SCIENTIFIC AND TECHNICAL ADVISORY PANEL

PRESENTATION TO THE 5\textsuperscript{TH} GEF ASSEMBLY

Rosina Bierbaum, STAP Chair
Delivering GEBs for Sustainable Development

- STAP’s vision for GEF-6
- New areas for integration
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) vs. Continued Emissions Increases (RCP 8.5)

Temperature Change (°F)

-15 -13 -11 -9 -7 -5 -3 -1 1 3 5 7 9 11 13 15

Precipitation Change (%)

-30 -20 -10 0 10 20 30

IPCC, WG 1, TS-1, 2013
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

Stott et al., Nature 432: 610-613
More environmental refugees are projected

Population living within 100 km of the coast
- None
- Less than 30%
- 30 to 70%
- More than 70%

Shoreline
- Most altered
- Altered
- Least Altered
- Selected coastal cities of more than one million people

UNEP, Global Environmental Outlook-4
GEF’s progress is at risk: Protected area coverage 2001
Protected area coverage 2001-2012

Protected Areas in the Amazon biome
1,040,697 km²  
802,549 km²

Protected areas: 2001 Baseline, 2012 Progress

Map created by RAISG
Special edition for Julian Moore
Jul 2013
But, Amazon Dieback More Likely as Climate Changes

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
Number of disasters worldwide (1980 – 2012)

Weather related disasters: 75% of the total disasters

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

Weather-related losses: 75% of all disasters costs

All disasters

Weather-related disasters

These include droughts, floods, severe storms.....
Act Together

Knowledge
Technology
Finance
Policy

Source: World Bank WDR 2010
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

Photo: Nicolas Reusens Boden
Lots of Local Action
Some companies are Leading

....in part because the energy-water nexus is already present and very real problem
The Development Agencies are moving 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.
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

“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”

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<tr>
<th>What</th>
<th>From...</th>
<th>...to</th>
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<td>Protecting places and individual ecosystems, focusing particularly on local challenges</td>
<td>Addressing global resource-demand issues as drivers of degradation in order to protect ecosystem function &amp; livelihoods</td>
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<th>How</th>
<th>Focus on protecting resources by regulating use</th>
<th>Focus on aligning environmental outcomes with economic incentives</th>
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<th>Who</th>
<th>Intervening directly, often at the point of emission or impact</th>
<th>Changing systems by working with diverse stakeholders at key leverage points to catalyze durable, market-driven behavior change</th>
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Environmentally sustainable development

Possible areas for integration

- Climate resilience
- Environmental security
- .......

THEMATIC AREAS

- Int. waters
- Climate change mitigation
- Climate change adapt.
- Ozone layer depletion
- Chemicals
- Land degrad.
- Biodivers.
- Sust. forest mgmt.
- Nagoya Protocol
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