Challenge of the Balance

Environment & development perspectives in a warming world

Dual challenges. Requires new economics

1. **Environment as a development challenge** Poor live on their environment. **Environment is biggest asset for economic growth**. But its "sustainable" use **demands new management systems.**

2. **Development as an environmental challenge**. Wealth creation (economic growth) leads to environmental degradation. Don't have money or resources to 'fix' problem. **Cannot afford pollution**. **Need to leapfrog to new answers.**

Development challenge: Need to redefine poverty

Not as shortage of cash, but shortage/lack of access to natural resources.

Poor live on the environment. Environment is not a luxury but a *basic survival* need -- indicator of economic well-being is *Gross Nature Product*

Problem is not *economic* poverty alone; but *ecological* poverty.

India's biomass economy

Ecology contributes 80% of income of poor

Over 60% people depend on agriculture, fisheries and forests

Agriculture directly employs 234 million people and contributes 21% of GDP

A small change in ecosystem triggers poverty

Forests > more than timber

Forests not carbon sticks; habitats of people (Chipko). How to ensure local benefits?

30% fodder needs
40% of India's energy needs (more than 80% in rural areas).

NTFPs: 3,000 plant species used; Sustenance & income supplement for **500 million people**
NTFP-based **small-scale** enterprises provide up to **50% income** for 20-30% of the rural labour force

NTFPs account for **55%** of employment in the forestry sector

Account for over **50%** of revenues earned by forest department

Ecological poverty

- Economy grows at around 6 - 9%, agriculture at 2.3 %

Food grain available: 152 kg /person (rural). 23 kg less than in 90s

30% households eat less than 1,700 kilo calories per day/person

Rural poor spend 70 percent of income on food. Starvation

- 57% of land facing degradation (increase of 53 percent since 1994)

Impact esp. on common lands & rain fed areas. About 68 percent of the net sown area is drought prone.

- 60% of cultivable areas are rainfed (no irrigation). Produce 42% of food (2.5tons/ha productivity)

- 80% of India's landholding is less than one hectare (33% landless (22% in 1991-92)

- Every second farmer today indebted

Increasing demands on ecology

- Population increase @ 2%/year
- 1 hectare now sustains 4 people, 1.5 people/Ha in 1980s
- Must increase: Firewood from 100 mt to 300 mt; Green fodder from 230 mt to 780 mt
- Per capita forests decreasing: from 0.20 in 1951 to 0.08 now
- People dependent on forests is growing: from 184 million in 1996 to 226 in 2006.
- Timber demand (housing & industrial) increasing; paper consumption increasing from 3 kgs in 1995 to 5 kgs in 2003 (China = 29.1 kg per person).
- Overall biomass production in India declining rapidly: 240.62 million hectare of India's 306.25 mha reported land used for biomass production. Very small fraction of agricultural lands productivity has improved due to irrigation.

Water: Distributive growth

We use water in ‘decentralised’ manner. But we recharge water in ‘centralised’ manner.

Lakes and ponds were sponges, to harvest rain, to harvest the flood water so that groundwater could be recharged

India’s 100-day guaranteed employment programme an opportunity to rebuild rural assets

Have to work on it. **Push and push policy**

Monsoons: India's real Finance Minister

Drought = cripples livelihoods, trapping them in perpetual poverty… debt, liquidate assets… usually, drought-prone districts have lower HDI…

68% of country's net sown area is rainfed; 42% of India's cultivable lands are drought prone; **33% face chronic drought** -- 102 districts (Drought Crisis Management Plan of Min. of Agriculture)

Ironically, drought-prone districts get on average 750 – 1125 mm/year (Delhi gets about 700 mm/yr). Water **management** the problem.

Food insecure

Food insecurity: India's pop increasing by roughly 2%/year. But 1990 – 2000, area under food production *shrunk* by 12.5%. Food grain availability (annual) is now 152 kg/capita, 23 kg less than a decade before.

Poorest 30% of Indian households eat less than 1700 Kcal/day/person (UN figures), but spend up to 70% of their income on food.

Of 100 mt of extra foodgrain needed by 2020, 36 mt will have to come from rainfed areas alone.

Drought proofing is key. DPAP + DAP spending thousands of crores.

Severe droughts led to landmark decisions. 1990s: shift to watershed development approaches following 1987 drought. 2002 drought:

Water math

Simple calculation: 100 mm of rain (1/10th of the country's average) falling on 1 hectare of land yields = 1 million litres of freshwater.

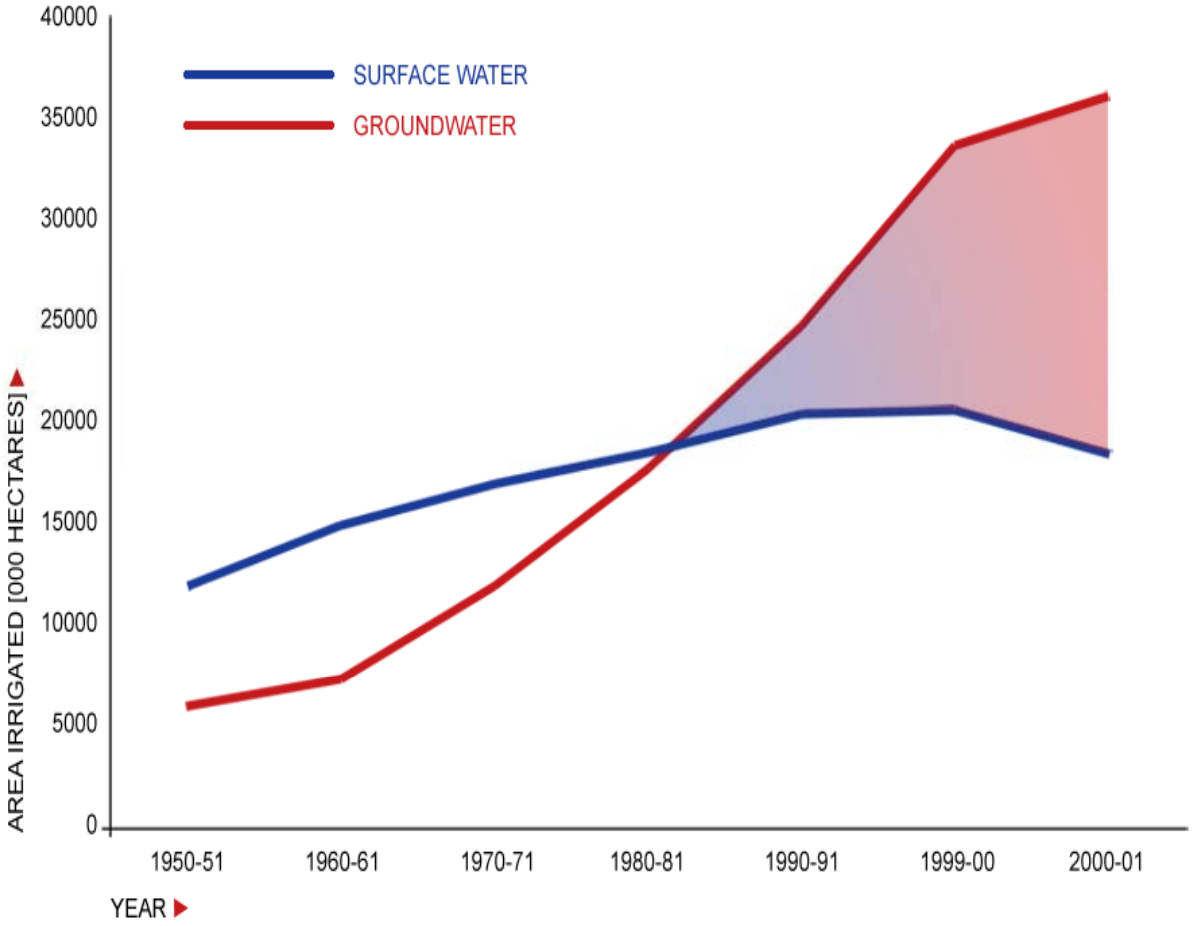
Rain captured from only 1 to 2 % of India's land can provide the entire India's population with 100 litres of water / person / day (recommended norm is 40 lpcd).

MGNREGA recognized this – in initial years, 80% approved activities were in drought proofing (19 lakh water harvesting structures built).

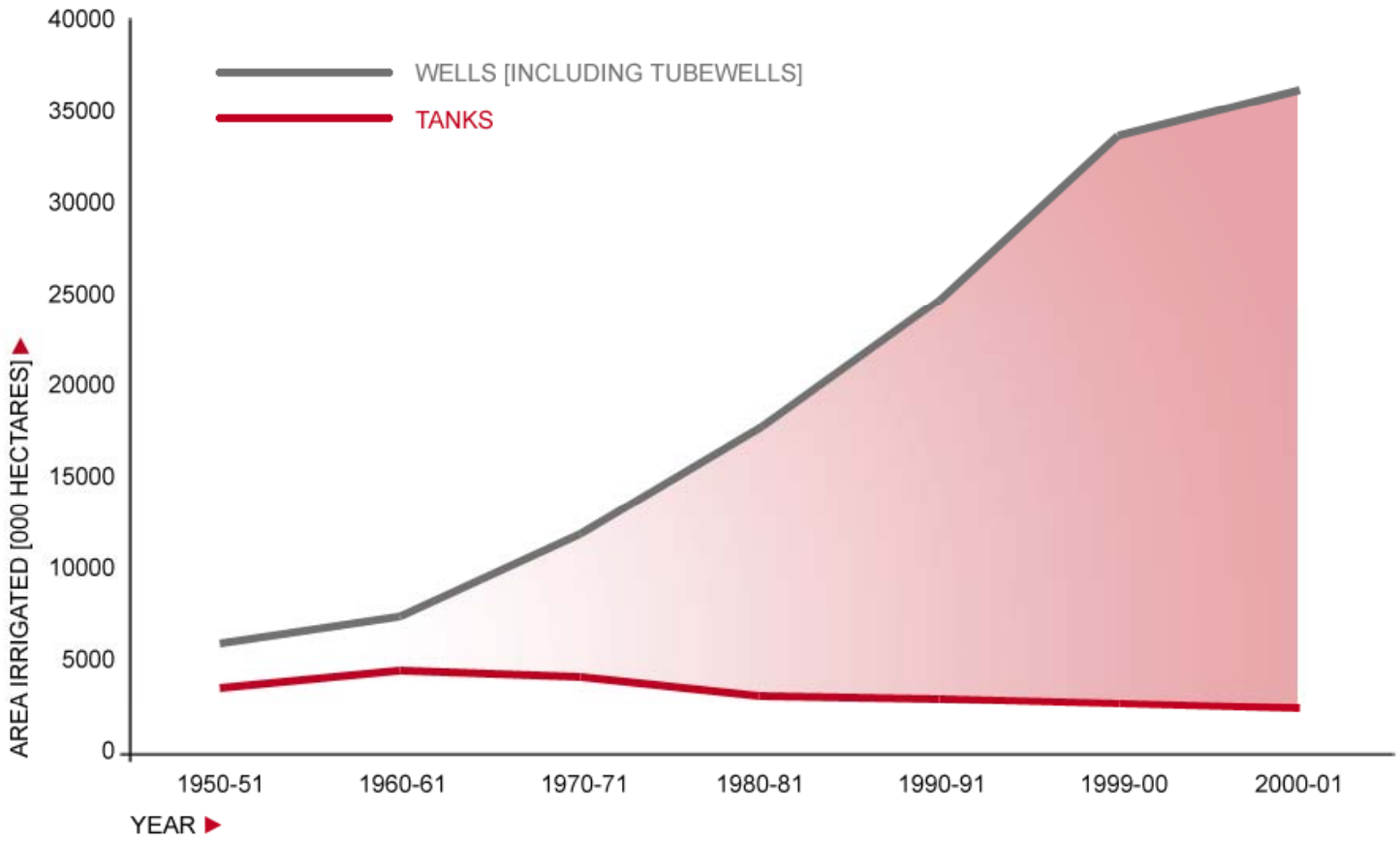
Cost effective: 50,000/ha (60% were wages going back to the poor) vs. Rs. 1.5 lakh/ha for major irrigation project spent by government.

Groundwater drives economy

- State invested in surface water systems and took away control of community water systems from people
- People switched to individual systems – decentralised to each household and each farm – groundwater
- 19 million well owners in India. Supplies bulk of drinking water and irrigation
- But not sustainable.



Decentralised technologies for decentralised growth



Laporiya

Seed

Hivre Bazaar

Ralegan Siddhi

Nimli

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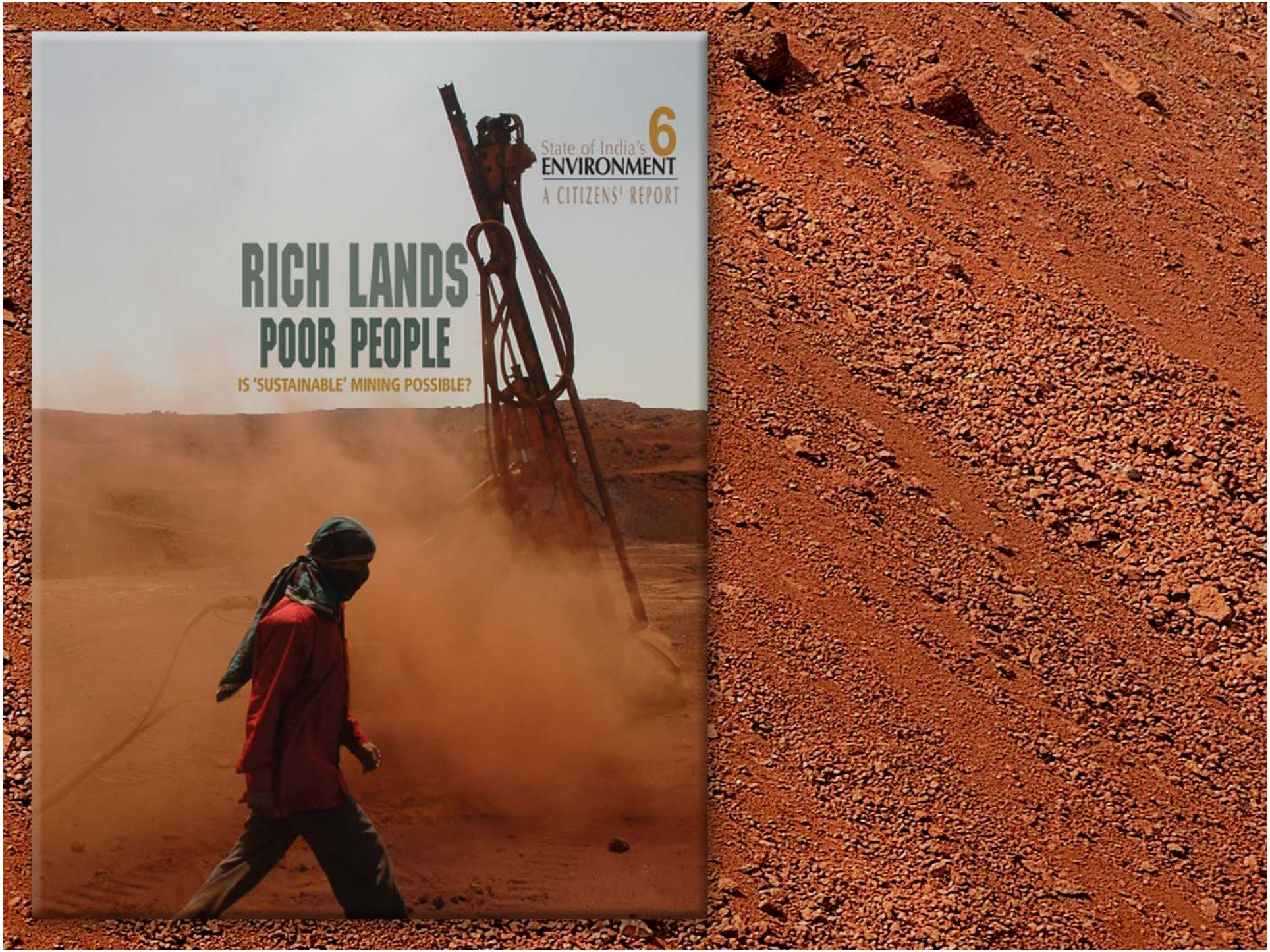
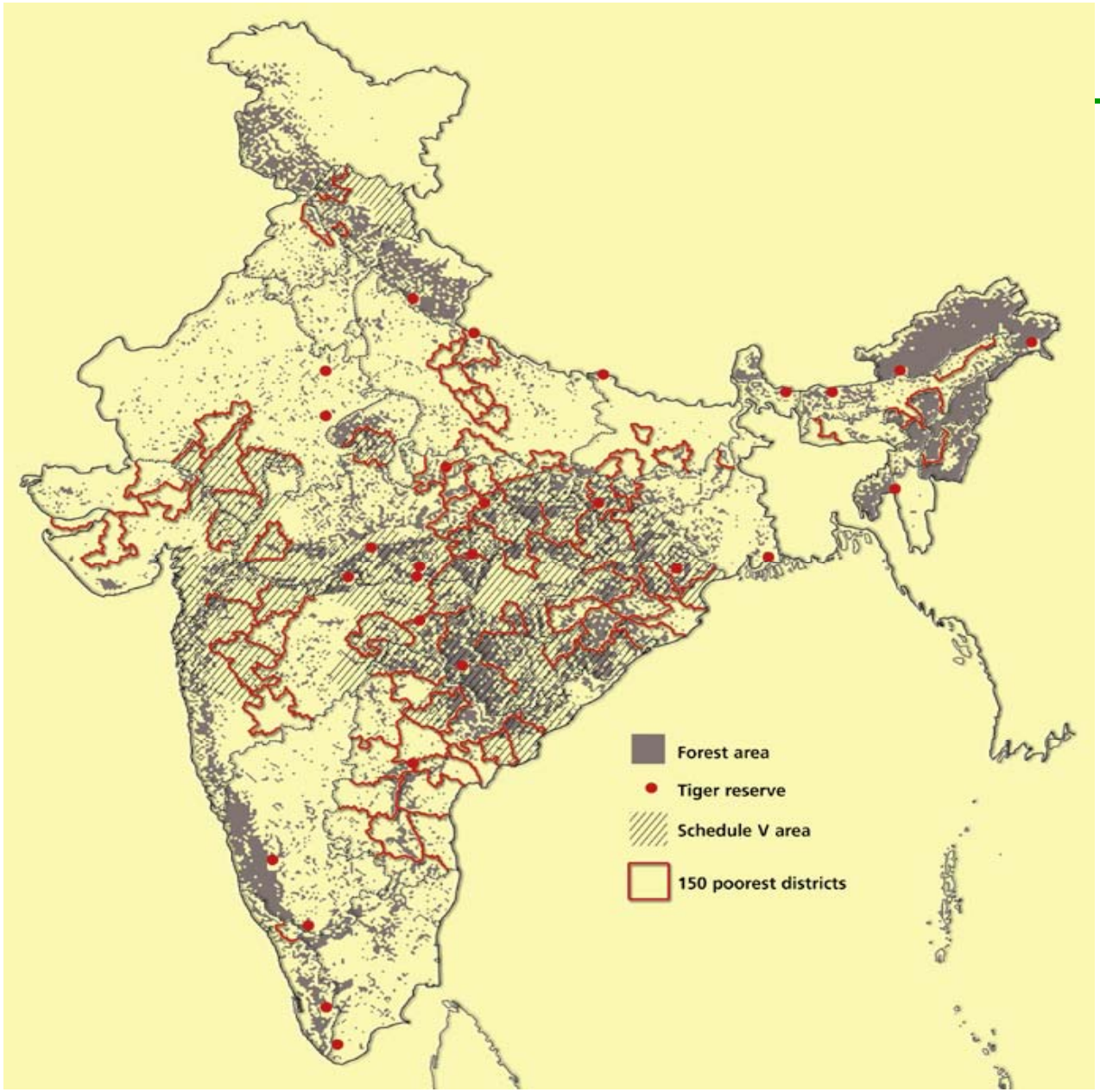

State of India's 6
ENVIRONMENT
A CITIZENS' REPORT
RICH LANDS
POOR PEOPLE
IS 'SUSTAINABLE' MINING POSSIBLE?

Resource curse, conflicts

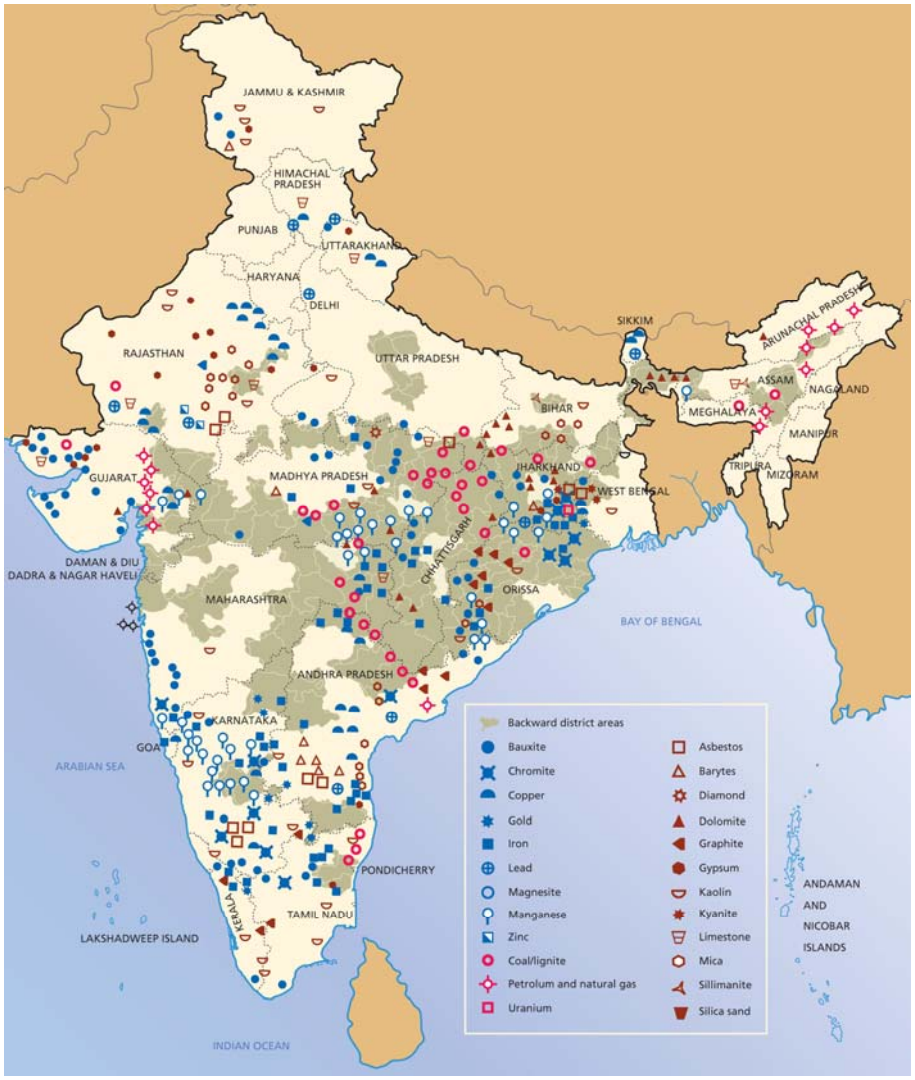


Poorest live on richest lands:

Re-learn development

Minerals, forests, water found where poverty is most intense

Of the 50 top mineral producing districts, 70% fall under the 150 most backwards districts.



Mining – boomtime

2.55 million (52% tribal) people displaced because of mining projects alone

Value of mineral production **Rs 84,211 crores (2005-06)**

People employed **560000 (2005-06)** down 30% from 1991 to 2004

Dilemma: Small-scale, unregulated, but large employer

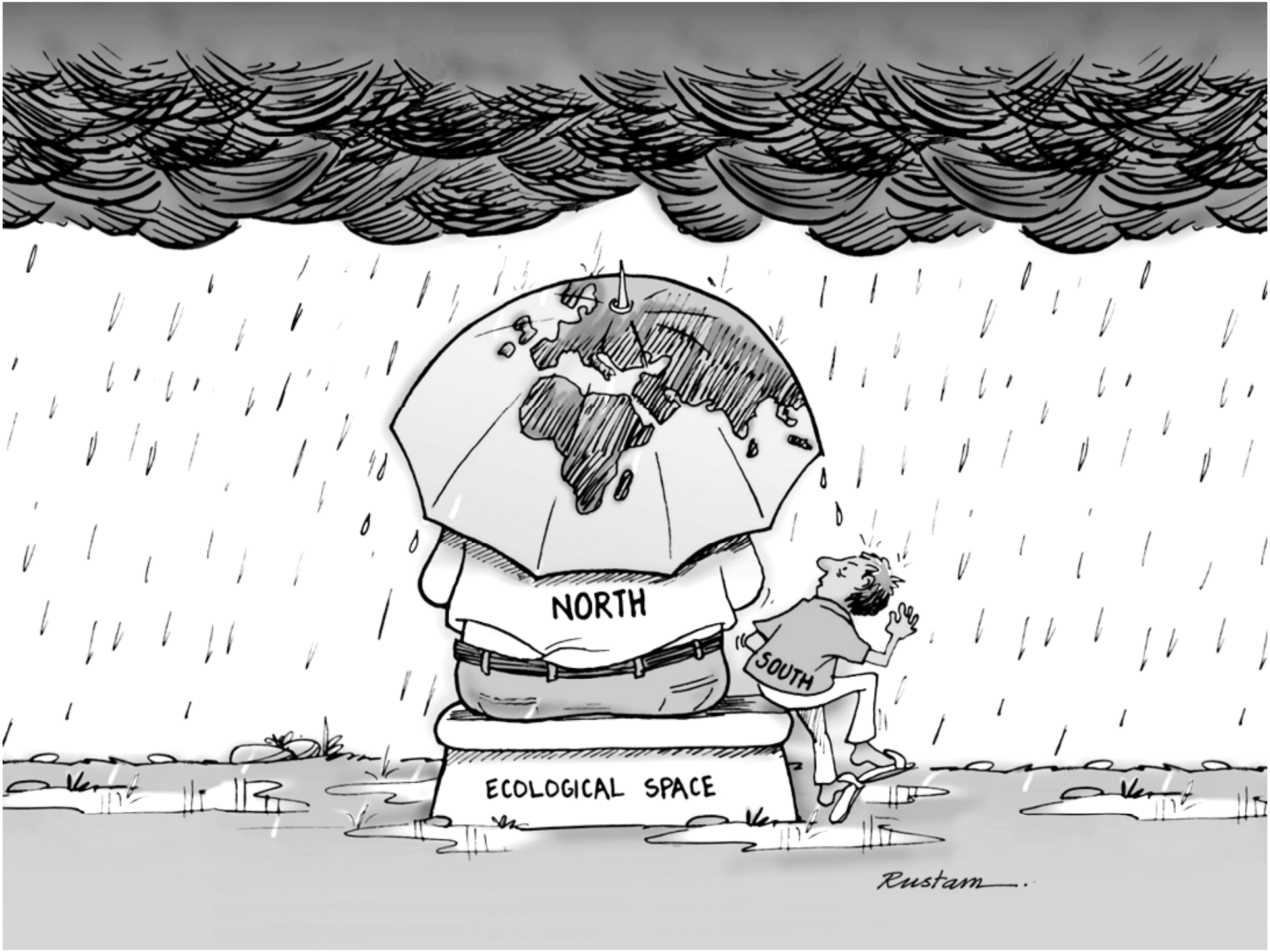
1.8 billion tonnes waste generated from mines

Hotspots of conflicts

Case in point: Uranium mining produces 4.1 million tonnes of waste – close to 50,000 people living close by.

Challenge: Making people matter

- The wealth of mining doesn't go back to the mining areas
- Mining takes minerals, degrades land, water and forests, does not provide local employment
- Mining displaces people from the existing livelihood but cannot replace it


NORTH
SOUTH
ECOLOGICAL SPACE
Rustam

Environmentalism of poor

- Industrialised world's movement responded to waste created by economic growth. After society was rich. Perfected waste management
- Indian (and Southern) movement is when countries are still poor but getting rich. Economic growth costs borne by environment and poor communities.
- **People are demanding change**. New ways of growth. New ways of progress

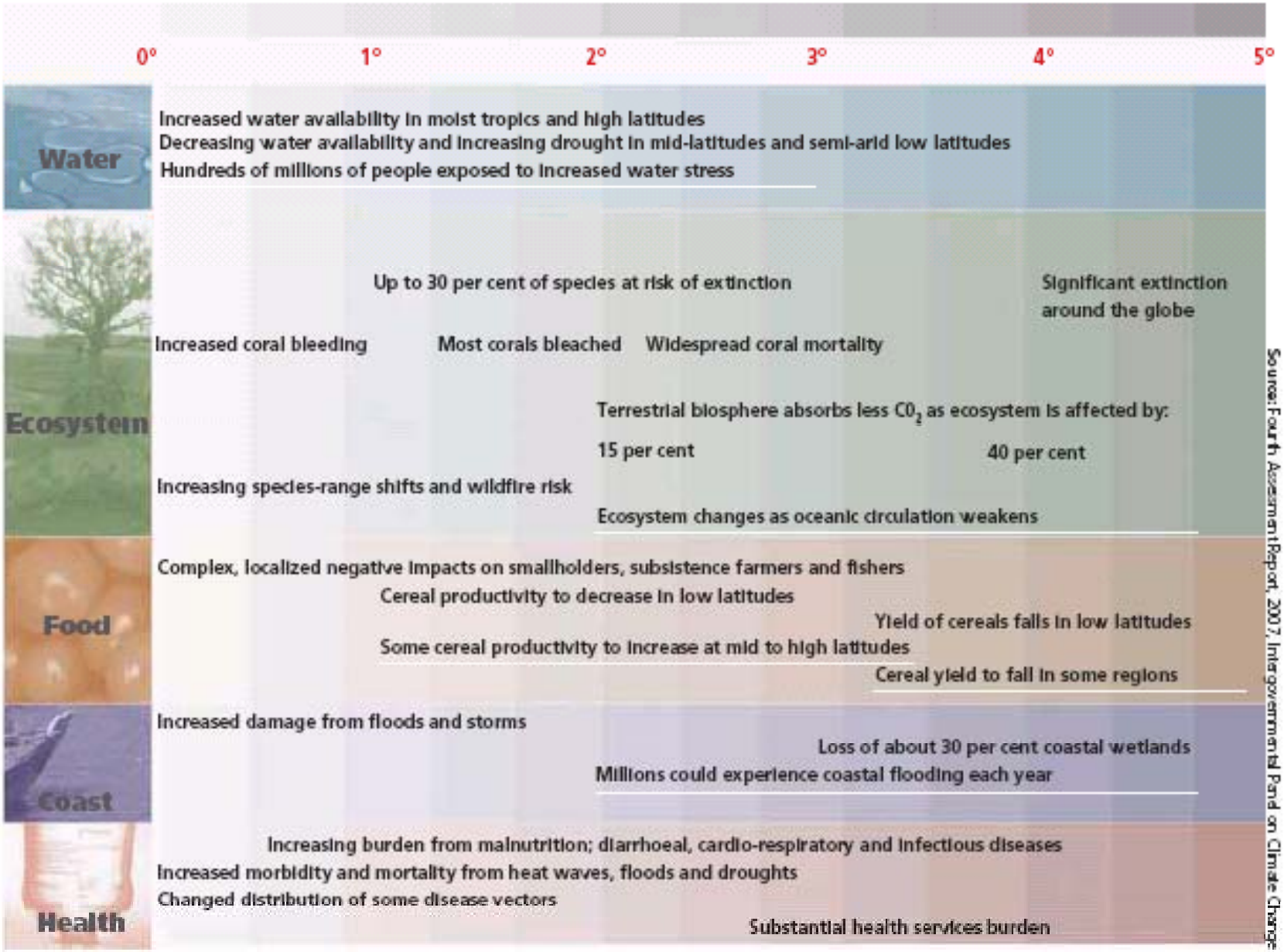
Adaptation: Development challenge of the Environment

Using the environment to build assets – regenerate the resource base for building livelihoods, dealing with poverty

Understood. **But not practiced**

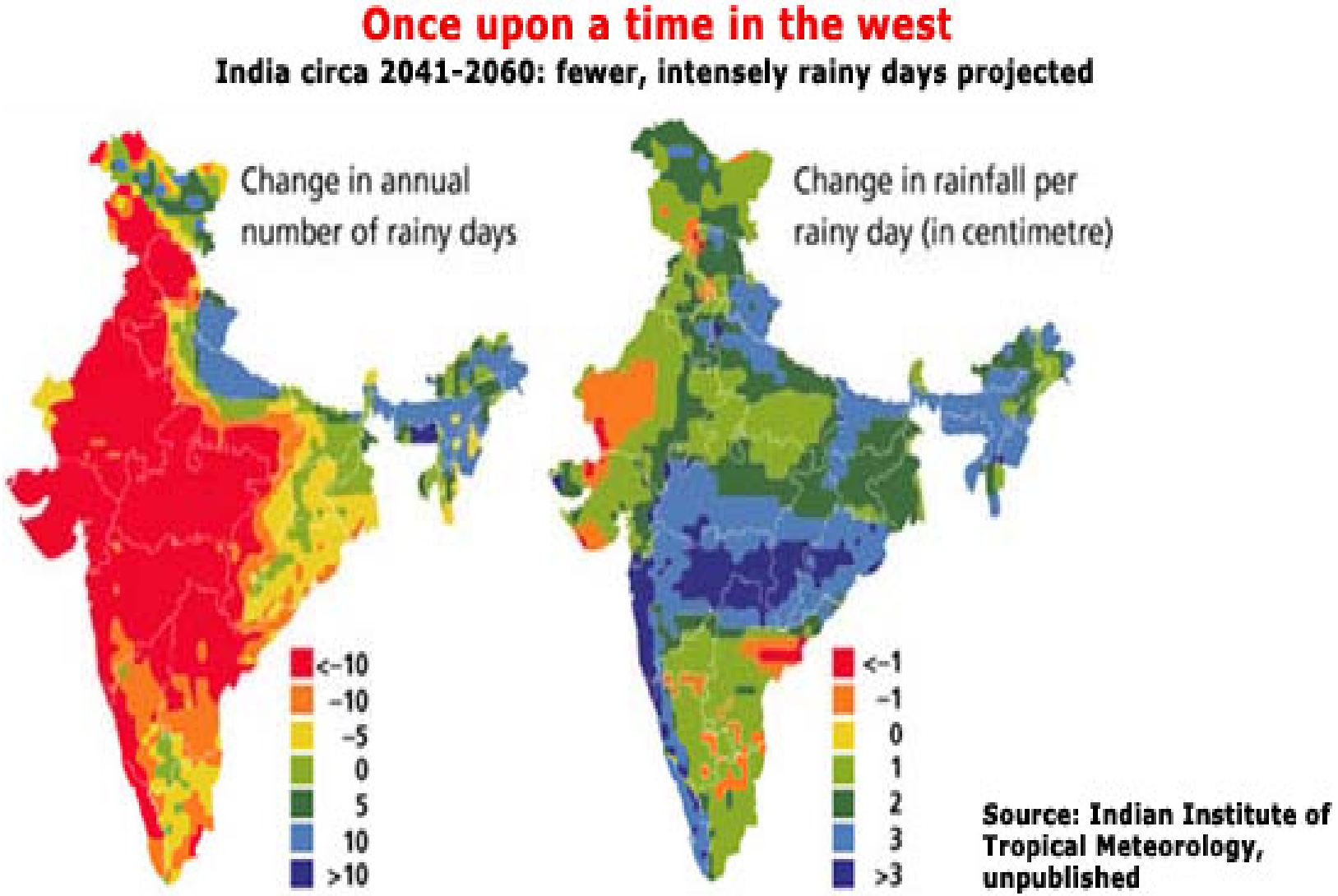
Environmental management is about deepening democracy – building institutions at village level, participatory democracy, rights to resources

Can't give up this fight. **Only viable strategy for adaptation to climate change**



Source: Fourth Assessment Report, 2007, Intergovernmental Panel on Climate Change

More rain but less rain days
Shift in rain patterns..



Challenge: To re-invent growth

- Poverty-ecology interface
- Land use: 18% emissions from land use changes. Can protect forests; Can plant new forests
- Forests: more than timber
- Water: Distributive growth
- Agriculture & food security
- Mining: Making people matter

- Energy challenge: India already mostly renewable due to poverty. So, how to leapfrog to wealth without taking fossil route ("Clean" coal power; distributed power grids based on renewables…microhydel, etc.)
- Transport: Re-invent mobility: move to public transport

Not just rural but urban challenge

Cities and industries growing. Need water.
Increasing stress on rural water.

Cities are sourcing their water from further and further away.

Use clean water and discharge polluted water.
Adding to water stress.

Need to reinvent the water paradigm for urban South.
Desperately.

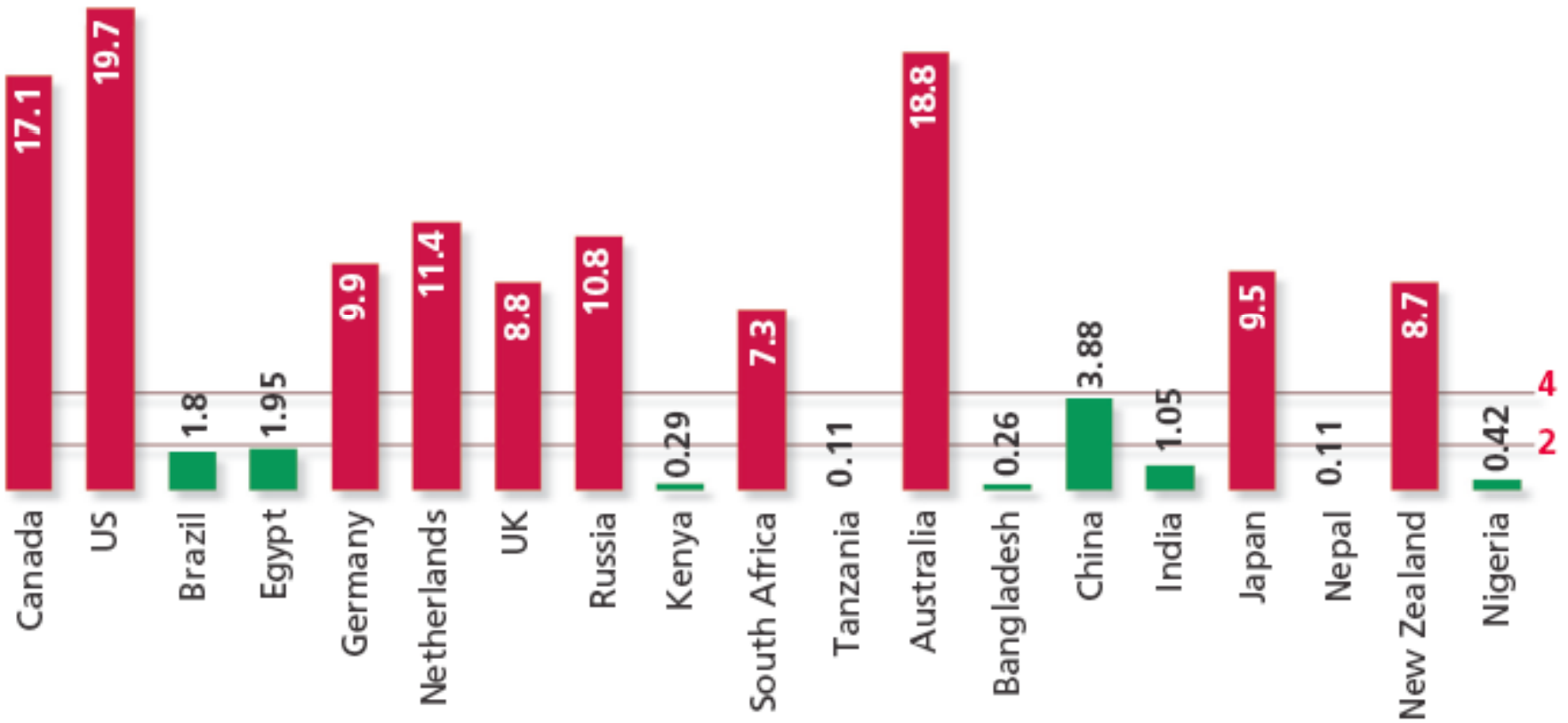
Present scenario

1 US citizen =

107 Bangladeshis
134 Bhutanese
19 Indians
269 Nepalese

Unacceptable. Need to secure ecological space for growth

Climate injustice: per capita emissions in the world



Structure of current activities

Awareness Raising & Documentation	Research & Policy Advocacy	Training & Outreach
Down to Earth 	Water Management (Rural, Urban & Rivers)	Green Schools' Programme
Gobar Times	Sustainable Industrialization (Green Rating Industry & EIA)	Media Outreach
State of India's Environment Reports (SOE)	Air Pollution & Mobility (Sustainable Cities)	Regulators' Training
Books, Documents, Journals, Databases	Green Buildings (Sustainable Cities)	Environment Training Institute (ETI)
	South Asia Programme	
India Environment Portal	Policy Research & Community Support	AAGC (stude
Web-l fo, services 	Pollution Monitoring Laboratory	
	Food Safety & Toxins	
	Climate Change & GEG (Tracking Negotiations & Adaptation)