

South Asian Green Economy: a perspective

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The concept in the international domain

- Five paradigms of development (Colby, 1991): frontier economics, deep ecology, environmental protection, resource management, and eco-development
- Renewed emergence in the international development sphere eg; MEA, 2006; Stern, 2006; IPCC, 2007; TEEB, 2010; UNEP, 2011
- Rio+20 – Green Economy discussed in the context of sustainable development and poverty eradication, but largely silent on operational issues
- *“We emphasize that it [i.e., Green Economy] should contribute to eradicating poverty as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth’s ecosystems” (The Future We Want, paragraph 56, p 10).*

Green growth as articulated in Indian policy

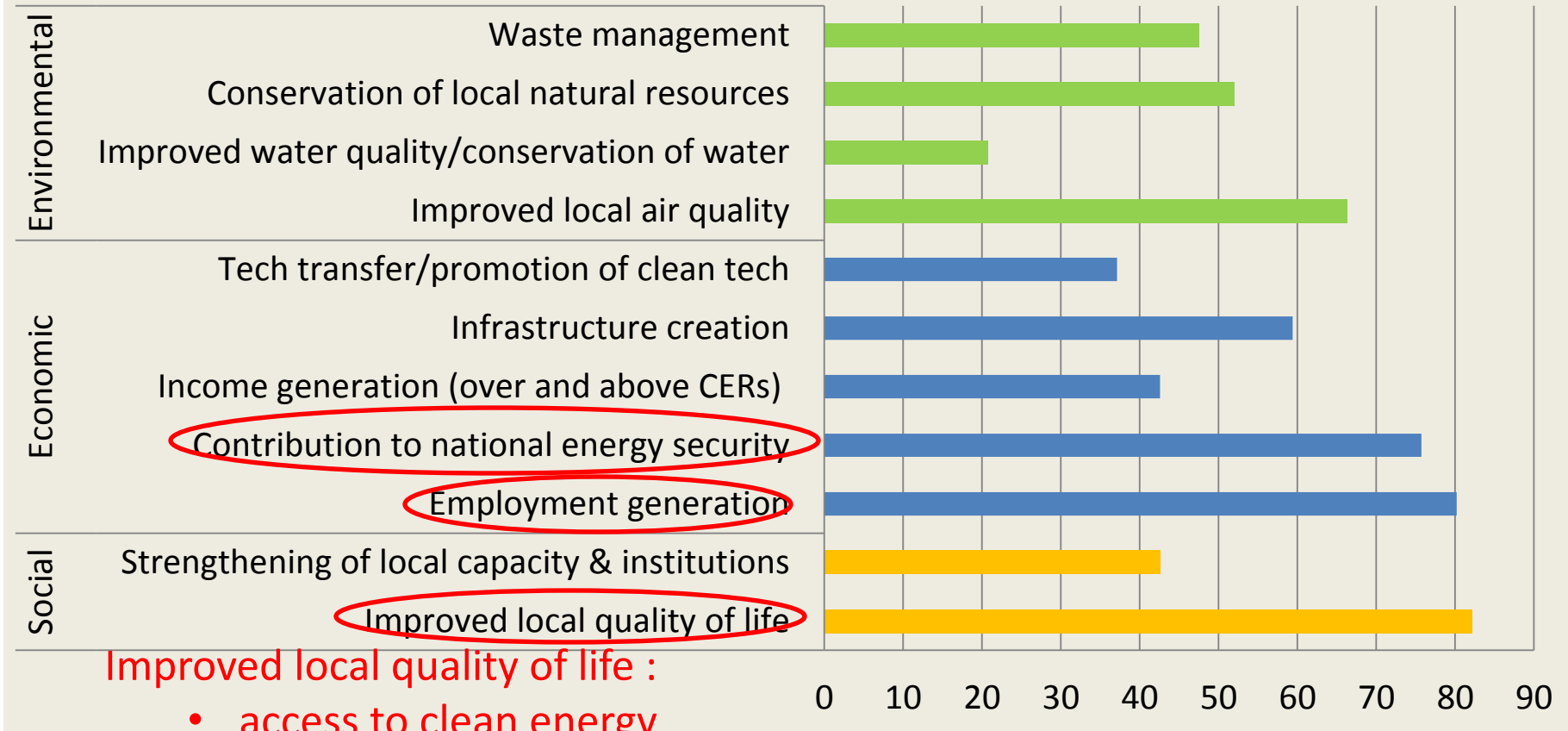
“Green growth involves rethinking growth strategies with regard to their impact(s) on environmental sustainability and the environmental resources available to poor and vulnerable groups.” (para 3.15, Thirteenth Finance Commission Report)



The operational understanding: case of CDM and its contribution to SD (TERI, 2012)

- CDM policy dialogue study: analysis of PDDs of 202 projects
 - 96 % mentioned economic benefits
 - 86% mentioned social benefits
 - 74% mentioned environmental benefits

Percentage of PDDs mentioning various indicators



Improved local quality of life :

- access to clean energy
- sustainable mobility
- better shelter
- food security
- access to drinking water
- improved sanitation
- targeted support to women folk of the region

Relevance to South Asia: addressing the three major challenges to SD

- Promoting inclusiveness
- Managing the urban transition
- Building resilience

Development and exclusion in South Asia: focus on energy

Country/Region	Total Ecological Footprint (global hectares per person):	Internal Water Footprint of Consumption (m3 per person per year):	Per capita CO2 emission (metric tonne)	Per capita primary energy consumption (kgoe)
	2005	1997-2000	2007	2008
World	2.7	1600	2.5	1835
High-income countries	6.4	1600	16.5	5130
Middle-income countries	2.2	1600	2.5	1260
Low-income countries	1	1600	0.5	357
Bangladesh	0.6	1600	0.5	..
Bhutan	1	1600	0.5	..
India	0.9	1600	1.5	545
Nepal	0.8	1600	0.5	340
Pakistan	0.8	1600	0.5	499
	0.82	944	0.73	

Development pathways have to promote 'inclusiveness' as the paramount goal

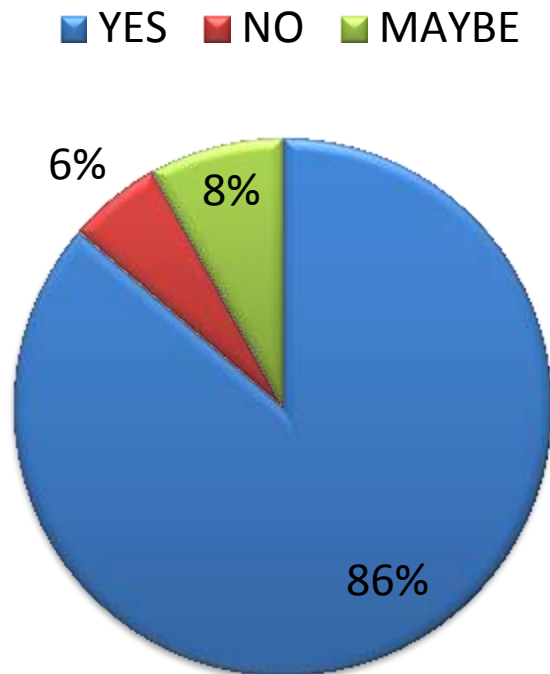
People lacking access to electricity

	Number of people lacking access to electricity (in million)	Number of people relying on traditional use of biomass for cooking (in million)
Africa	587	657
Sub-Saharan Africa	585	653
Developing Asia	675	1937
China	8	423
India	289	855
Other Asia	378	659
Latin America	31	85
Developing Countries*	1314	2679
World	1317	2679

Source: World Energy Outlook 2011

TERI Poll: green and inclusiveness

- Do you think green growth has the potential to promote inclusiveness?

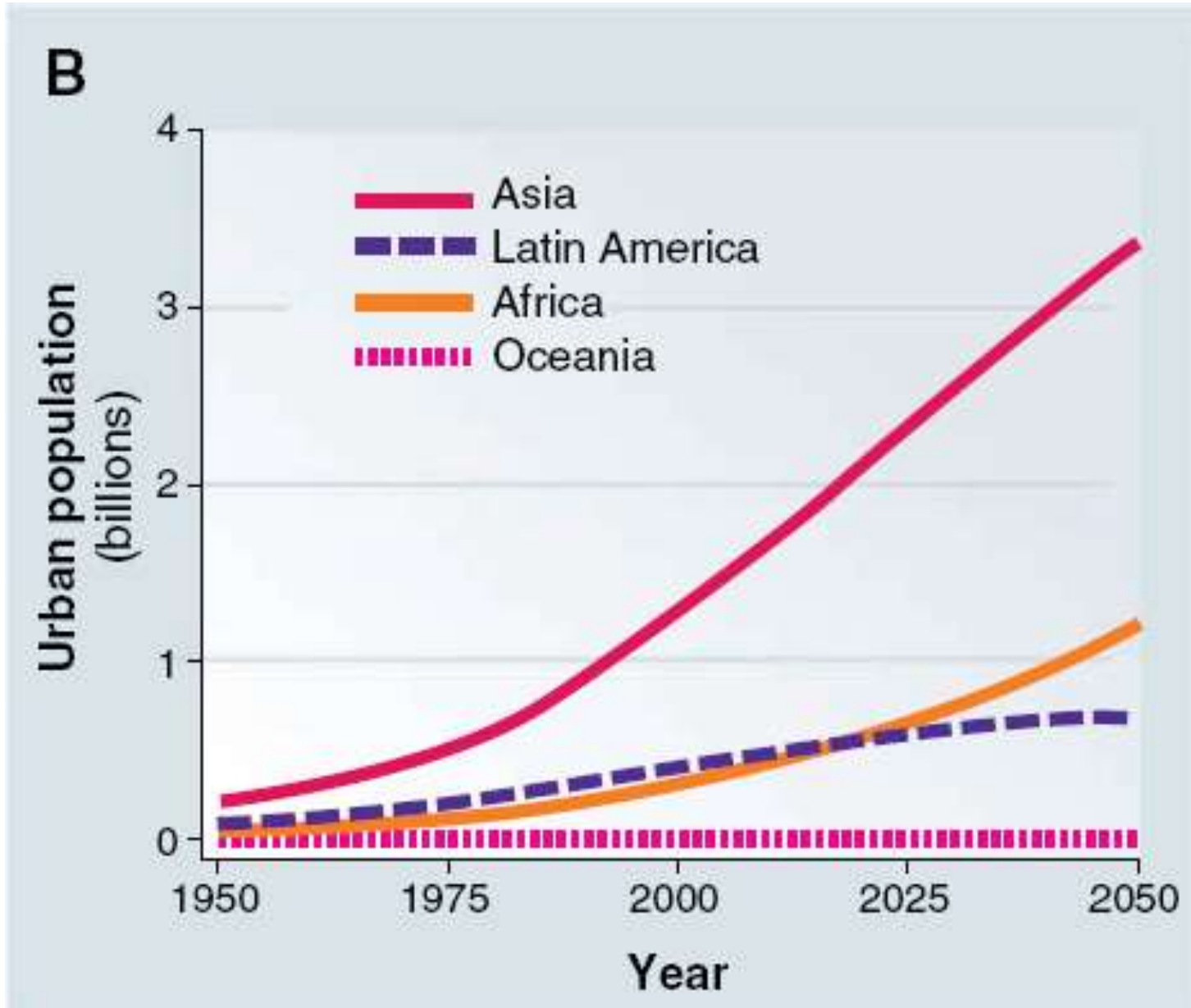


86% of respondents felt that green growth has a potential to promote inclusiveness

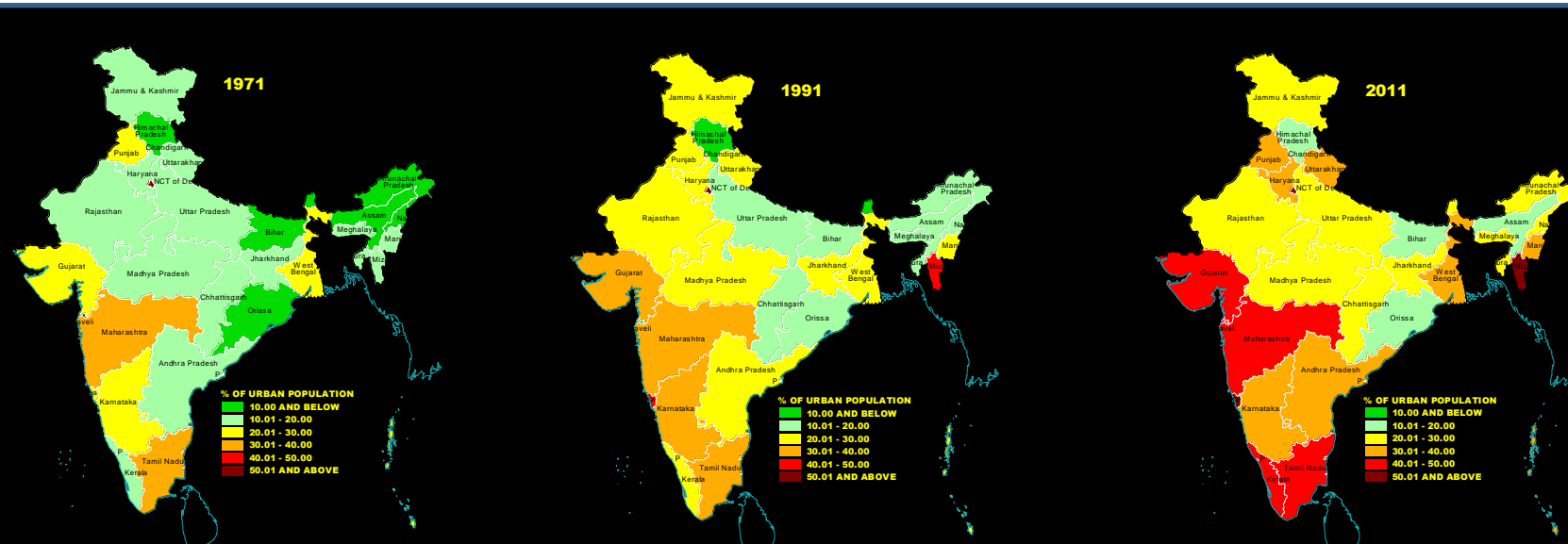
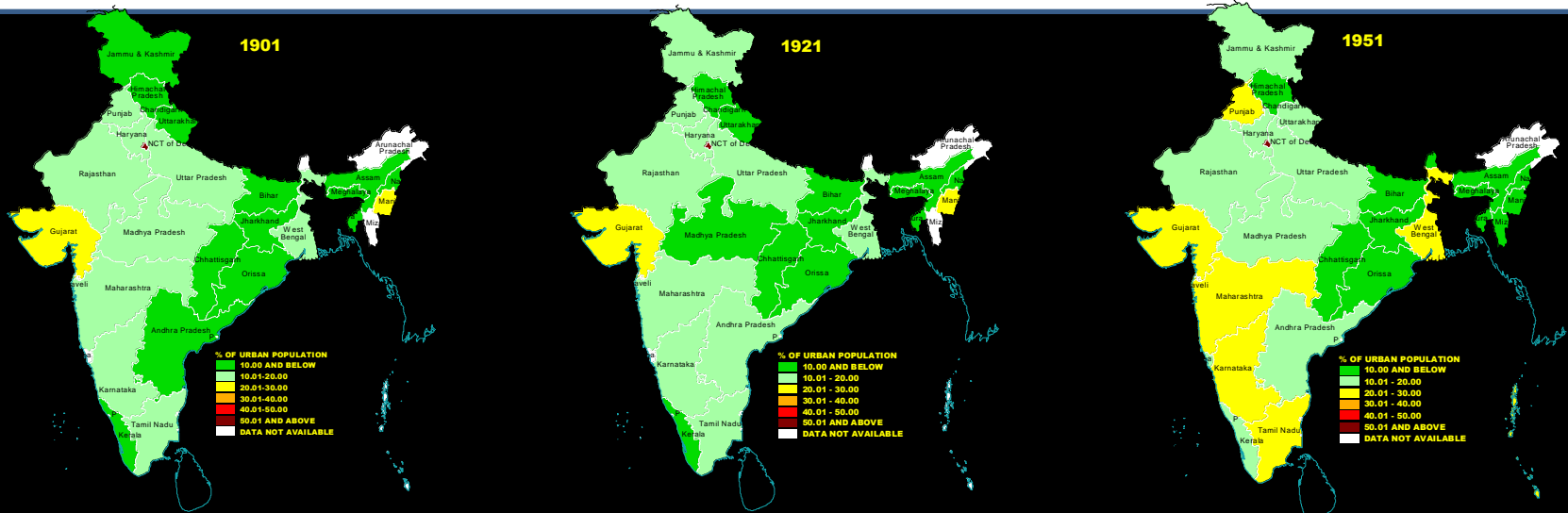
NOTE: Targeted respondents during the Delhi Sustainable Development Summit 2013 mainly from government, civil society and research & academia

Source: TERI 2013

Urban transition (Rogers, 2013)

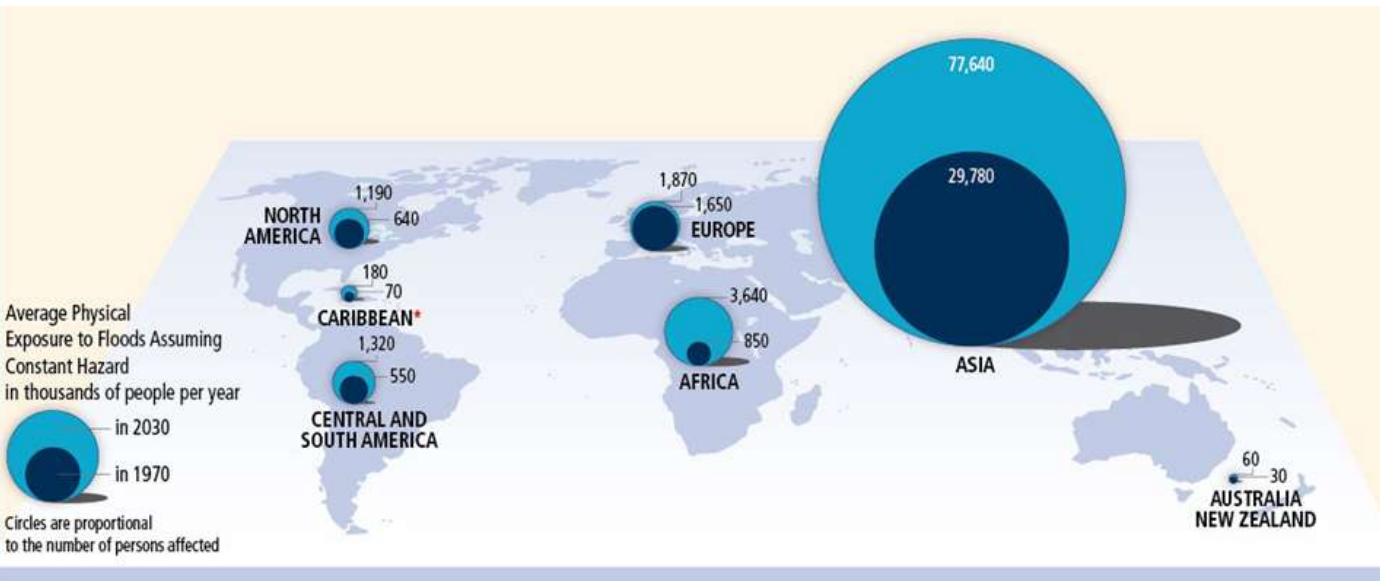
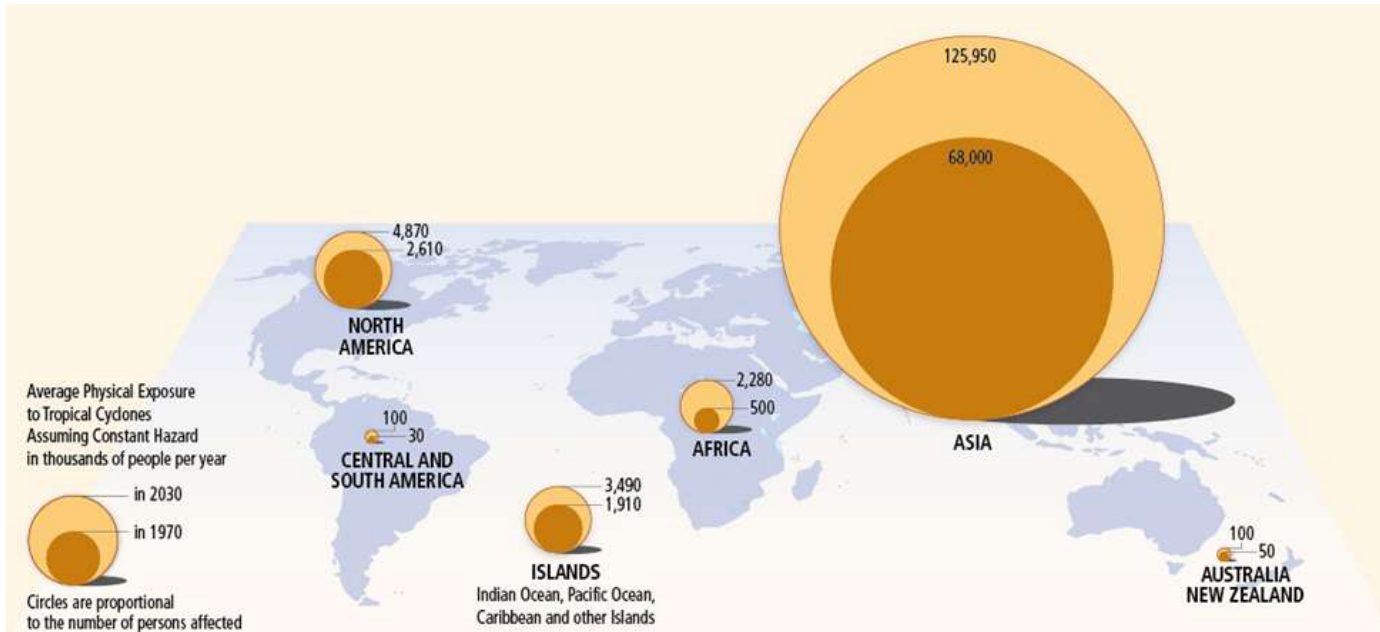


The urban transition: progress of Urbanization in India, 1901-2011 (Chandramouli, 2013)



Vulnerability to Climate Change and the need to create resilience:

Average physical exposure to (a) tropical cyclones and (b) floods in 1970 and 2030 (in thousands of people per year; assuming constant hazard)
Source: IPCC SREX



*Only catchments bigger than 1,000 km² were included in this analysis. Therefore, only the largest islands in the Caribbean are covered.

Levers for a South Asian Green Economy

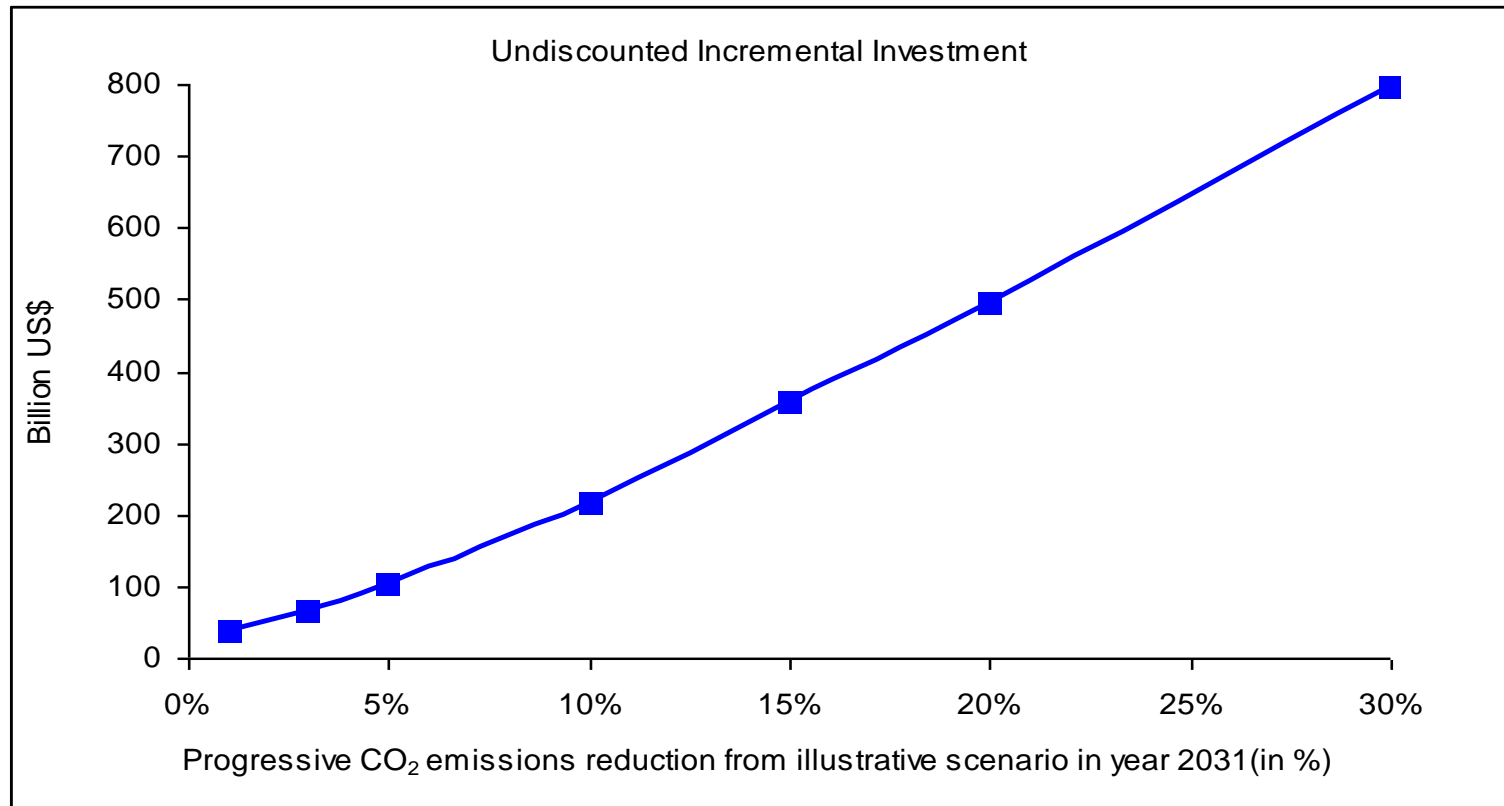
- Finance
- Technology

Annual average adaptation cost during 2010-50 for South Asia (ADB 2013)

Scenario	Adaptation target	Annual average cost (US\$ billion)	Range (US\$ billion)	Annual average cost (% GDP)	Range (% GDP)
BAU	2100 worst case (6.9°C, 1.1 m SLR)	110.9	51.2-198.0	1.32	0.64-2.29
BAU	2100 (4.5°C, 0.70 m SLR)	72.6	33.1-127.8	0.86	0.42-1.46
BAU	2050 (2.5°C, 0.55 m SLR)	40.2	18.3-71.5	0.48	0.23-0.81
C-C	2100 (2.5°C, 0.55 m SLR)	40.6	18.8-71.4	0.48	0.24-0.82
C-C	2050 (1.9°C, 0.30 m SLR)	31.0	14.2-54.5	0.36	0.18-0.62

As of 31 March 2013, approved adaptation funding for South Asia amounted to US\$ 209 million, of which the amount disbursed is US\$ 43 million

TERI-MoEF: Undiscounted Incremental Investment Cost for CO₂ Reductions from Illustrative Scenario (2011-31)



10% reduction: ~ US\$ 215 Billion

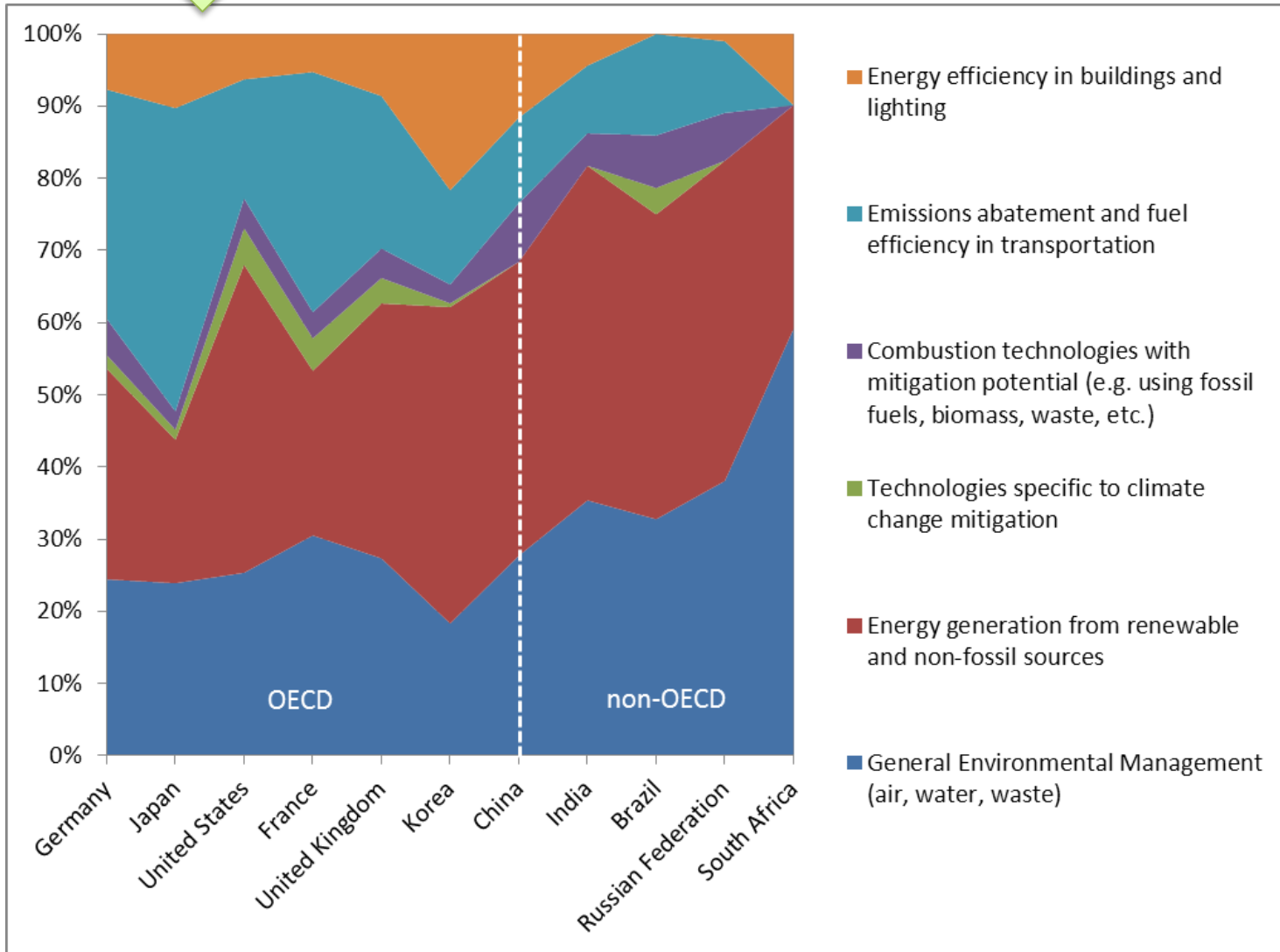
20% reduction: ~ US\$ 493 Billion

30% reduction: ~ US\$ 798 Billion

Innovations and green growth (1/3)

Hypothesis - 1

Patent applications to the EPO in environment related technologies in 2008 (*OECDstat.org*)



Hypothesis - 2

Source:
TERI IGGI study 2012

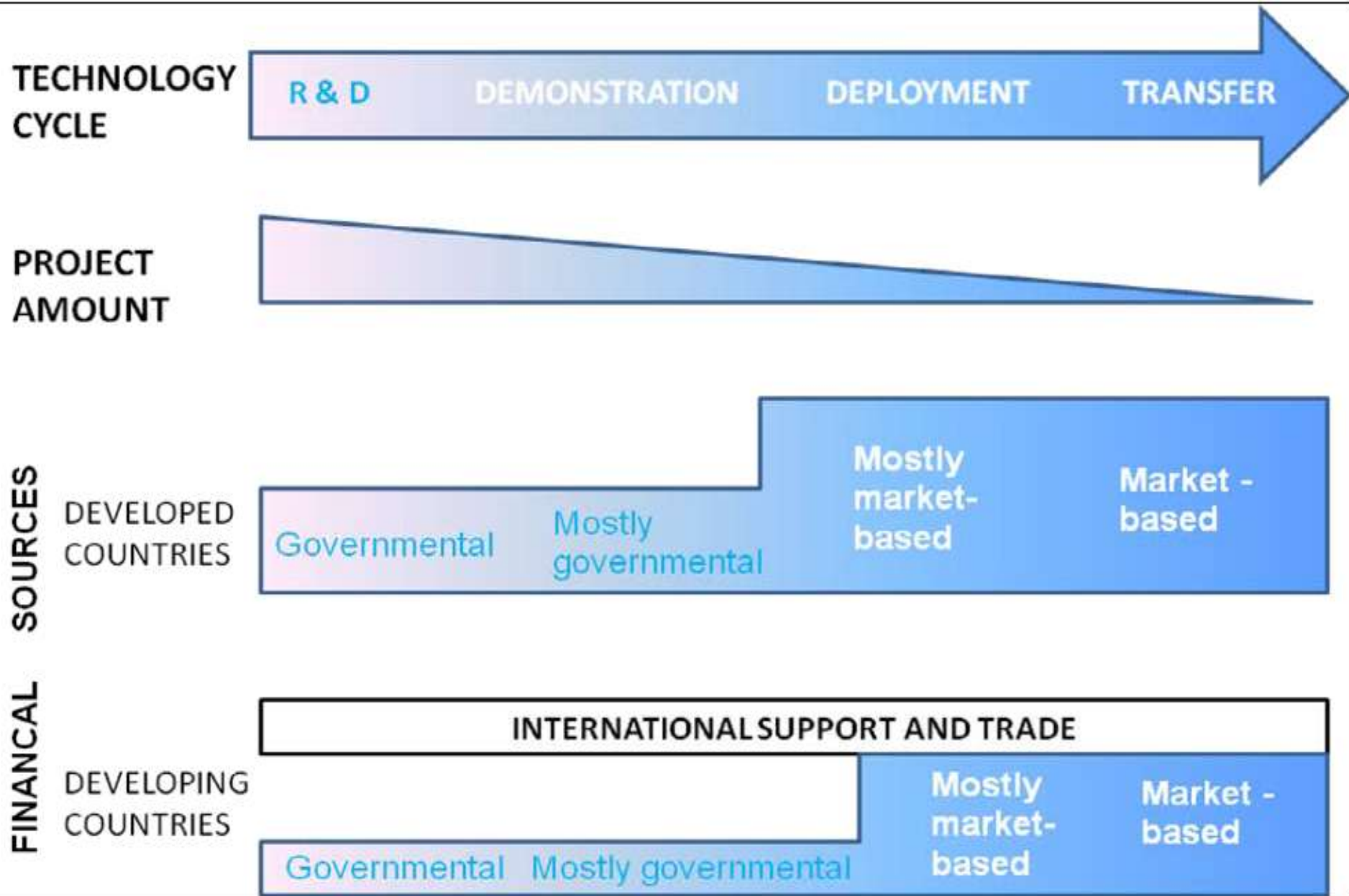
Innovations and green growth (2/3)

- **Hypothesis - 1:** Innovations for green growth in countries will be directed in sectors having competitive advantage
- **Theoretical basis:** Krugman (1979) argued that countries, rather than strictly aiming for least-cost solutions would prefer to adopt strategic behaviour, aiming for competitive advantage.
- **Findings:** It can be observed for OECD countries for instance, that for Germany and Japan percentage share of innovation in the automotive sector is greater as compared to other patents in environment related technologies. However in case of non-OECD countries, no such conclusions can be drawn. Thus for OECD countries competitive play an important role.

Innovations and green growth (3/3)

- **Hypothesis - 2:** Innovations for green growth in non-OECD countries would be directed more towards sectors that would contribute to human development
- **Theoretical basis:** The connection between natural environment and quality of life has been a treatise of recent schools of thought such as ecological economics and sustainability sciences (Shafik, 1994; Dasgupta, 2004).
- **Findings:** It can be observed, very clearly that for developing countries including India and China percentage share of patents of the country in categories of general environmental management (air, water, waste) and energy generation from renewable and non-fossil sources is more. This could also be attributed to other factors such as existing policies and institutions for local environment in non-OECD countries.

Financing development and transfer of technology



Regional cooperation on CC in S Asia

- [SAARC climate change study.pdf](#)
- [RECCSA009-flyer.pdf](#)

Discussion

- Green can be inclusive – priority areas in South Asia need to be identified eg; decentralized energy solutions, transport and infrastructure
- Moving to ‘smart’ cities – the challenge of upscaling low carbon/green interventions
- Regional and international cooperation: a must for building resilience
- Policy innovations (e.g. PAT and REC in India)

THANK YOU 😊



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