

1. Science, Policy and Practice: How Can the Gaps be Reduced?

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2. Science, Policy, and Practice.

- Climate science and adaptation science.
- Adaptation practice in relation to incremental change, and extreme events.
- Policy to facilitate, promote and mandate adaptation.

3. The role of climate science.

- To put climate change on the agenda.
- “to reduce uncertainties”?
- Uncertainty has increased as climate science has advanced.
- Deep uncertainty about the emission scenarios; the rate, magnitude and spatial distribution of climate changes, incremental change and variability and extremes.
- Emergence of new impacts: ocean acidification, tropical cyclone intensity.
- Uncertainties both global and local.

4. The role of adaptation science.

- Rapid growth and recognition of the role of adaptation.
- Emergence of an international research community.
- An abundant array of adaptation options has been identified by sectors.
- Adaptation science (and technology) are expanding the options – traditional, enhanced traditional, modern and advanced.

5. Inferences.

- More and better climate science is needed to make the case for mitigation, but do not expect it to reduce uncertainties or make adaptation policy or practice any easier.
- There is great potential in adaptation science but cost estimates are unreliable.
- There is a tendency to talk about “the limits of adaptation” when we ought to be demonstrating “what adaptation can or could achieve”

6. Adaptation in practice.

- Many manuals and “how to do it” guides are appearing.
- Mainstreaming climate risks is beginning in sectors, by types of risk, by locations.
- At the local, national and international level, and in bilateral and multilateral development agencies.
- Some positive results appearing.

7. BUT

- We face an enormous Adaptation Deficit.
- We are much less well adapted to climate change and variability and extremes than we could be, (or should be?).
- Disaster losses from extreme weather and climate related events are rising rapidly.
- Losses from less extreme climate-related events not well estimated, but probably increasing steadily if slowly.

8. Reducing the gaps between Adaptation science and practice.

- Two examples:
- Ontario Expert Panel on Climate Change Adaptation.
- ICSU – ISSC – UN ISDR. Forensic Disaster Investigations

9. Ontario Panel.

- Appearance before the Panel of leading government officials and managers, (Department by Department (15 different Departments or Ministries). E.g. agriculture, health, tourism, natural resources, municipal affairs and housing, etc.
- How are your current activities being affected by climate variability and extremes?
- What actions are you now taking or do you propose?
- How might these be strengthened or changed to to take climate change into account?

10. Responses

- Initially hesitant and reluctant, especially explained by uncertainties in climate science.
- Becoming more pro-active as the opportunities to improve public safety and reduce damages emerged. And the longer-term economic advantages were identified as well as mitigation co-benefits.
- Climate change seen as an additional lever to advance and improve current practice.
- Similarities to UK CIP.

11. Emerging Adaptation Policy (Ontario)

- No stand alone Adaptation Policy, but institutional arrangements to ensure continued mainstreaming of climate risks.
- Establish a programme of research to supply climate information (climate services), to supplement climate science.
- Establish a programme of outreach and communication to local governments, private sector and civil society.

12. Forensic Disaster Investigations

- Some key questions.
- Why are disaster losses increasing?
- Do we really understand the underlying causes?
- Is scientific knowledge inadequate?
- Is scientific knowledge not well integrated or applied?
- What do we really understand including the climate change factor?

13. A New Research Programme

- Previous programmes not sufficient.
- Integrated Research on Disaster Risk (IRDR – 10 year programme)
- Penetrate more deeply into fundamental causes. Broad multidisciplinary approach.
- Independent – arms length from government – air transport investigations.
- Responsibilities and a cultural shift.

14. Received Wisdom

- ‘Floods are acts of God, but flood losses are largely acts of man” Gilbert White 1945.
- “Disasters by Design” Dennis Milette 1999.
- SO ... what acts of man? What designs?
- Taking the “natural” out of natural disasters.
- Globalization of disaster risks and Climate changer adaptation. Not only local.

15. ICSU – ISSC – UN ISDR

- Integrated Research on Disaster Risk – IRDR.
- FORIN – Forensic Disaster Investigations.
- International Programme Office – Beijing.
- Irdr.beijing@gmail.com

16. Conclusions – 1.

- The gap between climate science and adaptation practice is growing and is unlikely to be reduced.
- Climate science is needed for mitigation policy
- Adaptation science is closely linked to practice and the gap is being reduced.
- Adaptation science is advancing in all sectors and an adaptation community of practice is growing rapidly.

17. Conclusions - 2

- Much is being achieved by mainstreaming adaptation into practice by sectors, by kinds of risk and by location (exposure).
- There is a challenge to reduce the adaptation deficit.
- In the case of extremes and disasters this is likely to take a cultural shift involving analysis of fundamental causes and sense of responsibility.

18. How can the gaps be reduced?

- The story of climate science and adaptation science suggests that it is better to first address the gaps between science and practice, and let the policy follow, than to address policy head on.
- Improve the practice and policy will follow.
- Is there a lesson here for GHG mitigation? By focussing on a global policy agreement we have lost almost 20 years since the UNFCCC was opened of signature in Rio de Janeiro in 1992

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