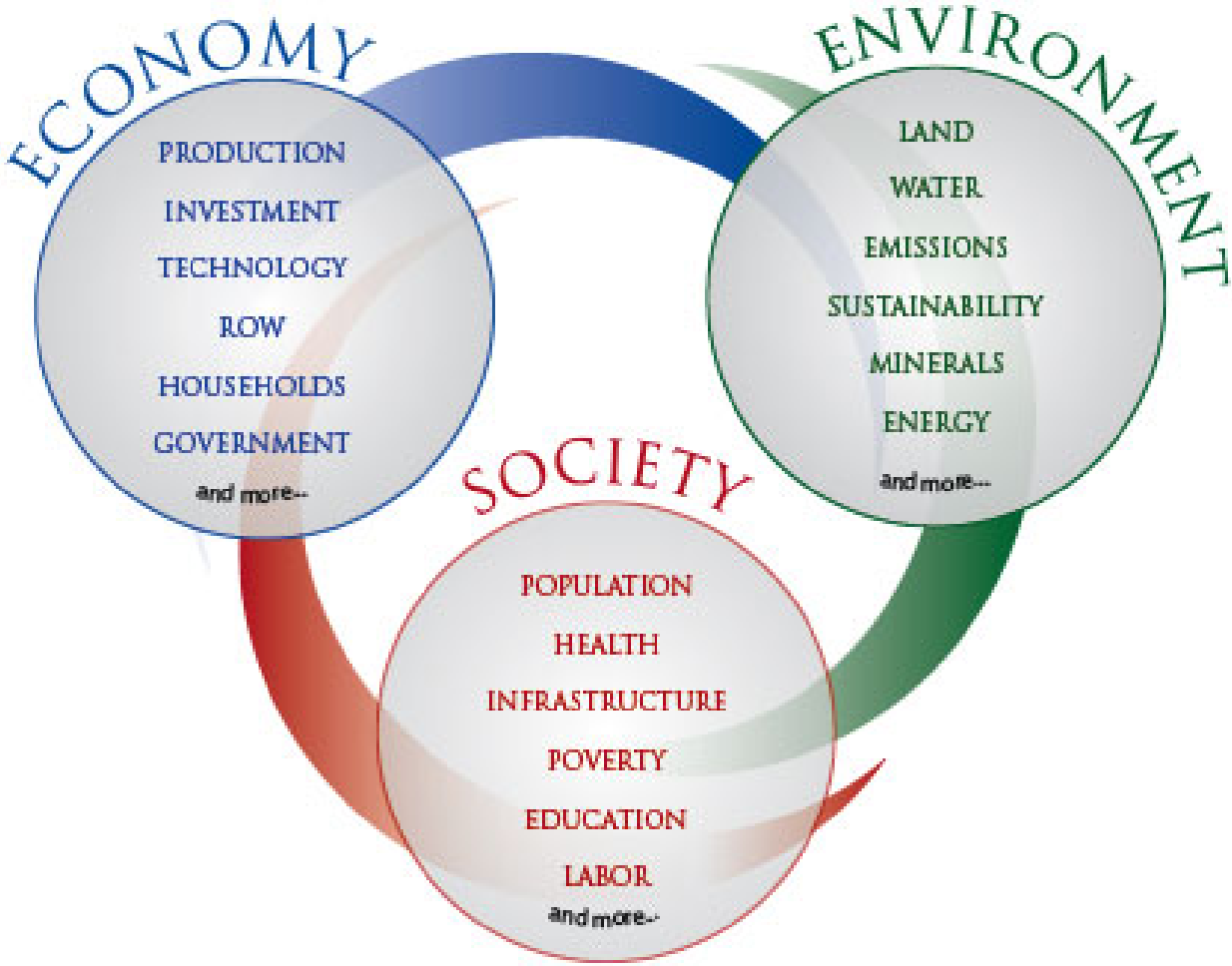
Know your water.

- **Natinal issue-based educational campaign**



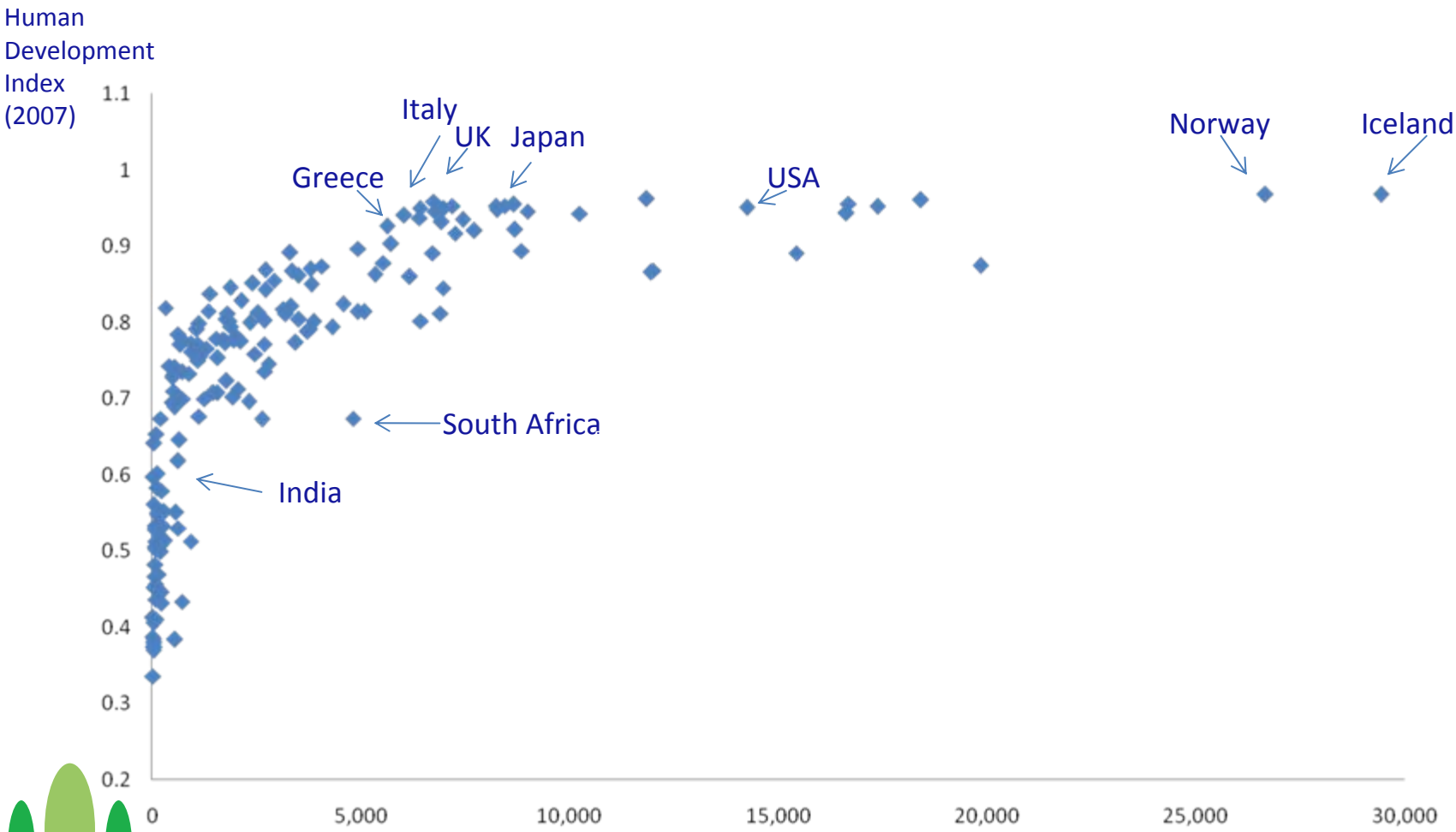

- **Ecological footprint disclosure**

# Providing an **integrated policymaking framework**

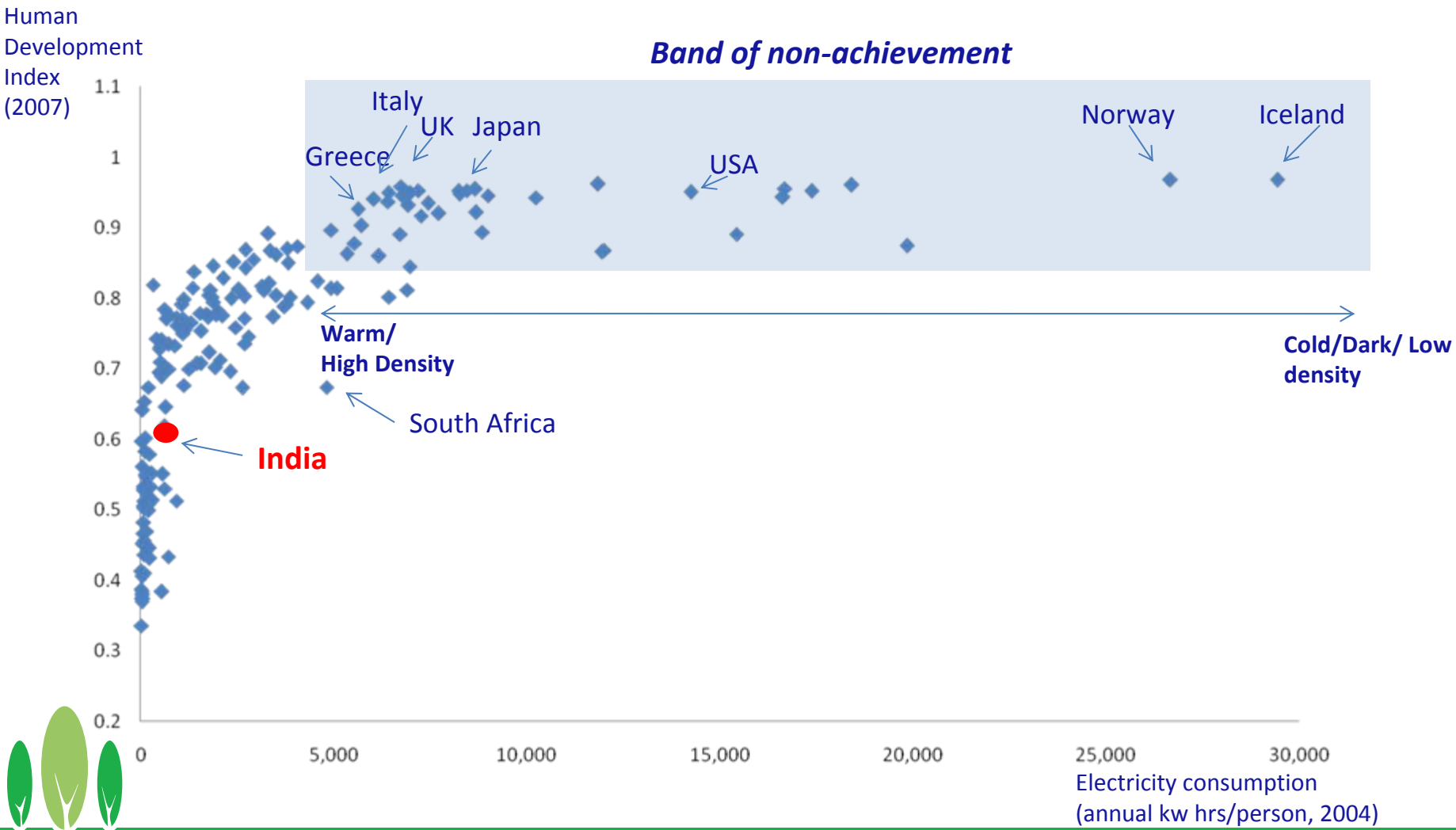



http://www.millenniuminstitute.net/integrated_planning/tools/T21/T21_sf.html

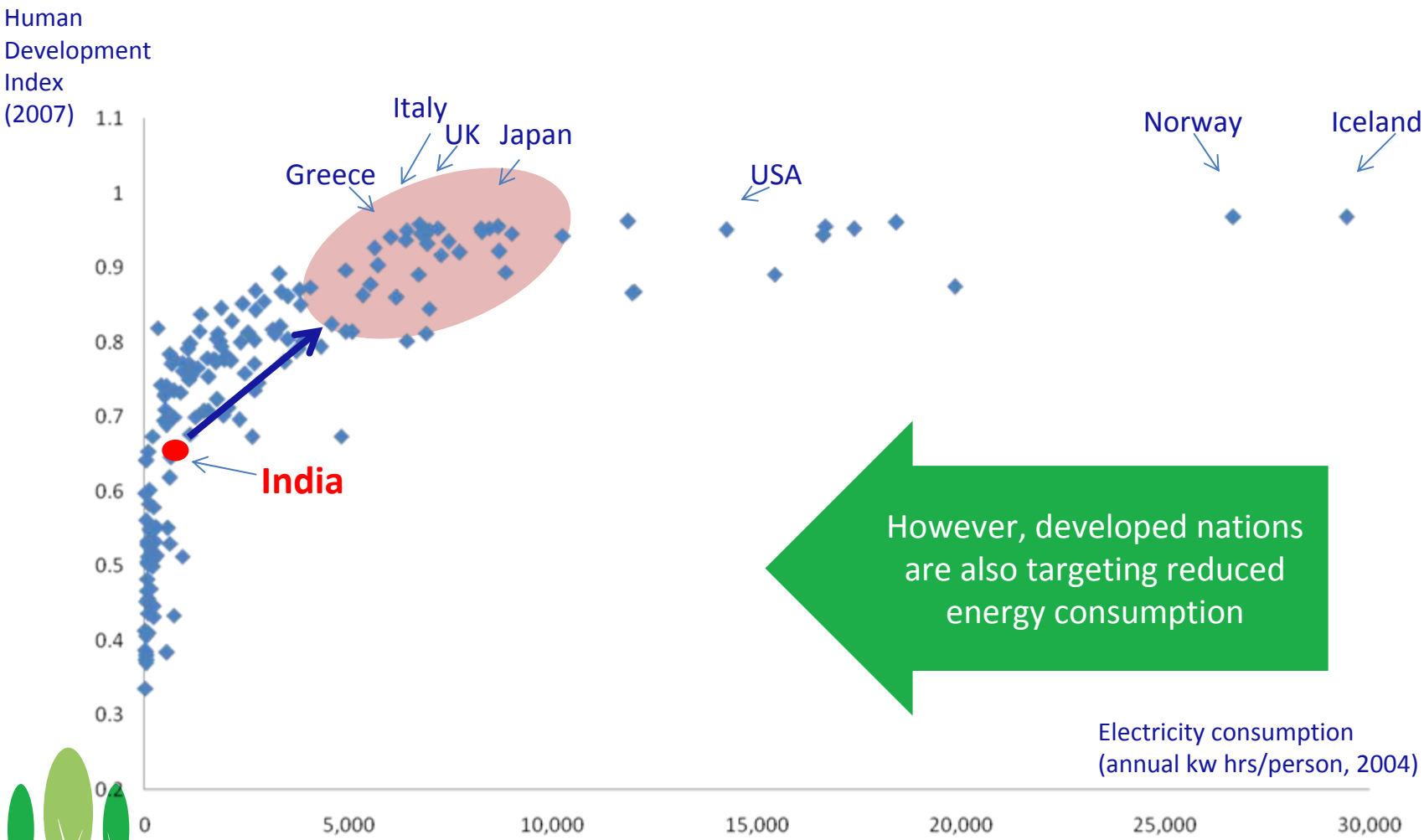
# Example : Global Trade & Renewables (Evaluating electricity usage for a developed future )



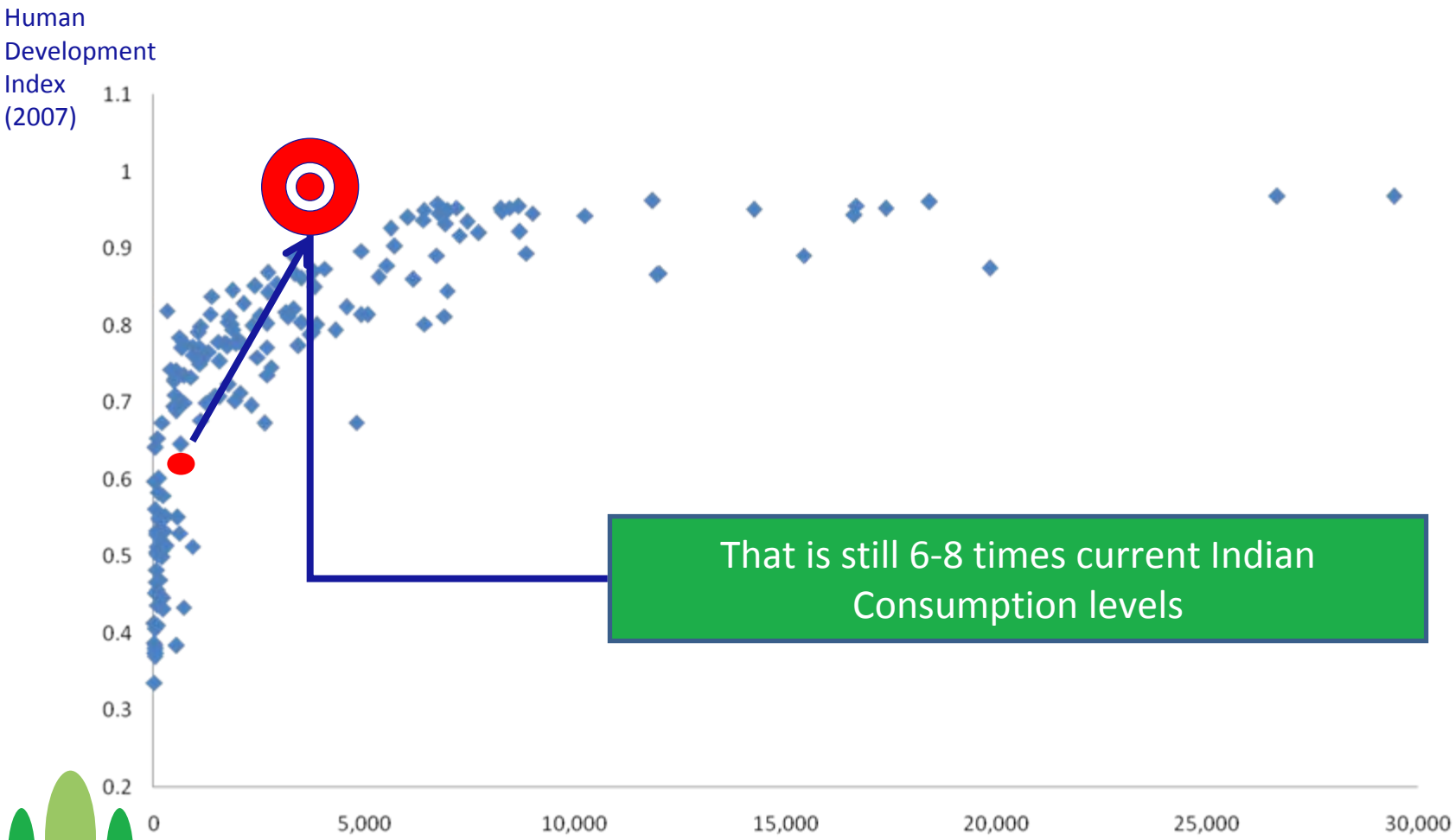
# Beyond a certain level, energy usage does not correlate with further development



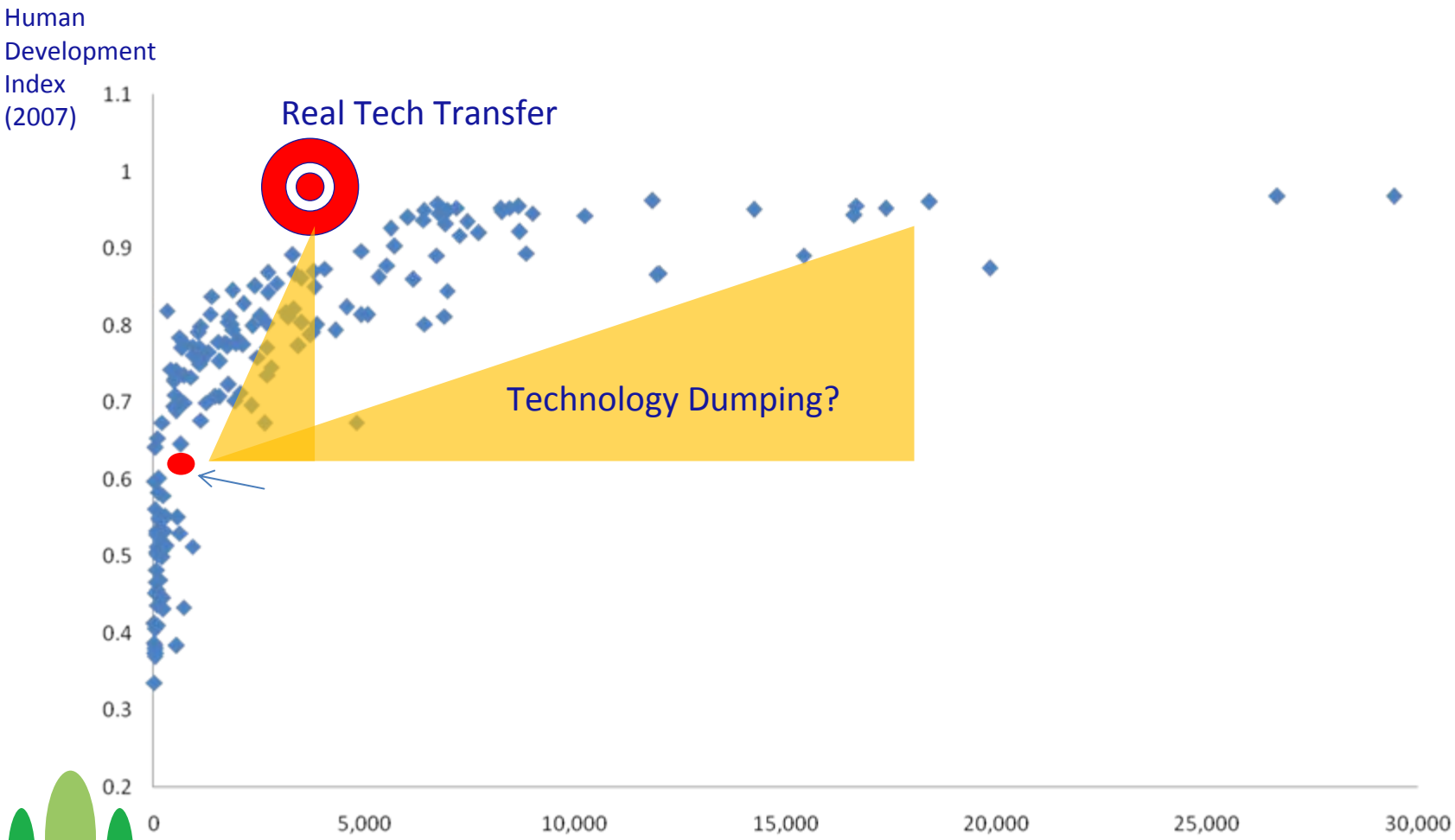
# A static target might be towards existing temperate / high density developed nations



# A dynamic target could be in the range of 3000-5000 KW hrs per person



# Tech transfer needs to get developing nations to sustainable targets, not to current developed status quo



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# Object & Image : A new engine for Economic Growth

# Question : Does GEI's Message need a Film ?

- Climate Change action has been "anchored" on public awareness ...built by Al Gore's "Inconvenient Truth"

- Biodiversity Loss & Ecosystem Degradation may soon (June 5th) have a visual anchor : "HOME"

- How does one overcome inertia, inspire confidence, and communicate that "Green is Good" ?

# Workshop's Aims....

- Explain GEI's Agenda
- Initiate GEI's Sectoral Expertise Groups
- Debate, Draft, Discuss Report Wireframes
- Lay foundations for GEI 'Open Architecture'
- Begin friendships for GEI 'Partner Groups'

# Workshop's Participants…

# Thank You !