



SCIENTIFIC AND TECHNICAL ADVISORY PANEL

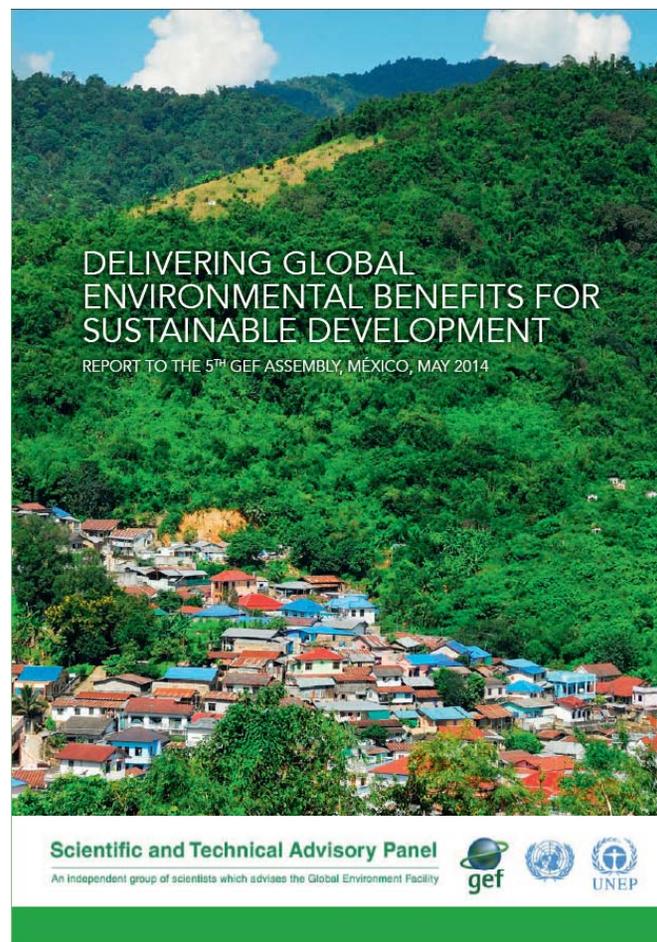
PRESENTATION TO THE 5TH GEF ASSEMBLY



Rosina Bierbaum, STAP Chair

Delivering GEBs for Sustainable Development

- STAP's vision for GEF-6
- New areas for integration



ipcc

INTERGOVERNMENTAL PANEL ON climate change

CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY



Climate change 2014: threatens development gains

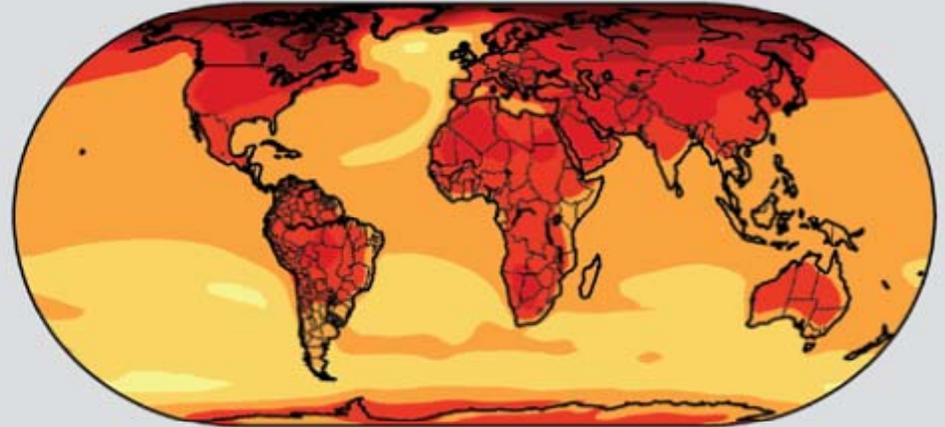
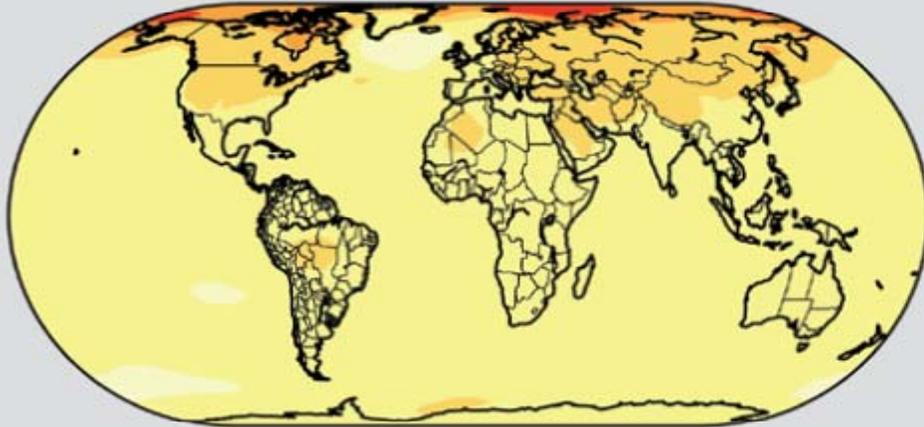
- ❑ Warming continues, carbon dioxide at record levels, sea level rise accelerating.
- ❑ Impacts already observed on food production, ecosystems, human health, water quantity/timing/quality, & some extreme events.
- ❑ Warming could reach 4°C, with about 1 meter of sea level rise by 2100.
- ❑ Projected effects include unprecedented high temperatures, inundation of coastal areas, & loss of livelihoods.
- ❑ Impacts on agriculture , fisheries, forests, coral reefs are at risk of drastic losses before 2°C; the poor will suffer the most.
- ❑ Cost effective option exist to get back near a 2°C pathway...but we are fast running out of time...



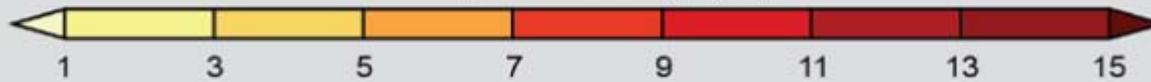
A TALE OF TWO FUTURE WORLDS by 2100

Rapid Emissions Reductions (RCP 2.6)

Continued Emissions Increases (RCP 8.5)

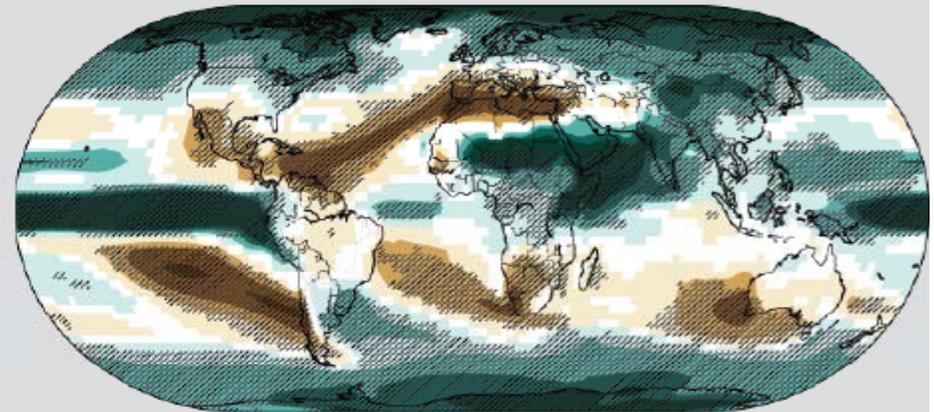
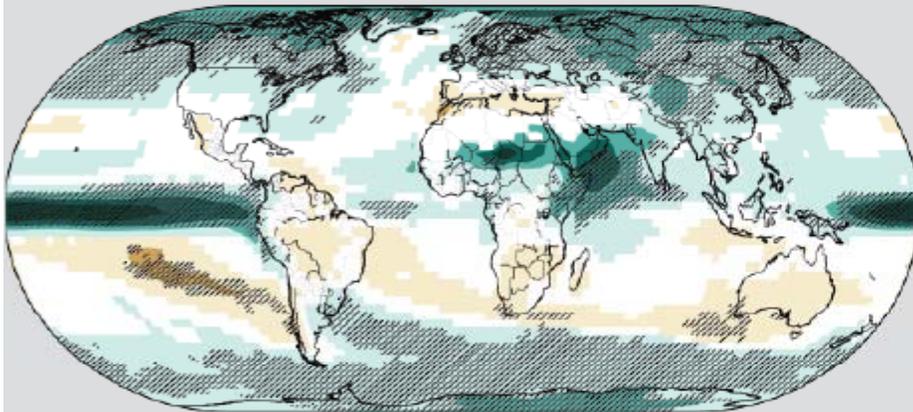


Temperature Change (°F)

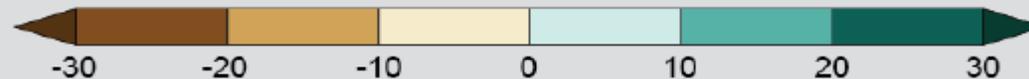


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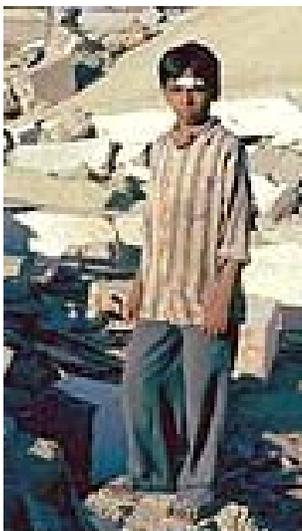
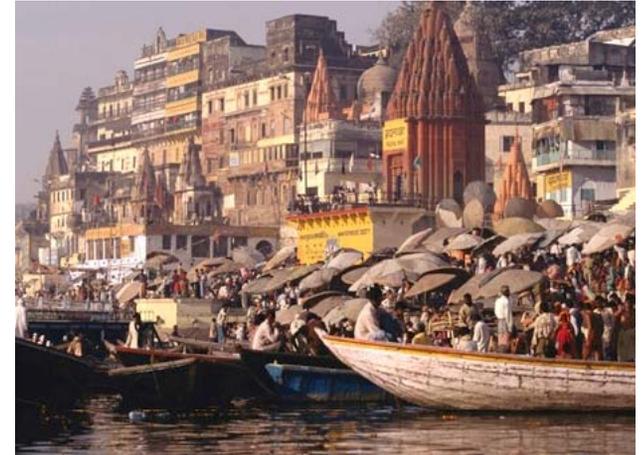


Precipitation Change (%)



Today: An unsustainable world

- 1.1 billion people in poverty
- A quarter of children malnourished
- A quarter of women illiterate
- 1.3 billion without modern energy
- 1 billion without clean water



Tomorrow: climate change exacerbates inequities

- Most impacts will be negative, especially for poorest, most vulnerable nations.
- Every sector will be challenged in virtually every region of the globe.
- International, regional, and national entities are ill-prepared to manage.
- Both mitigation and adaptation are needed because:
 - It's already too late to avoid substantial climate change.
 - Adaptation measures more costly & less effective as magnitude increases.

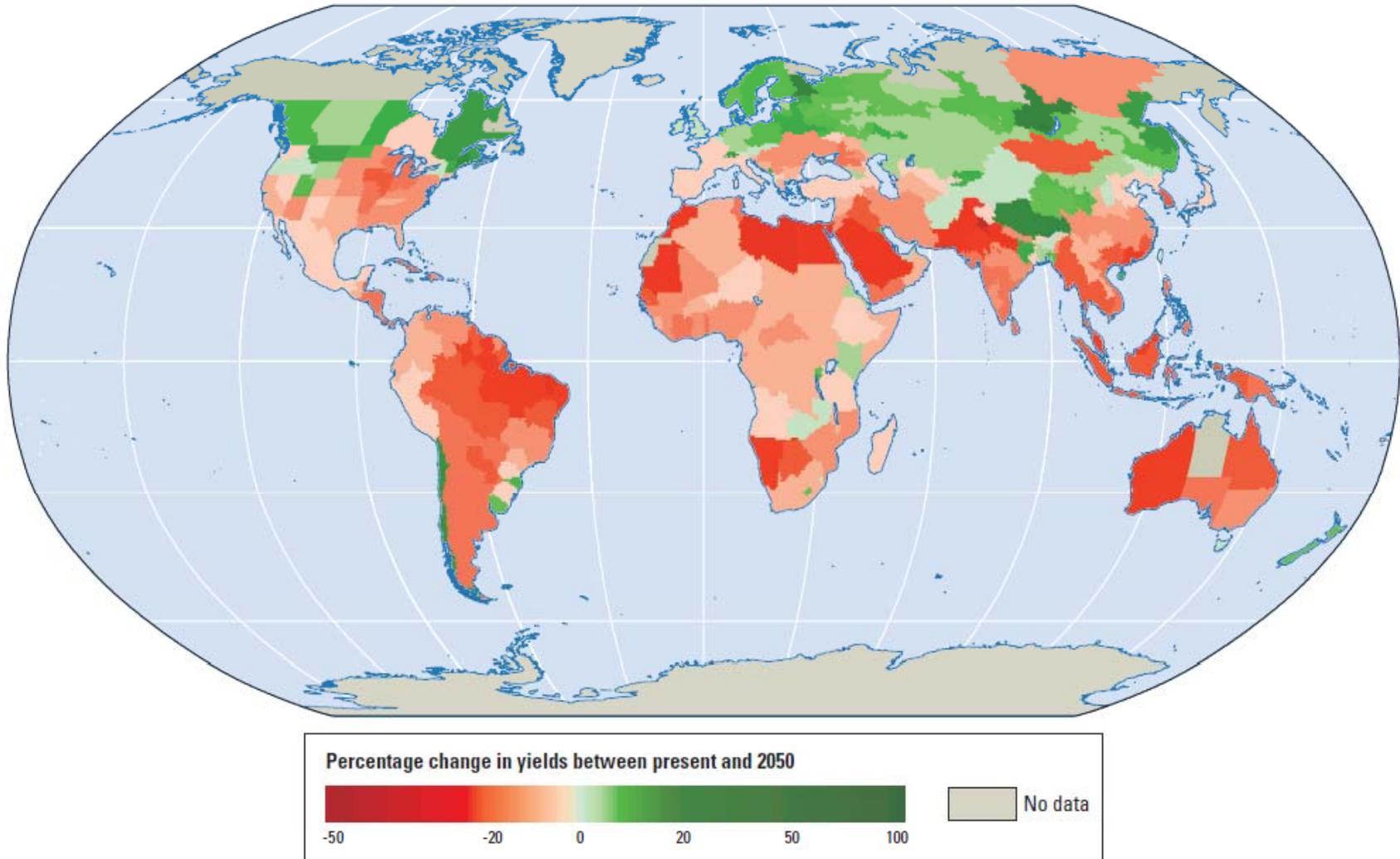


Flooding in Serbia and Bosnia, May 2014



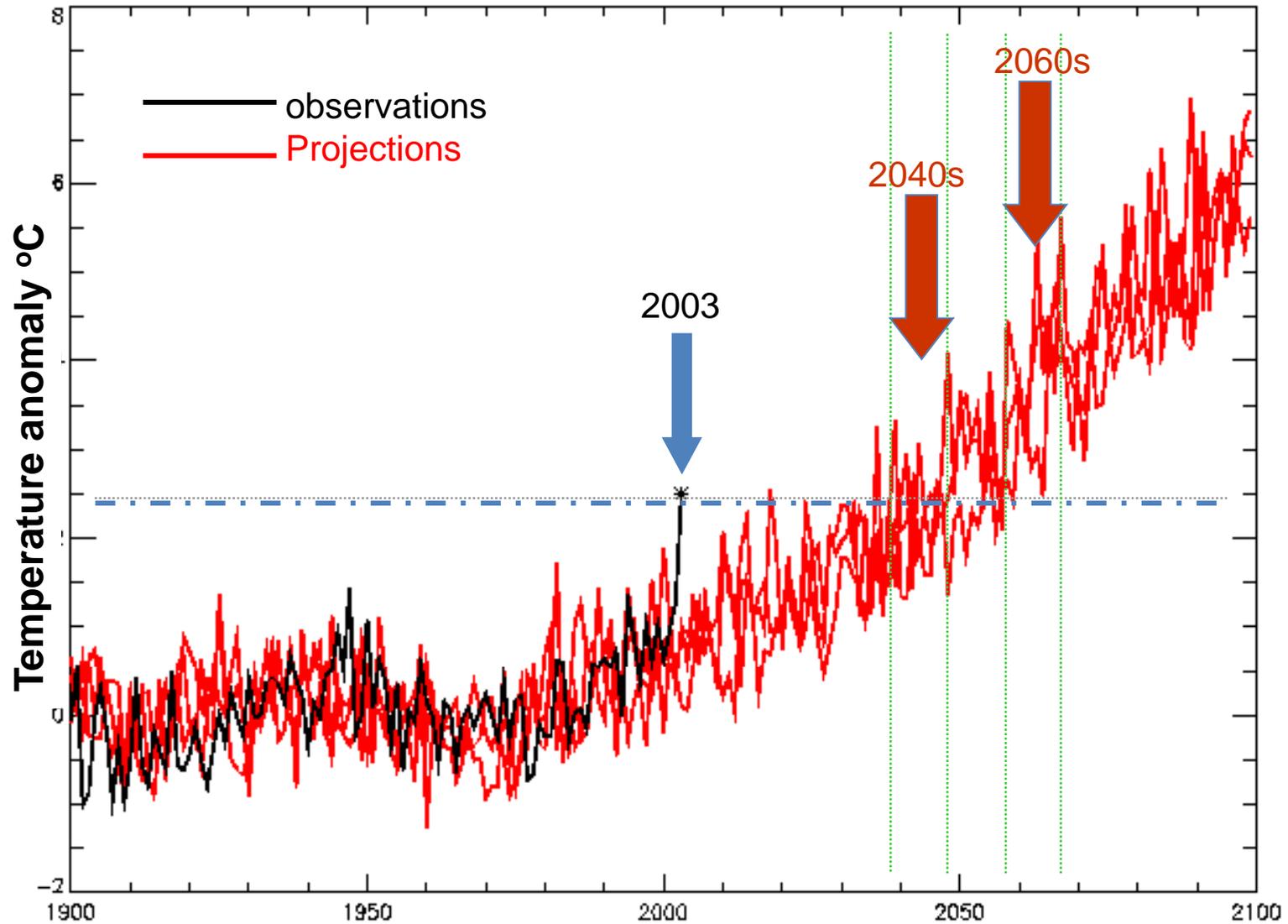
Drought in Somalia, 2011

Agricultural Declines are Projected



European Summer Temperatures killed 35,000 in 2003

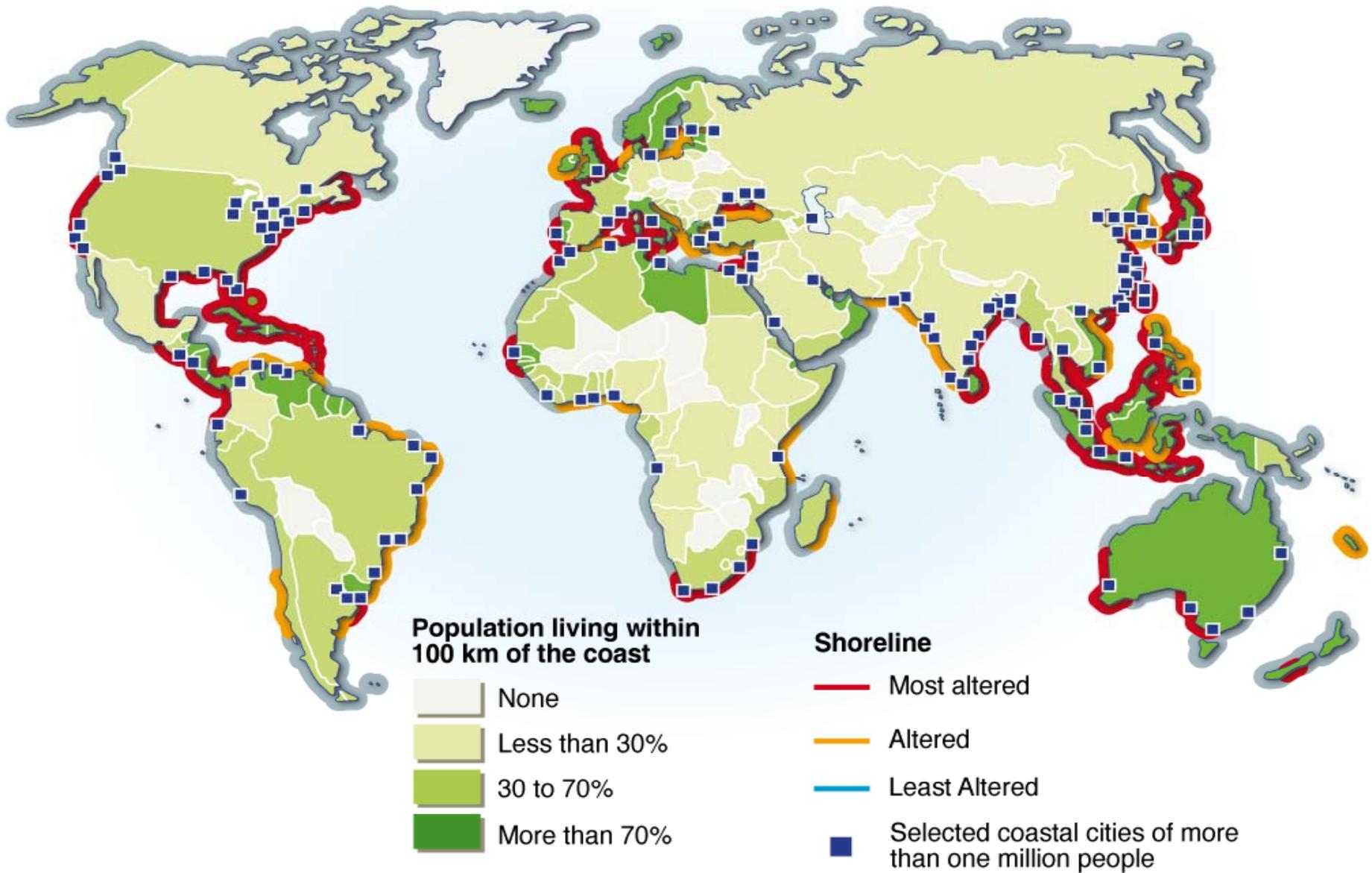
this will be normal temperatures by 2040s, cool by 2060s



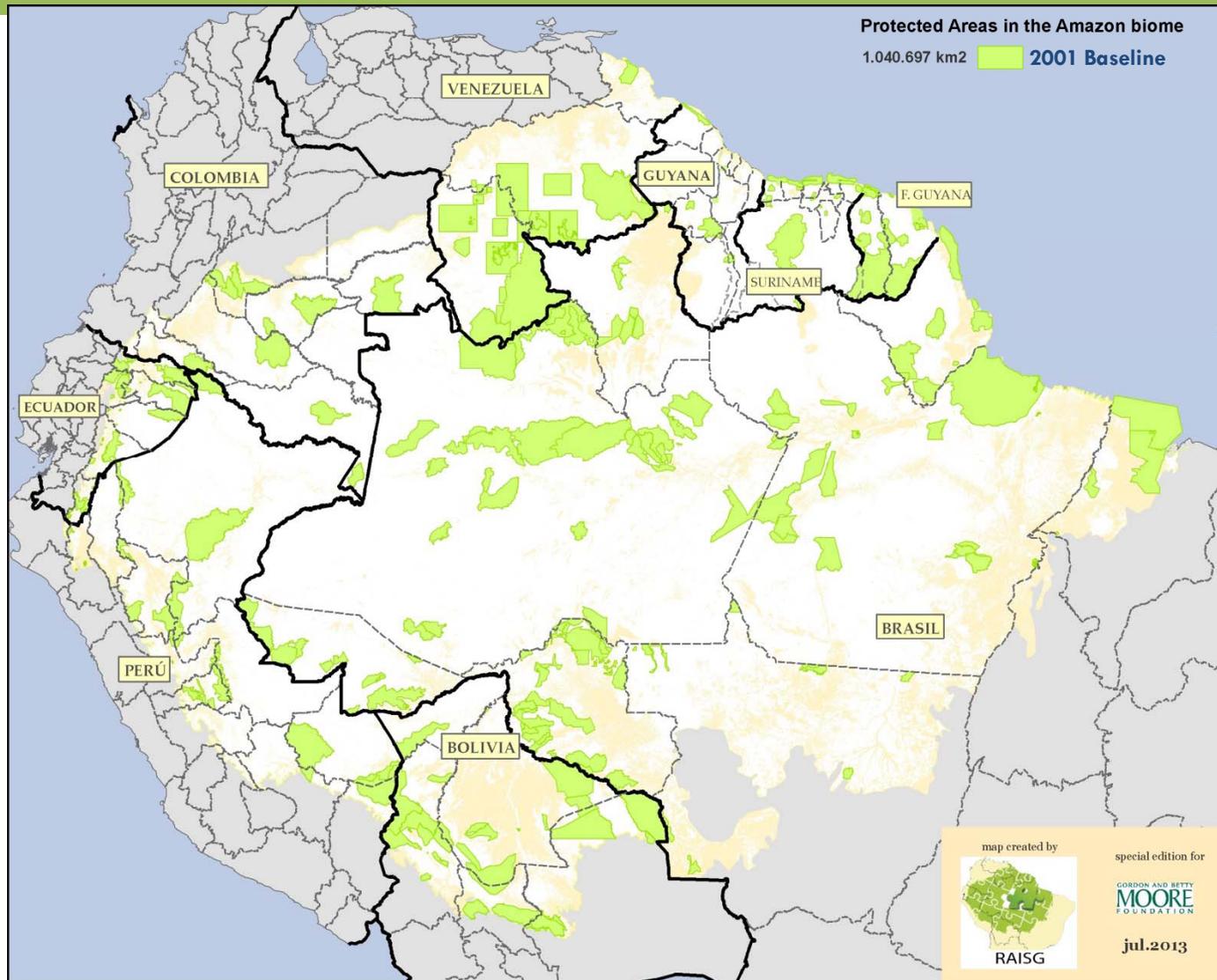
9.

Stott et al., *Nature* 432: 610-613

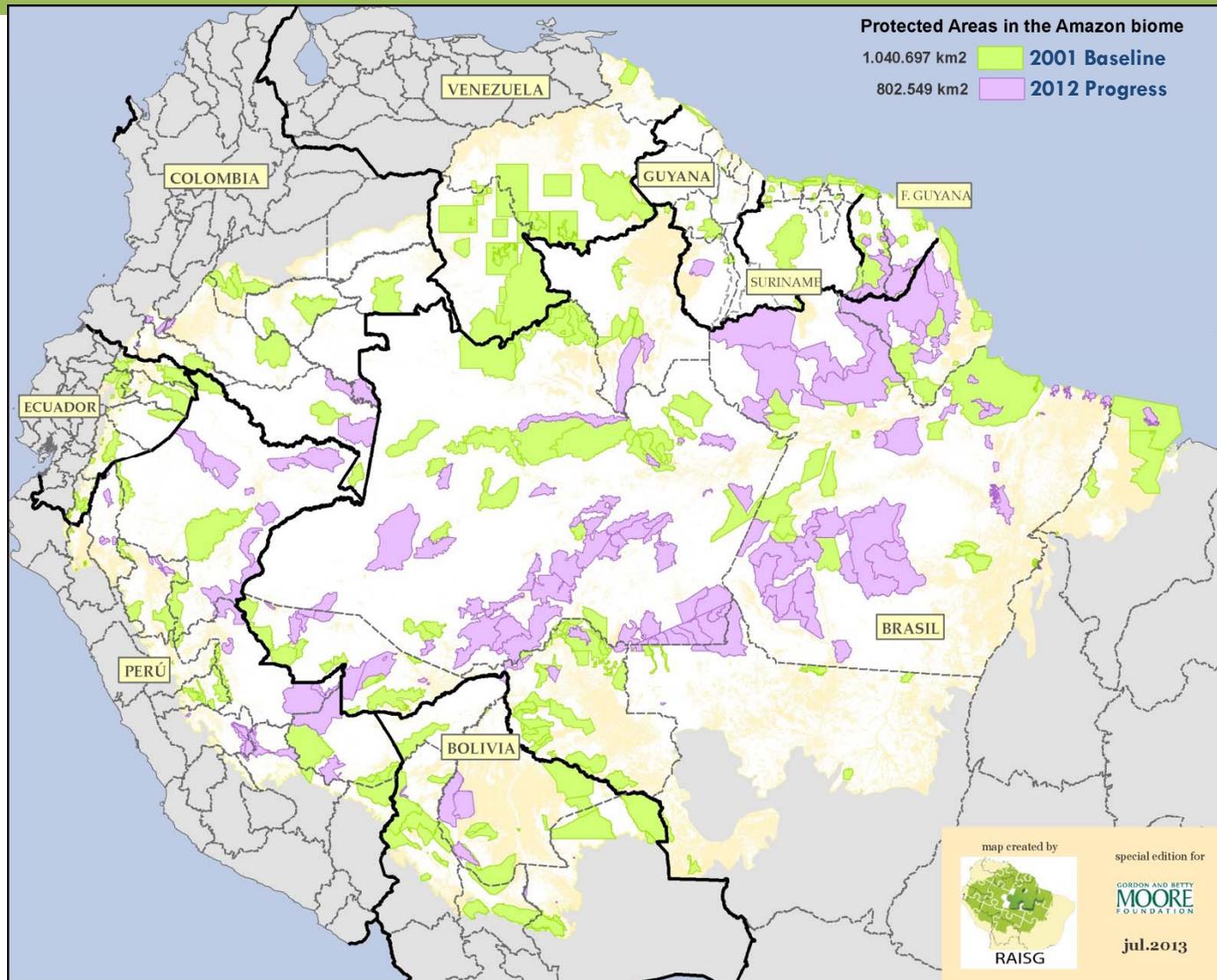
More environmental refugees are projected



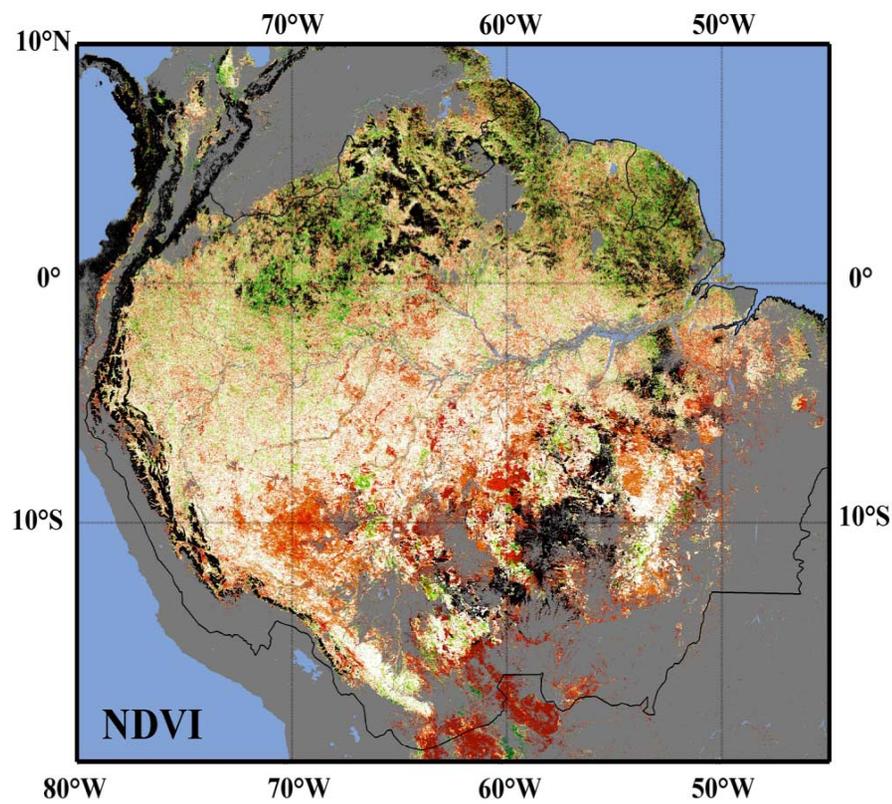
GEF's progress is at risk: Protected area coverage 2001



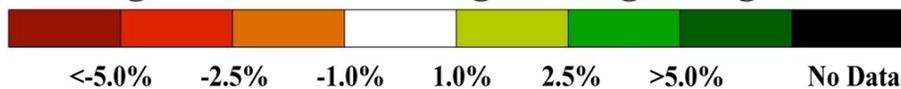
Protected area coverage 2001-2012



But, Amazon Dieback More Likely as Climate Changes



Vegetation Index Change During Droughts



Dry season in S Amazonia has lasted a week longer per decade since 1980 and annual fire season has lengthened.

During a severe drought in 2005, the Amazon released the equivalent of **10% of annual human emissions** to the atmosphere.

The Amazon drought of 2005 could become the norm rather than the exception by the end of this century.

PUTTING GEF'S GAINS AT RISK!

Promoting Environmentally Sustainable Development Requires:

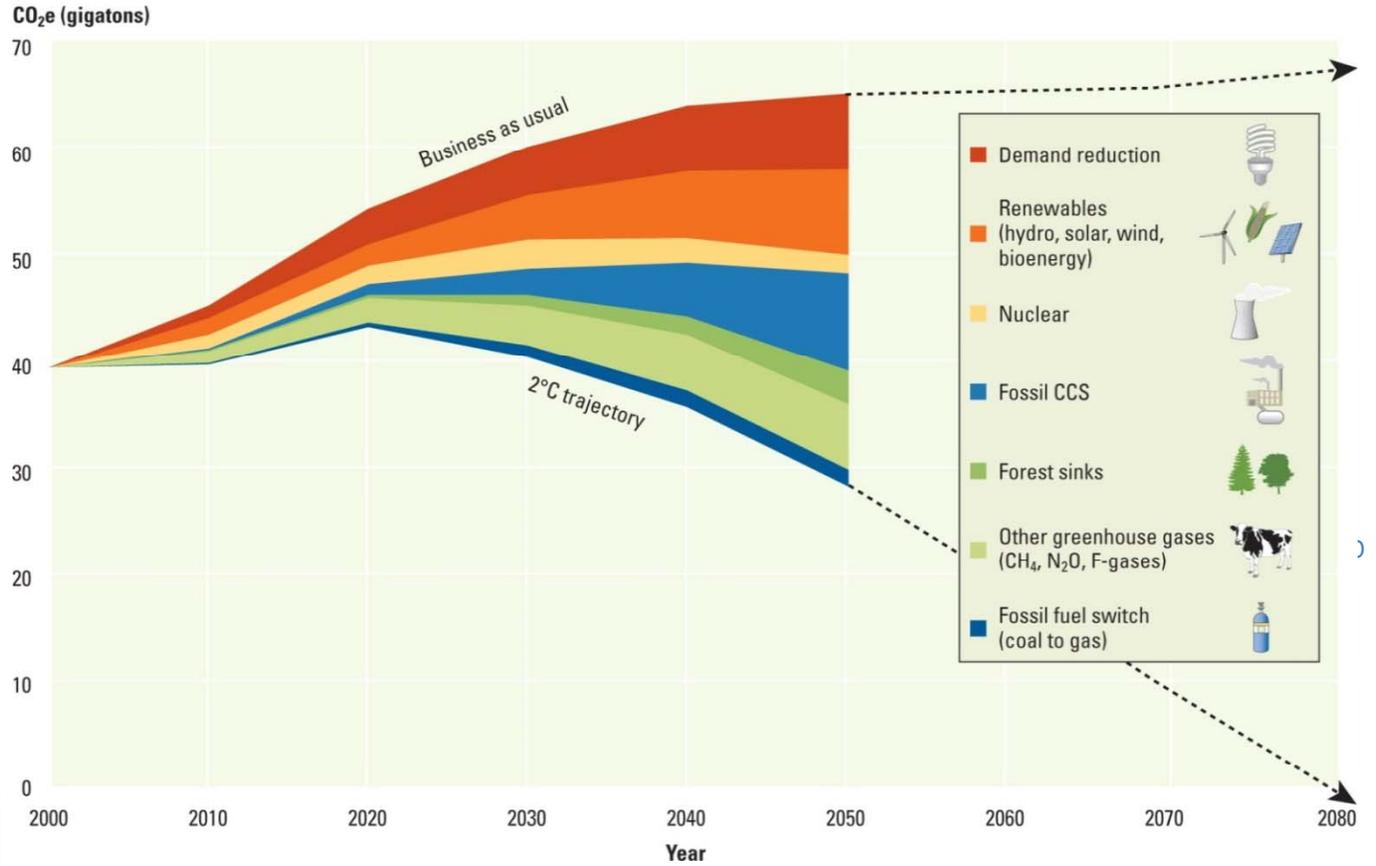
Acting Now

Acting Together

Acting Differently



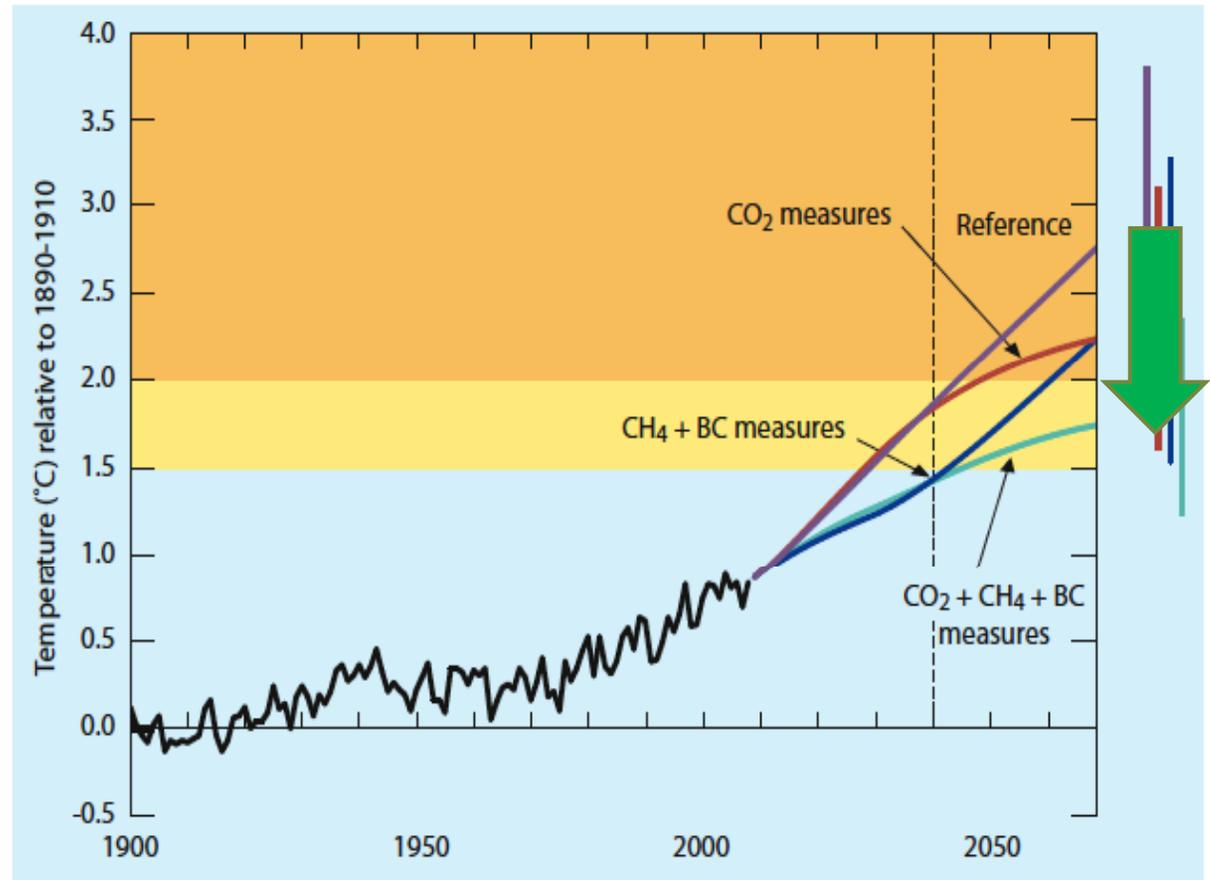
Act Now on Clean Energy



Act Now on Short-lived climate pollutants such as methane and Black Carbon



Reducing black carbon & methane in addition to carbon dioxide can put you on the **green** line and reduce temperature by up to 0.5 degrees

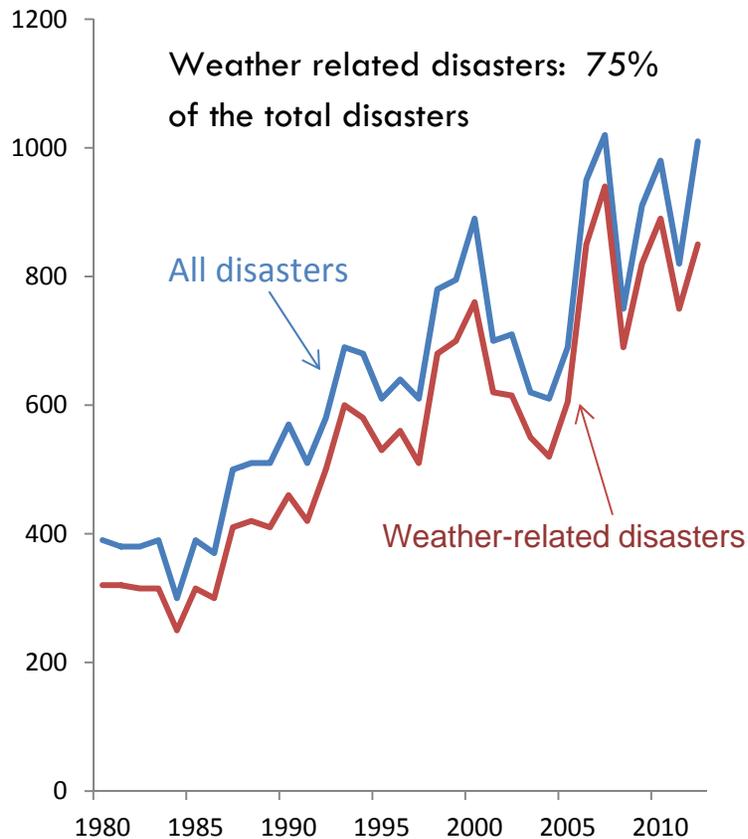


Source: UNEP/WMO, 2011

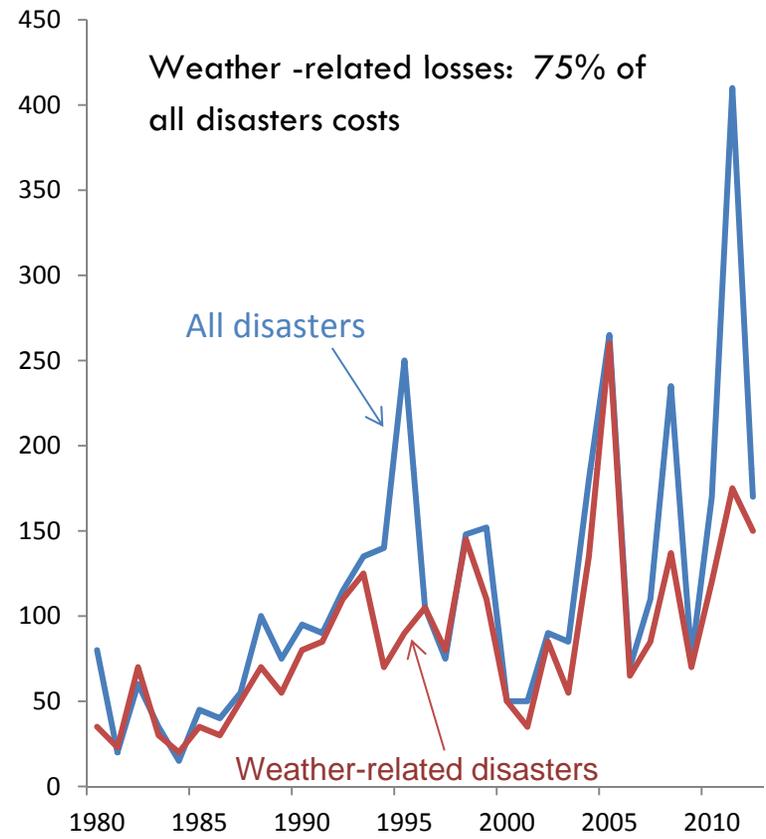


Act Now
to Adapt

Number of disasters worldwide (1980 – 2012)



Disaster-related losses (US\$ billion, 2012 values)



These include droughts,
Floods, severe storms.....



Act Together



Knowledge
Technology
Finance
Policy





Act Differently

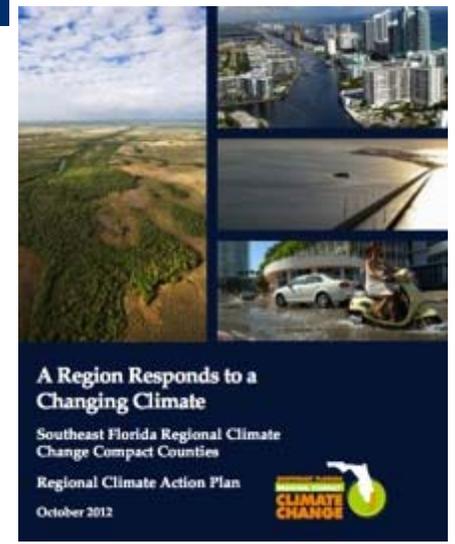
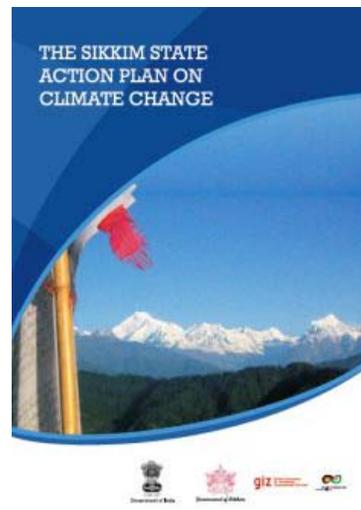
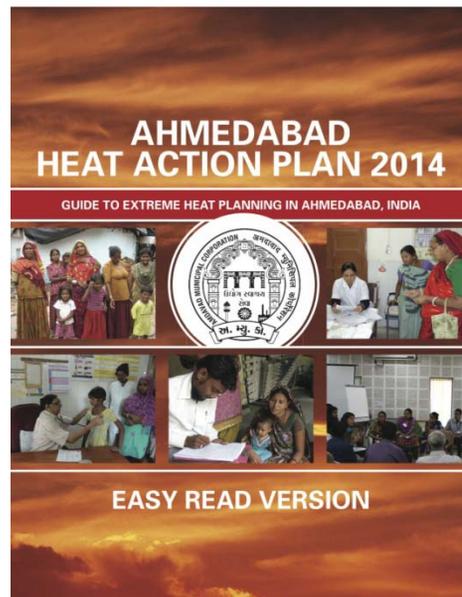
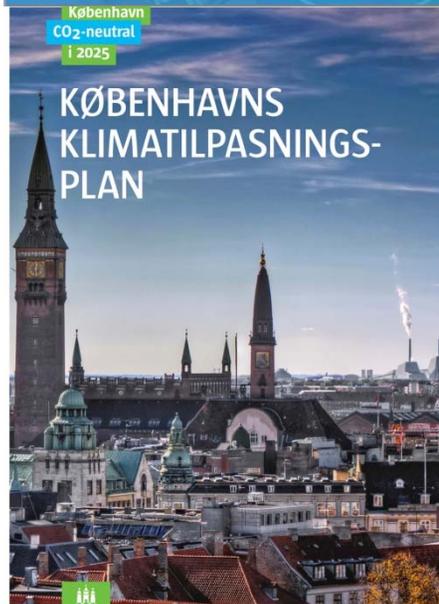
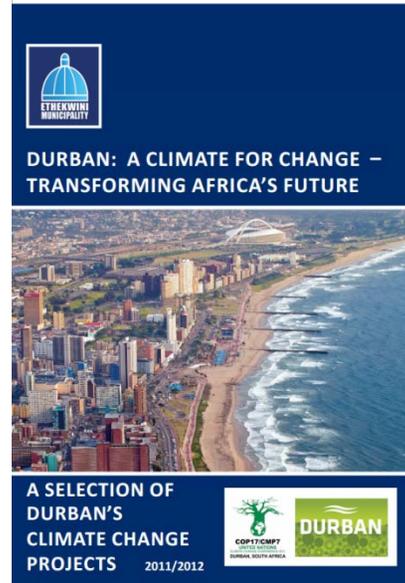
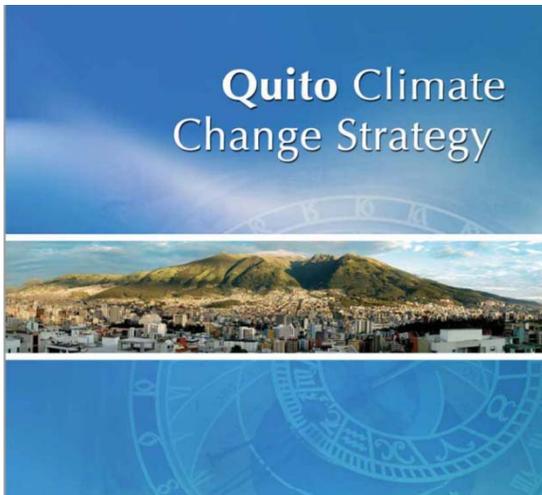


We must succeed: It's going to be a rough ride.....



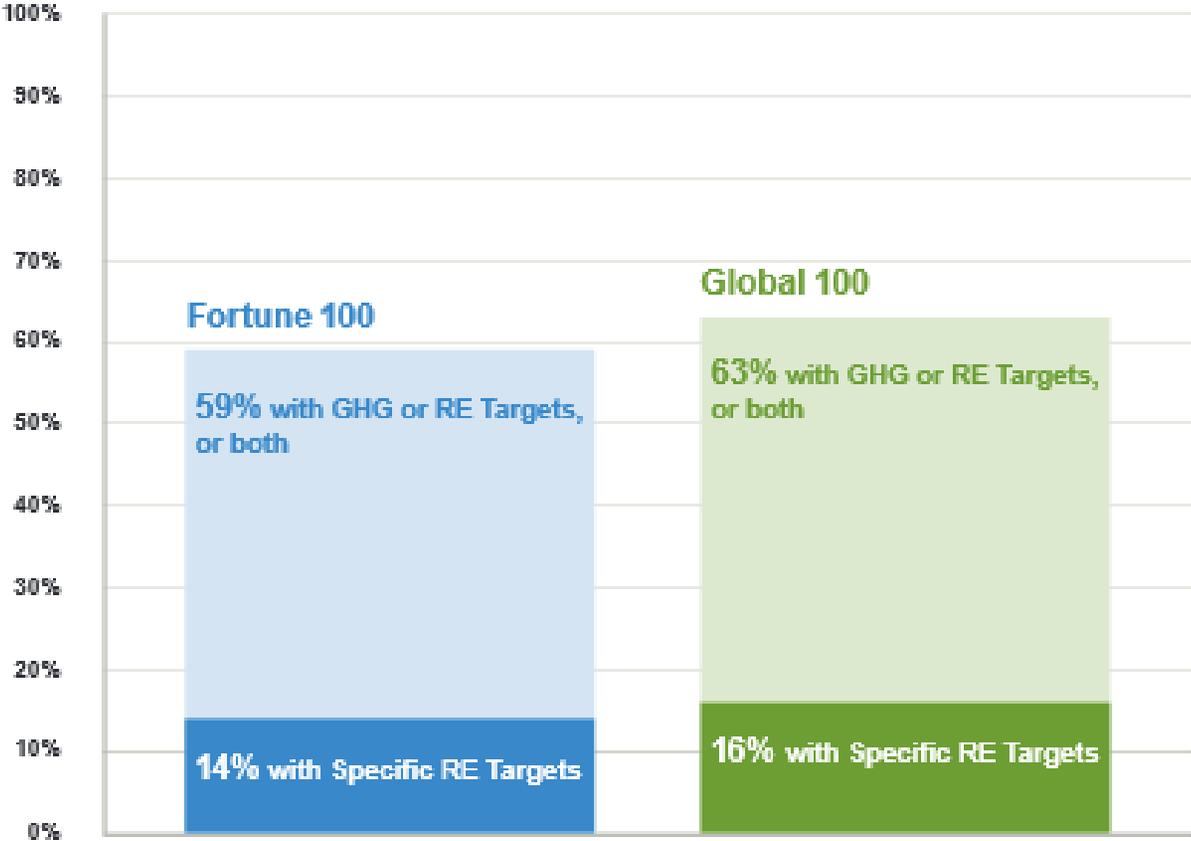
But there are signs of progress – actions from a variety of sources that promote environmentally sustainable development and combat climate change

Lots of Local Action



Some companies are Leading

Percentage of Fortune 100 and Global 100 Companies with Energy-Related Targets



...in part because the energy-water nexus is already present and very real problem

Water shortages hit US power supply

Updated 10:54 20 August 2012 by Sara Reardon

OP-ED CONTRIBUTOR

Will Drought Cause the Next Blackout?

By MICHAEL E. WEBBER

Published: July 23, 2012 | 150 Comments

Austin, Tex.

China power crunch to worsen as drought slashes hydro

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Asia Risks Water Scarcity Amid Coal-Fired Power Embrace

(Reuters) - The worst drought to hit central China in half a century has brought water levels in some of

as bayou floods
Tue, May 17 2011
Japan keeps Fukushima

Bloomberg News

China, India Lack Water for Coal Plant Plans, GE Director Says

Connecticut nuclear power plant shut down one unit due to hot water from Long Island Sound

Published: Monday, August 20, 2012

Maharashtra: Parli power plant shuts down after severe water crisis

By Reported by Rashmi Rajput, Edited by Amit Chaturvedi | Updated: February 17, 2013 17:33 IST

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'Water becoming a serious constraint for power generation'

The power plant has an installed capacity of 1130 MW.

The Development Agencies are moving

Posted: 04/07/2014 11:41 am EDT | Updated: 04/07/2014 11:59 am EDT



In July, the World Bank will require all new projects funded by the International Development Association (IDA), to be screened for short- & long-term climate risks.

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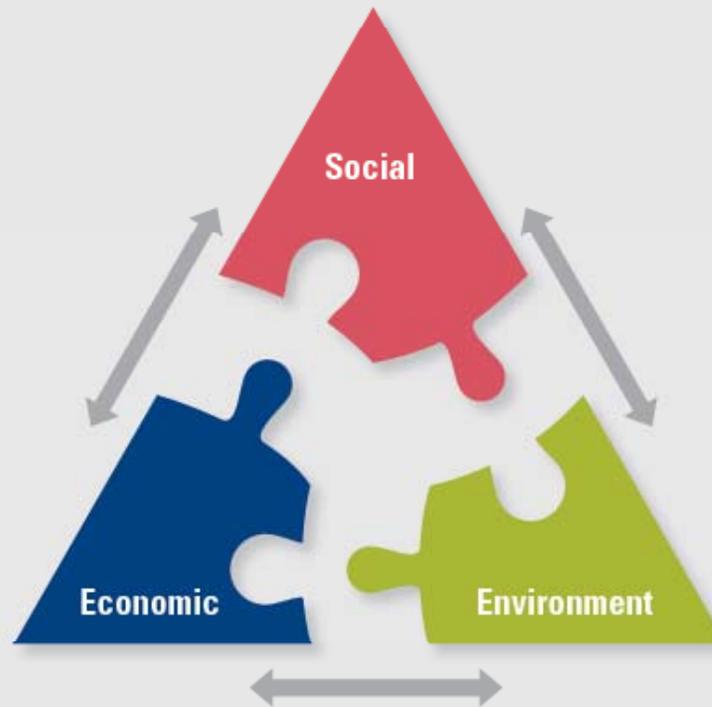
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MORE: Poverty , World Resources Institute, International Development, Multilateral Development Banks, World Bank, Coal, Climate Change Impacts, Andrew Steer, Climate Change, Global Poverty, Greenhouse Gas Emissions, Climate Risks, Climate Change, Poverty Alleviation

STAP's Vision for GEF-6

“Secure the sustainable delivery of global environmental benefits through investments in collective action to sustain Earth’s life-support systems, resulting in improved human well-being and social equity”

Three components of environmentally sustainable development



Economic

- Services
- Household Needs
- Industrial Growth
- Agricultural Growth
- Efficient Use of Labor

Social

- Equity
- Participation
- Empowerment
- Social Mobility
- Cultural Preservation

Environment

- Biodiversity
- Natural Resources
- Carrying Capacity
- Ecosystem Integrity
- Clean Air and Water

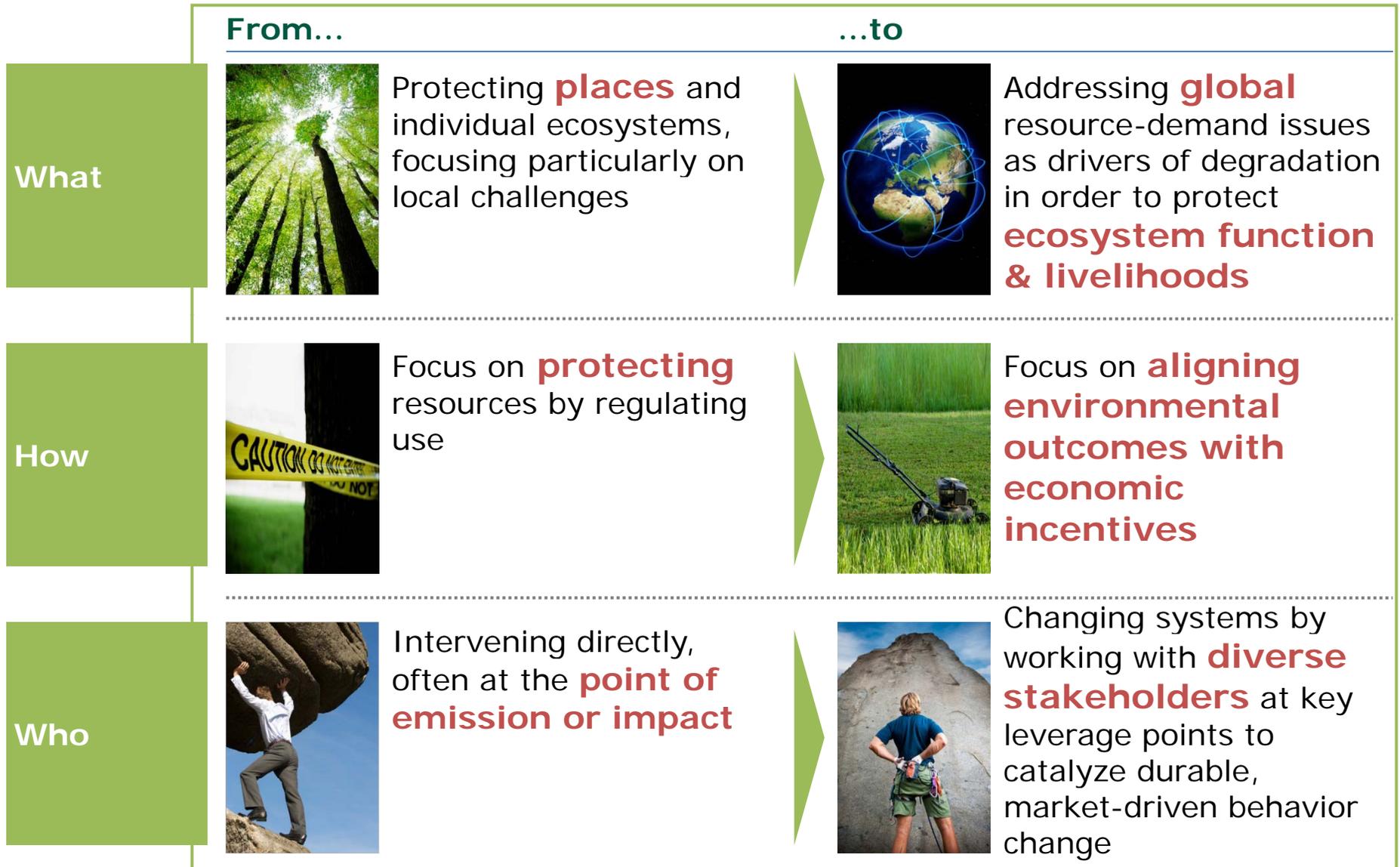
Source: <http://www.worldbank.org/depweb/english/sd.html>

“The GEF’s work focuses on an absolutely central challenge... the challenge of ensuring that continued growth and prosperity happens in a way that does not fundamentally jeopardize the very foundation upon which we have built our societies”

- GEF 2020 Strategy, May 2014



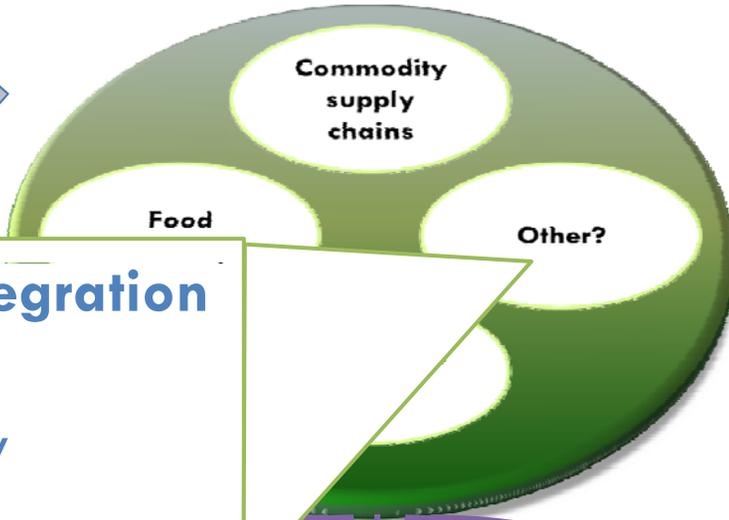
Environmentally sustainable development involves systemically tackling the “drivers”



OUTCOMES



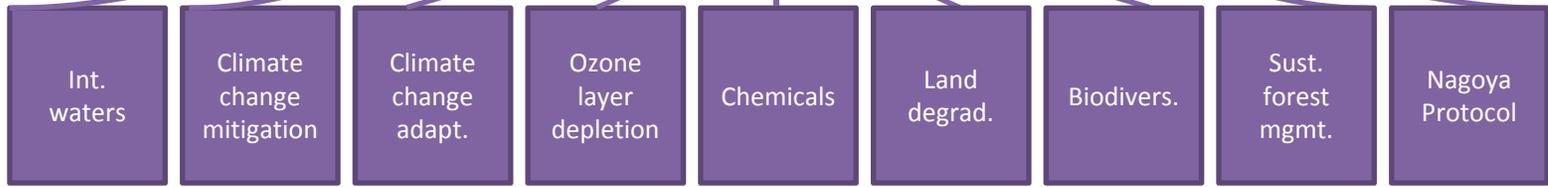
OPPORTUNITIES FOR INTEGRATED ACTION



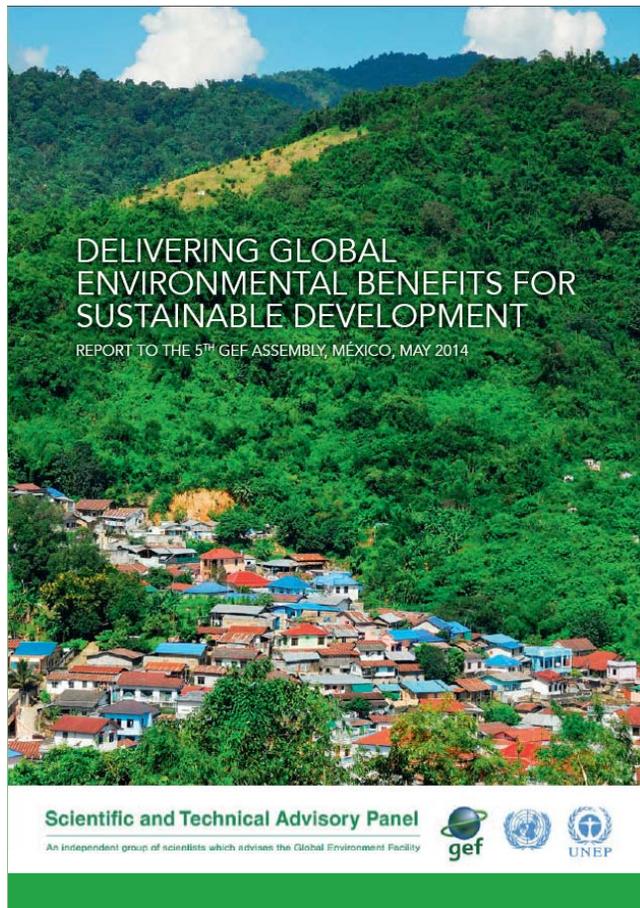
Possible areas for integration

- Climate resilience
- Environmental security
-

THEMATIC AREAS



Key Messages



1. Environmental degradation must be tackled in a more integrated and holistic way
2. Sustainable development should be at the core of GEF interventions
3. The GEF should continue to be catalytic and innovative while actively seeking to effect permanent and transformational change

Questions and comments welcomed



Rosina Bierbaum

Chair

GEF's Scientific and Technical Advisory Panel

www.stapGEF.org