

# Bridging Global Environmental Science & Policy

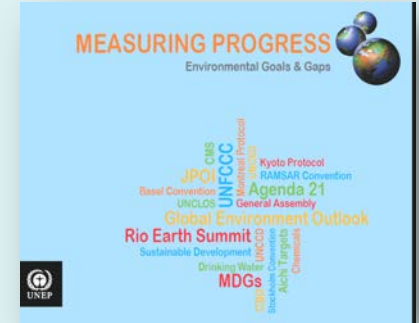
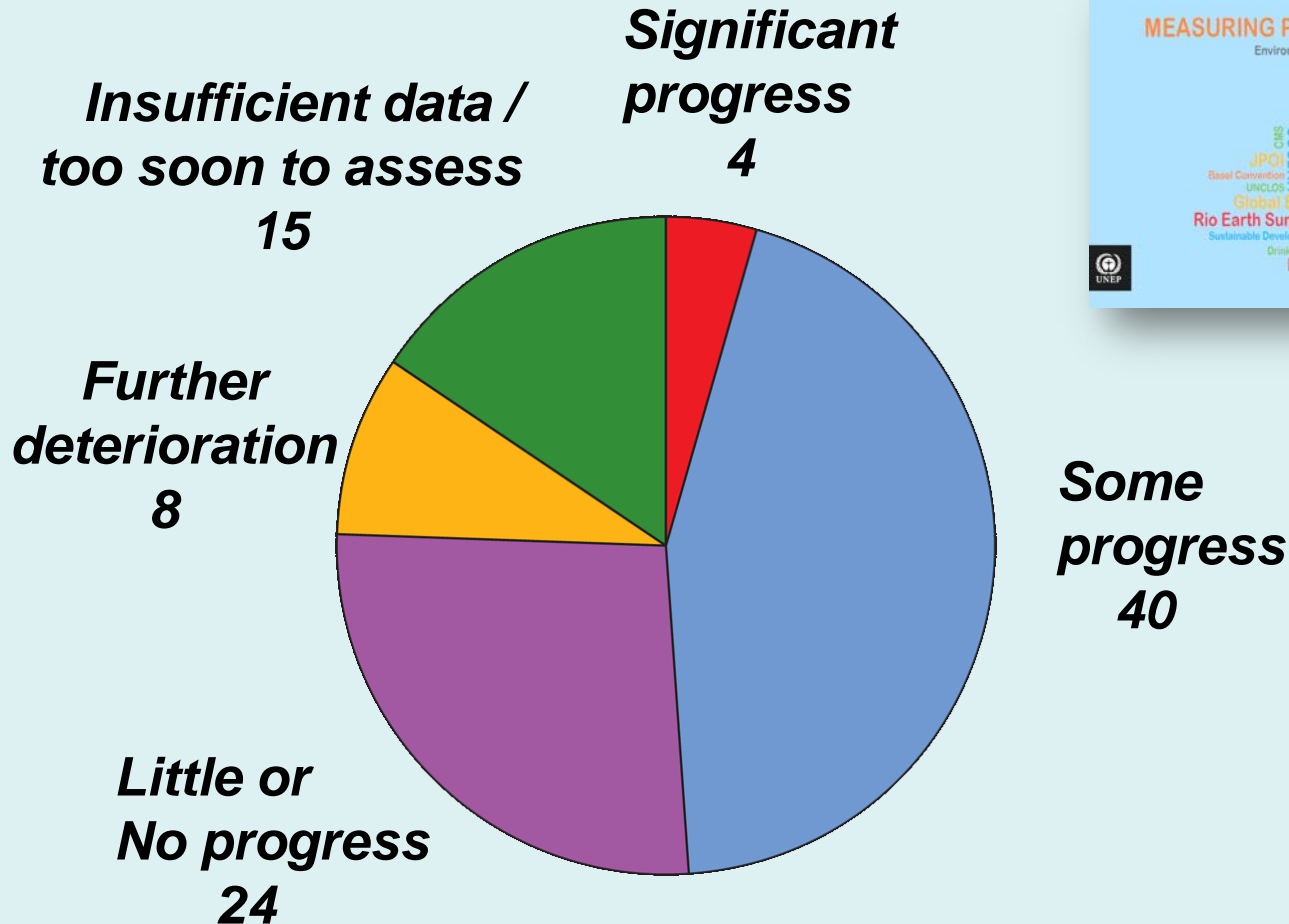


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**GAIA-Jahrestreffen 2014**  
**Kassel, 21.-22. März 2014**

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# How are we doing? Vantage point of policymakers

## Progress towards 90 internationally agreed env goals and objectives



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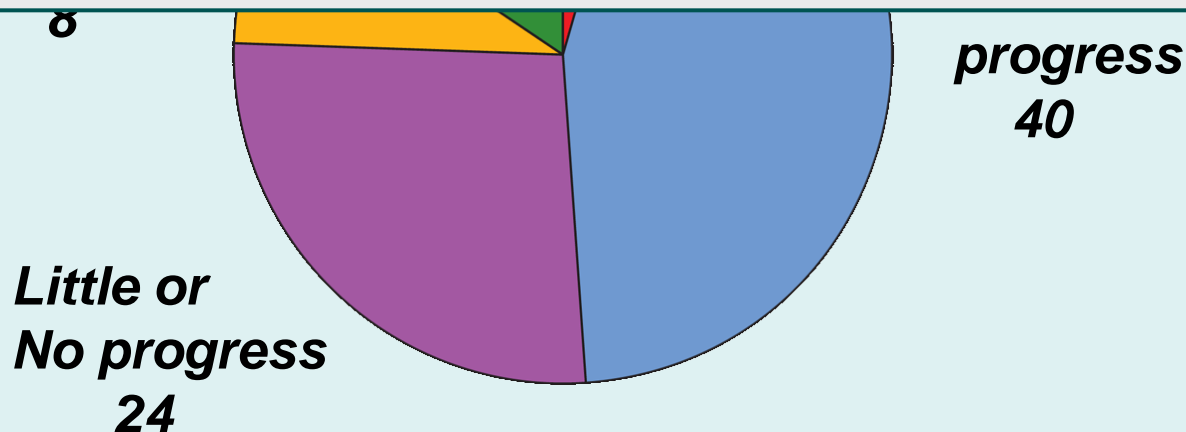
*Insufficient data /*

***Significant  
progress***



“ ... factors that appear to increase the chances of success in meeting environmental goals ...

*... support from an organized scientific community, scientific consensus on the problem ...”*



# How are we doing? Vantage point of policymakers



Rio+20. Para 8(d) *Promote a strong science-policy interface ... to support informed decision-making.*



# How are we doing? Vantage point of scientists

## What did the UNEP Foresight Process find out?



### What is the foresight process ?

Scientists informing UN community and society-at-large about critical emerging issues having to do with the global environment → Input to Rio +20

Systematic procedure for canvassing top experts → identify & rank critical emerging issues

Foresight Panel (22 distinguished scientists/experts) + wide electronic survey

**Output → *21 Issues for the 21<sup>st</sup> century***  
**Major environmental themes & cross cutting issues**

# 21 Issues for the 21<sup>st</sup> Century



**Ranked 4<sup>th</sup>  
Broken bridges:  
Reconnecting science and policy**

## **The Challenge:**

- √ Science-policy linkage deteriorating
- √ Public confidence low



# So what's the problem?



## Broken bridges – The Consequences

- Increasing tension between the two communities → hindering communication.
  - Scientists have fewer incentives to make their outputs policy-relevant
- 
- Public/government → inadequate knowledge to intervene in environmental problems
  - Society less equipped & less successful in managing the risks of global environmental change.  
(UNEP Foresight report)

# So what's the problem?



## Broken bridges – Why?

- Communication gap among scientists & policy makers' (The Arctic Climate Change and Security Policy Conference)
- Lack of responsiveness to requests for analysis
- Mismatch in timing -- Lack of timeliness of knowledge delivery
- Knowledge fragmented across many institutions & databases (UNEP Foresight)



# So what's the problem?



## Broken bridges – Why?

(UK) Environment Research Funders Forum  
Holmes & Clark, 2008

- Research results not policy-relevant
- Research outputs not accessible (Also Campbell, 2007)
- Reliability of research results unclear
- Policymakers do not try to include research in early stage policy debates
- Policymakers/stakeholders should be more engaged in framing research topics, but they're not → When they are, they don't formulate research questions well

# Repairing bridges



## **A strategy to repair bridges?**

Actions to generate scientific knowledge for policy should be:

- Responsive and relevant
- Timely
- Credible
- Legitimate
- Clear

# “Shortening the distance betw scientists & policymakers”

## Example 1: Action on short-lived climate pollutants

**Short-lived climate pollutants:** Cause global warming & relatively short-lived in the atmosphere.

*Black carbon, methane, tropospheric ozone, hydrofluorocarbons (HFCs)*

**Multiple benefits of reducing short-lived climate pollutants:**

- Reduce air pollution - Protect health and crops
- Slow down near-term global warming, reduce regional impacts of climate change



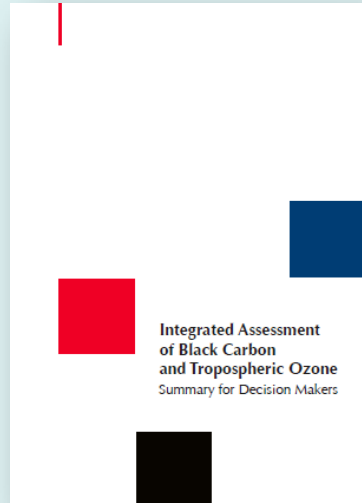
# Example 1: Action on short-lived climate pollutants

Since 1970s  
or earlier

Basic  
atmospheric  
research on  
black carbon,  
tropospheric  
ozone, ...



2008-11

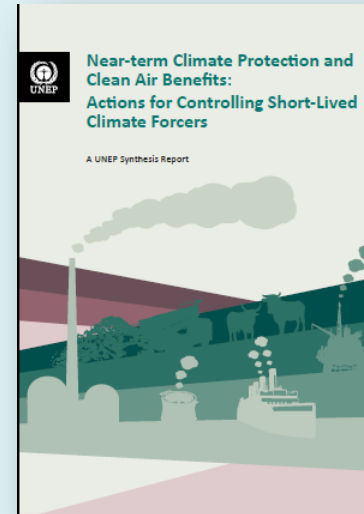


UNEP/WMO +  
other scientific  
assessments

Discussions between  
policymakers & scientists  
at political fora



2011



Rapid response  
report  
+ workshops





# Example 1: Action on short-lived climate pollutants

## Climate and Clean Air Coalition

Feb.2012: 6 countries + UNEP

End 2012: 27 countries (+EU) + 23 non-state partners

End 2013: 80 partners

Initiatives:

Reducing emissions from:

- Heavy duty diesel vehicles
- Brick production
- Municipal solid waste
- Oil and natural gas production

Promoting HFC alternative technology



# “Shortening the distance betw scientists & policymakers”

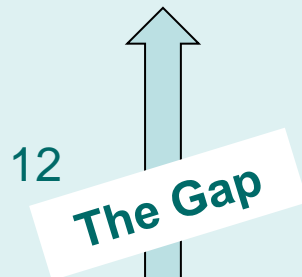
## Example 2: Closing the emissions gap

### What is the Emissions Gap?

**Global emissions  
GtCO<sub>2</sub>e/yr in 2020**

Business  
as usual 59

Pledges –  
weakest case 56



Level consistent  
with likely chance  
of staying within  
2°C target

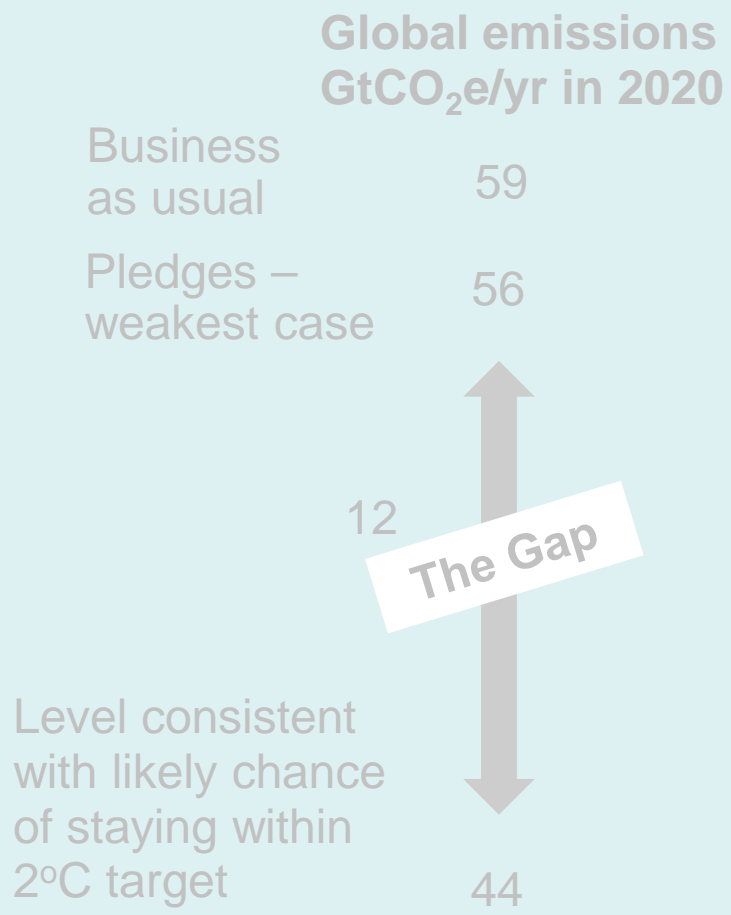
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# “Shortening the distance betw scientists & policymakers”

## Example 2: Closing the emissions gap

### What is the Emissions Gap?



### Emissions Gap Reports 2010-2014

Rapid response reports

Honest broker

- Changes in emissions + gap
- Consequences of not closing gap
- Bridging the gap



# Repairing bridges



## Metrics of success?

### Shorter term

- Requests for briefings
- Media coverage
- Use in negotiations (e.g. in opening statements of delegations)

### Longer term

- New organizations
- New executive actions
- New legislation

International New York Times

Europe

WORLD | U.S. | N.Y. / REGION | BUSINESS | TECHNOLOGY | SCIENCE | HEALTH | SPORTS | OPINION

AFRICA | AMERICAS | ASIA PACIFIC | EUROPE | MIDDLE EAST

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### United Nations Group Warns on Emissions

By DAVID JOLLY  
Published November 5, 2013

PARIS — Major polluters must immediately begin to reduce greenhouse gas emissions if the rise in global temperatures is to be held in check, or else a higher price will have to be paid later, according to a report released Tuesday by the United Nations Environment Program.

While a failure to act swiftly will not necessarily doom the effort to limit the rise in global temperatures to 2 degrees Celsius, or 3.6 degrees Fahrenheit, above preindustrial levels, it will make it much harder and more expensive to do so, the agency said in its latest [Emissions Gap Report](#). The authors said delay today would require more drastic measures in the future as well as a

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# Repairing bridges



## A strategy to repair bridges?

Rapid Response Reports: Emissions Gap as example:

- *Responsive and relevant.* Address key “adequacy” question of negotiations
- *Timely:* ~ 6-12 month turnaround; pre-summit release
- *Credible* – 44 scientific groups, convening power Chief Scientists Office
- *Legitimate* – Requested by policymakers, produced by UN
- *Understandable* < 50 pp., Executive Summary clear

# Robust bridges: Next steps



## Action now : New era intensive cooperation science & society

- “Shorten distance between science & policy”  
→ Rapid response scientific studies, among others ...

- Bring together scientists and policymakers:  
Integrated environmental assessments, scenario exercises, adaptive environmental management
- Redesign architecture of global change research  
→ **Future Earth” Initiative**
  - “Co-design” of research
  - Governance structure – Include producers and users of science
  - Policy-context

# So what can be done?



- Send out cadres of “interpreters” → *Chief Scientists, Special Science Advisors, Facilitators...*
- Press the potential of *transdisciplinarity* → “Strong engagement”, partnership of researchers with stakeholders. → Time for summing up experience?
- Science-training of potential policymakers, Policy-training of potential scientific advisors
- Accelerate development → *Sustainability science*  
(problem-oriented; policy-relevant; ecological foundation with social and economic dimensions; human-environment interactions, transdisciplinary/interdisciplinary/multi-disciplinary)

# Summing up: The way to robust bridges



## Broken bridges: Reconnecting science and policy



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