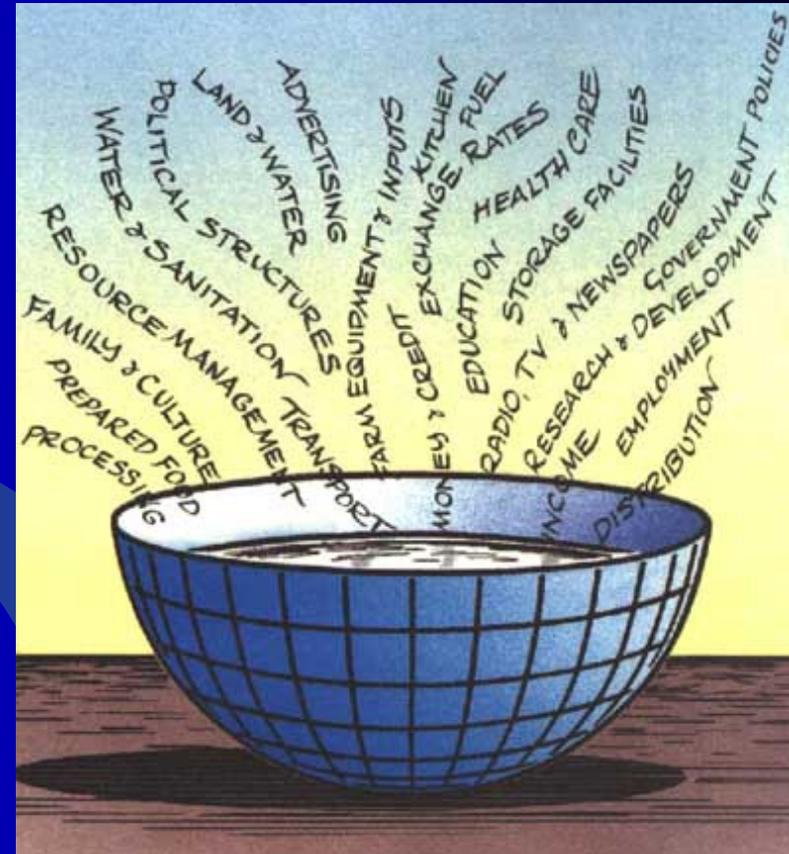


Michael Glantz

FAO Experts Meeting
Rome, Italy
5-7 March 2008

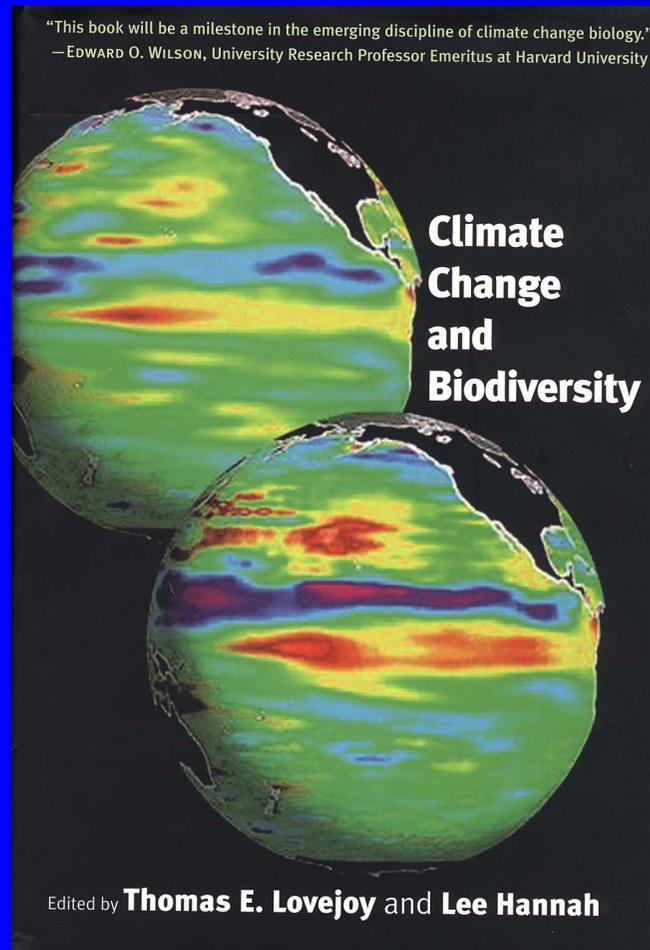


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My approach to adaptation, mitigation and prevention of climate change

- Paraphrasing an author (Lindblom) commenting on his book...
 - The background paper I prepared ...
 - “Does not offer sustained discussion on any issue raised”.
 - “Instead, it goes no further with each issue raised than to indicate it poses a challenge to research” **And to decision making as well.**

“You can’t put your foot in the same river twice” (or can you?)



- **The atmosphere is changing**
- **Society is changing**
- **Ecosystems are changing**
- **The challenge:**
 - **Understanding where and how they intersect, and**
 - **How societies of different types can cope with those intersections**

The 4th IPCC Assessment as “tipping point”



- **The Release in April 2007 of the 4th Assessment and the Nobel Prize for the IPCC convinced many that it was time to deal with climate change and its potential impacts**
- **Even skeptical corporations decided to end their opposition and to make it work for their benefit.**

Why I think this meeting is important to FAO

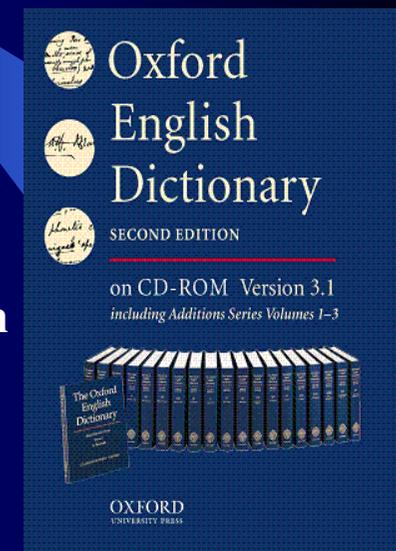
- **FAO has a ‘window of opportunity’**
- **Focus is shifting from IPCC Assessment for WG1 (Science) to WG2 (Impacts)**
- **Decision makers want to know about impacts in their jurisdictions**
- **‘Ecosystems’ is the interface between society and the atmosphere (climate)**



Adaptation, mitigation and prevention: whose definitions will prevail?

- **Adaptation:** “the process of modifying a thing so as to suit new conditions”; Anything modified to suit new uses
- **Mitigation:** “The principle meaning of the term ‘mitigation’ ... concerns the avoiding of the consequences of a wrong”;
 - Also, the action of moderating, softening, abating, toning down
- **Prevention:** “Action intended to provide against an anticipated problem or danger; a defensive measure”

- Source: Oxford English Dictionary



4 Laws of Ecology



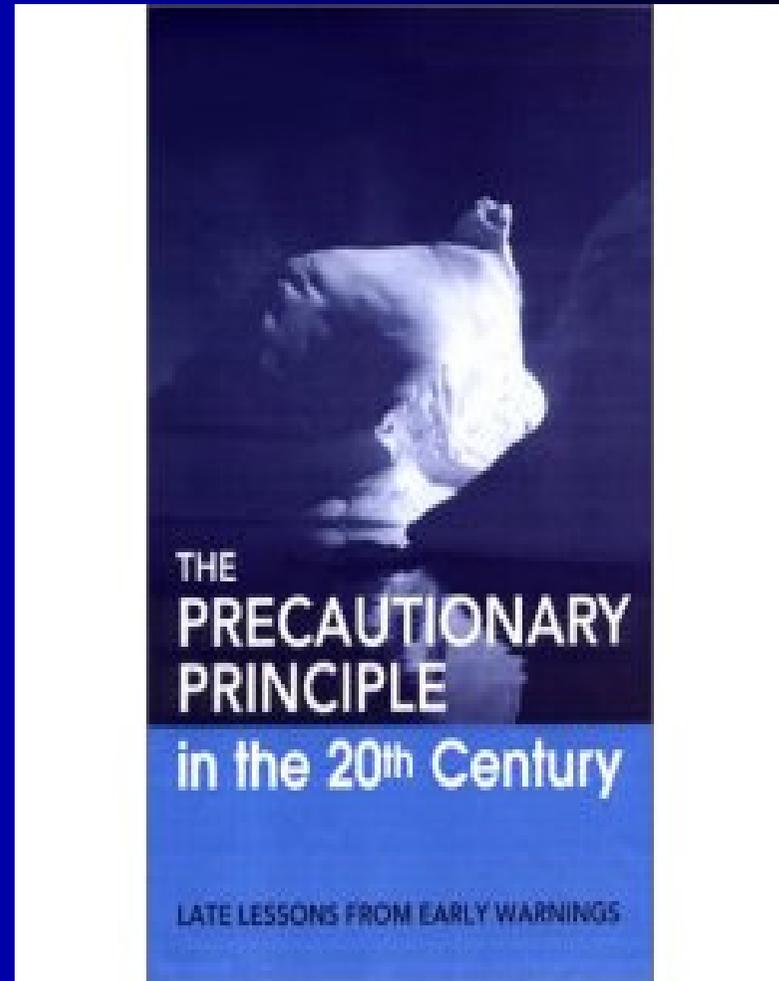
- 1st Law of Ecology
 - “Everything is connected to everything else”
- 2nd Law
 - “Everything must go somewhere”
- 3rd Law
 - “Nature knows best”
- 4th Law
 - “There is no such thing as a free lunch”

Food security *and* the 4 Laws of Ecology

- **Each of the “4 Laws of Ecology” has relevance for various aspects of the drive for food security.**
- **Policy makers must pay attention to them for the sake of sustainable agricultural activities.**

“Precautionary Principle”

- **“Governments should not use the lack of full scientific information as a reason to postpone action to prevent serious irreversible environmental damage”**
 - World Lake Vision Committee



Coping with climate change: two perspectives

- “What ought to be”
 - in a perfect world with perfect forecasts many actions can be taken to avoid impacts
- “What is”
 - Reality is that there is no perfect forecast, that societal responses to forecasts are not reliable, that there are socio-economic, political and cultural constraints operating at any given time that inhibit a perfect response by society



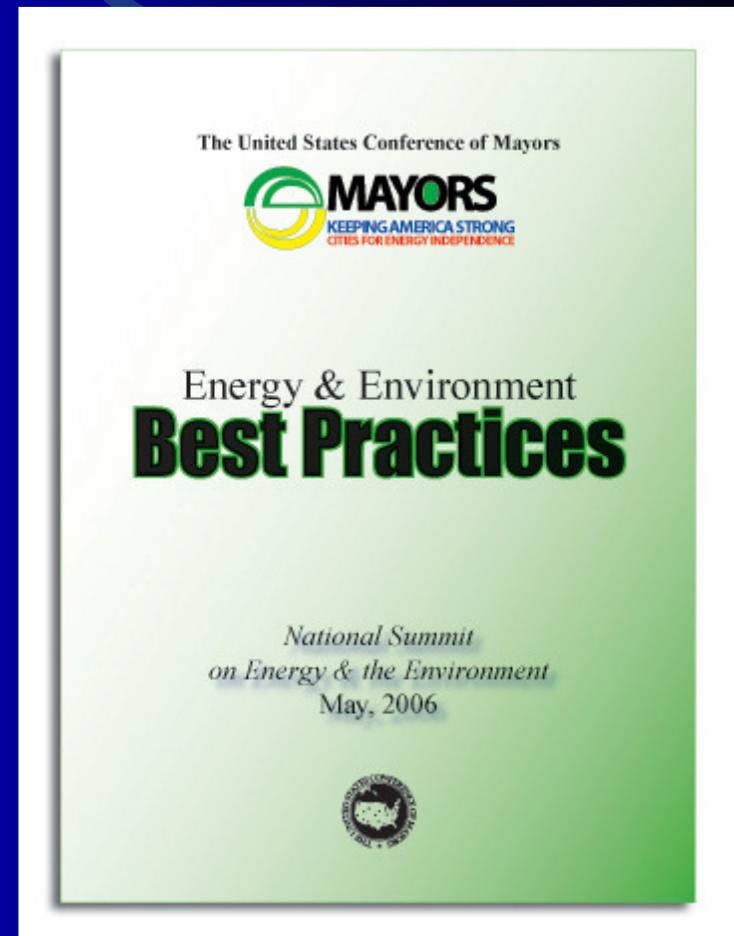
Winners & Losers in a warmer climate

- There are climate winners and losers in today's climate
- There will be climate winners and losers in the transition to a warmer climate
- It is not clear whether everyone loses in the long run if global warming is not controlled



Best Practices for enhancing food security

- “Best Practices”: likely identified in most places with different ecosystems
 - Best practices: likely to be effective as tactics in the near to midterm
 - Best Practices: not enough for coping with climate change in the long term



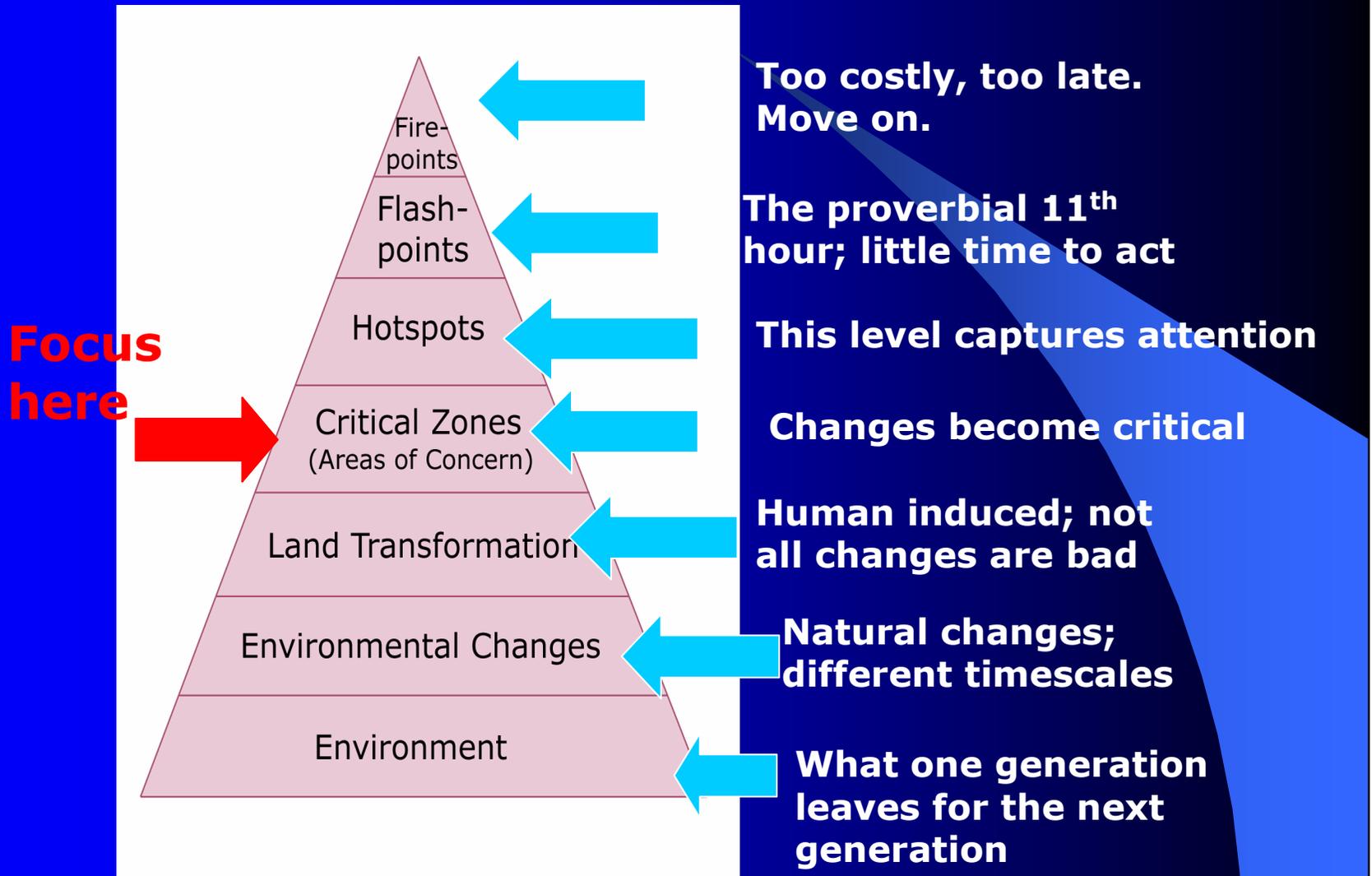
Rates & Processes of Change

- **Rates of change are as important as the process of change**
 - **Faster rates**
 - more difficult to cope with
 - **Slower rates**
 - easier to respond to but they can lull policy makers into thinking they have lots of time to act. Eventually slow rates have converted a small problem into a costly crisis

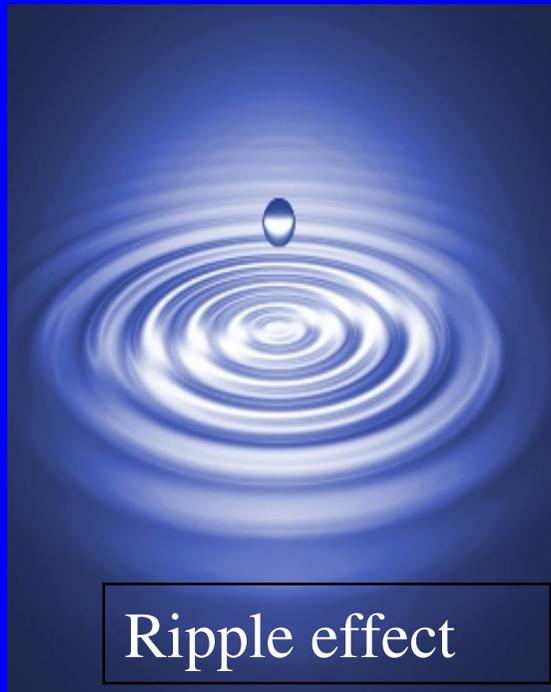
Creeping environmental changes

- **Most changes in the environment are of the creeping onset kind (slow, cumulative).**
- **Global warming resulting from GHG emissions is one example of such a change**
- **With such changes there are few threshold indicators.**
- **Thresholds are often identified after they have been changed.**
- **Governments do not deal well with the creeping changes in the environment until they approach a crisis stage.**

Thresholds of environmental change

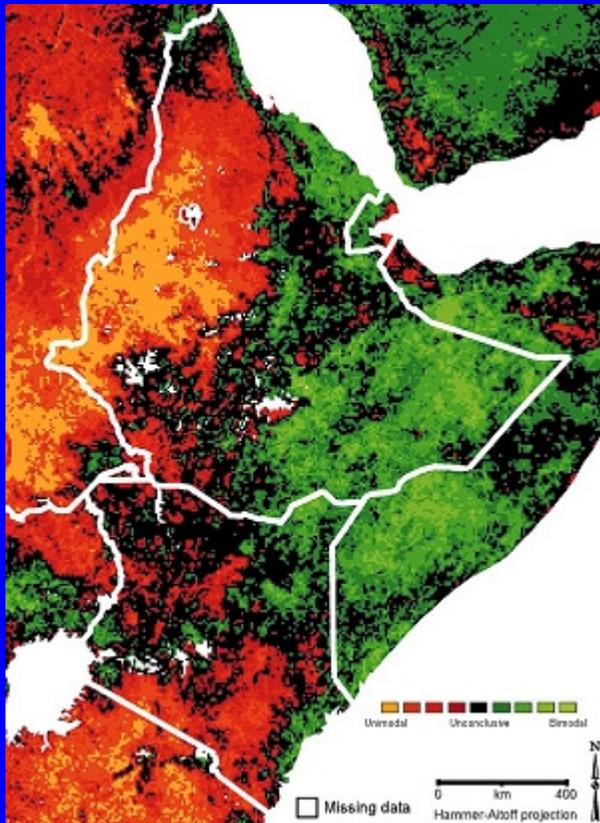


Mitigating the impacts of adaptation to climate change



- Adaptation is an on-going process, not just a one-time event.
- Each adaptive strategy or tactic will generate its own set of impacts.
- Societies must identify second- and third-order impacts of adaptation and prepare for them.

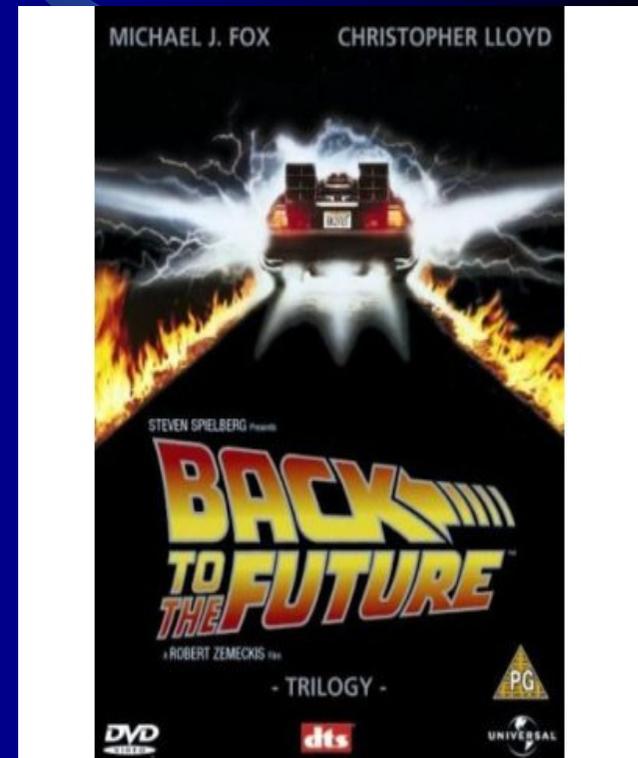
Global warming and changes in seasonality



- People live by the expected flow of the seasons
 - Hunting season, growing season, harvest time, disease outbreaks, water season, etc.
- Rainfall timing, intensity, location, extremes are expected to change
 - Societal activities that are climate, water and weather dependent will be affected in subtle ways.

The climate future is arriving earlier than expected

- Some of the changes associated with a warmer climate are appearing faster than expected
 - Melting of the Arctic sea ice
 - Greenland ice sheet melting
 - Rising sea level
 - Warm ecosystems moving upslope
 - Glaciers melting globally

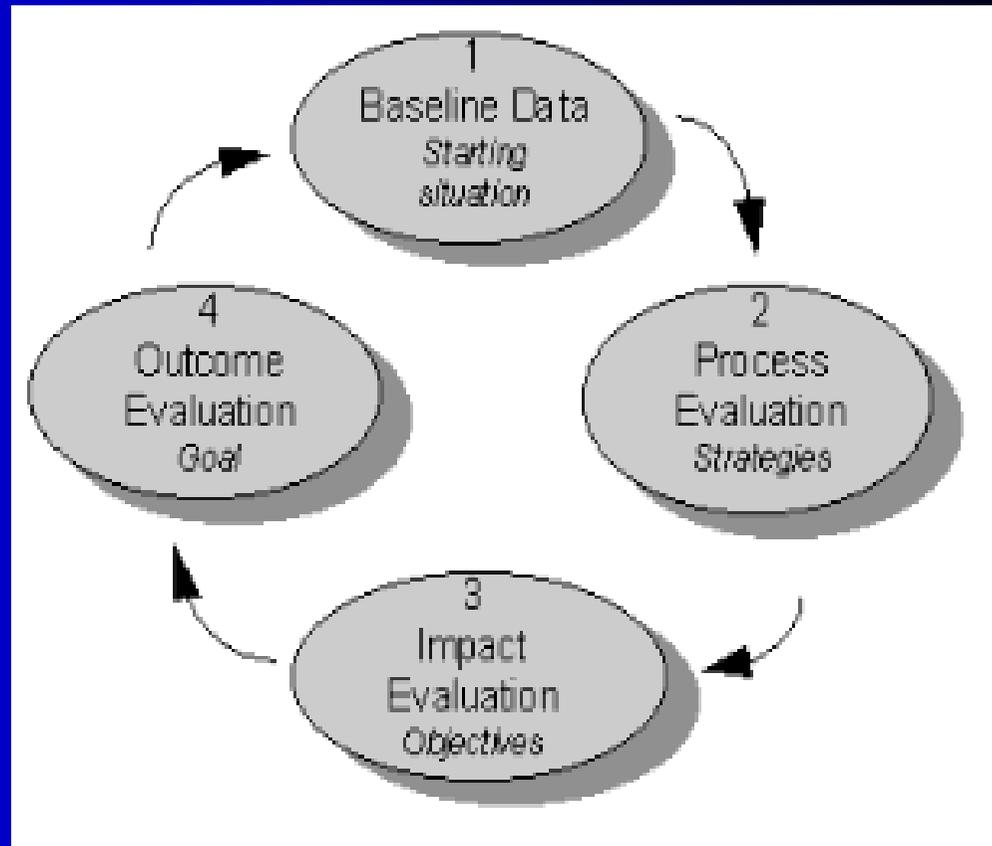


MHG's FAO slides addressing the 5 issues

1. baseline data
2. priority setting
3. capacity gaps
4. the way ahead for countries
5. the way ahead for FAO

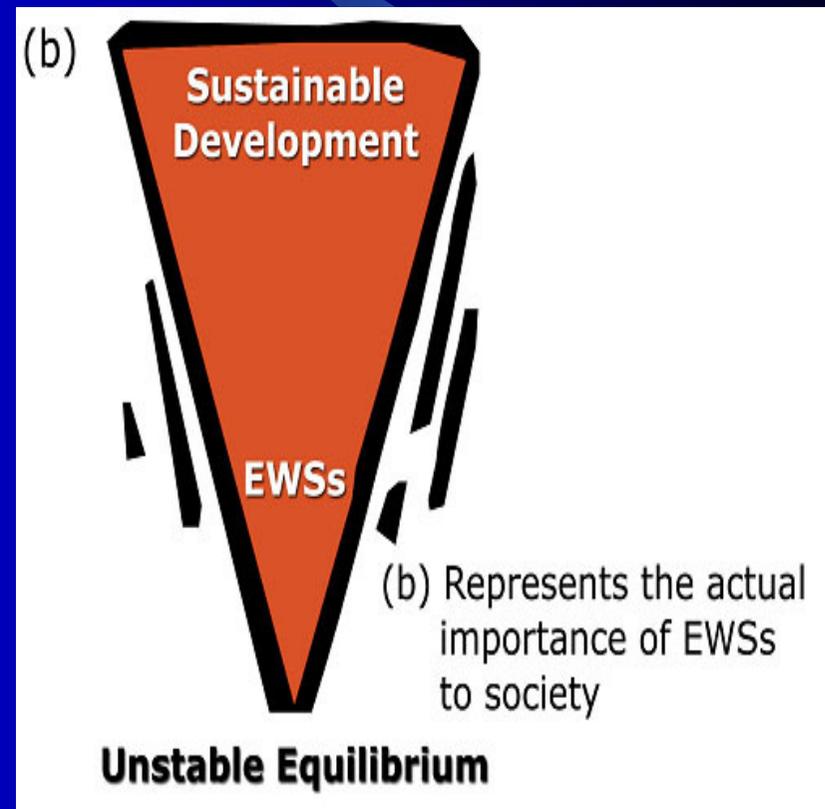
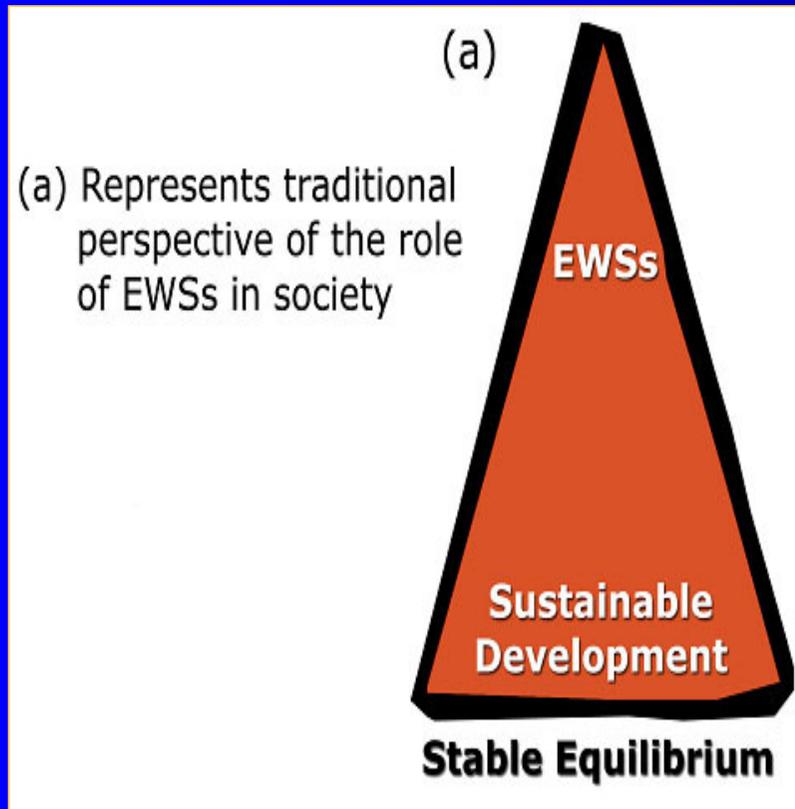
Baseline Data

- We must distinguish between what is interesting to know and what is essential for coping with global climate change and its impacts.
- Devise methods to link and integrate baseline data and information compiled for different temporal and spatial scales in different eco-settings.



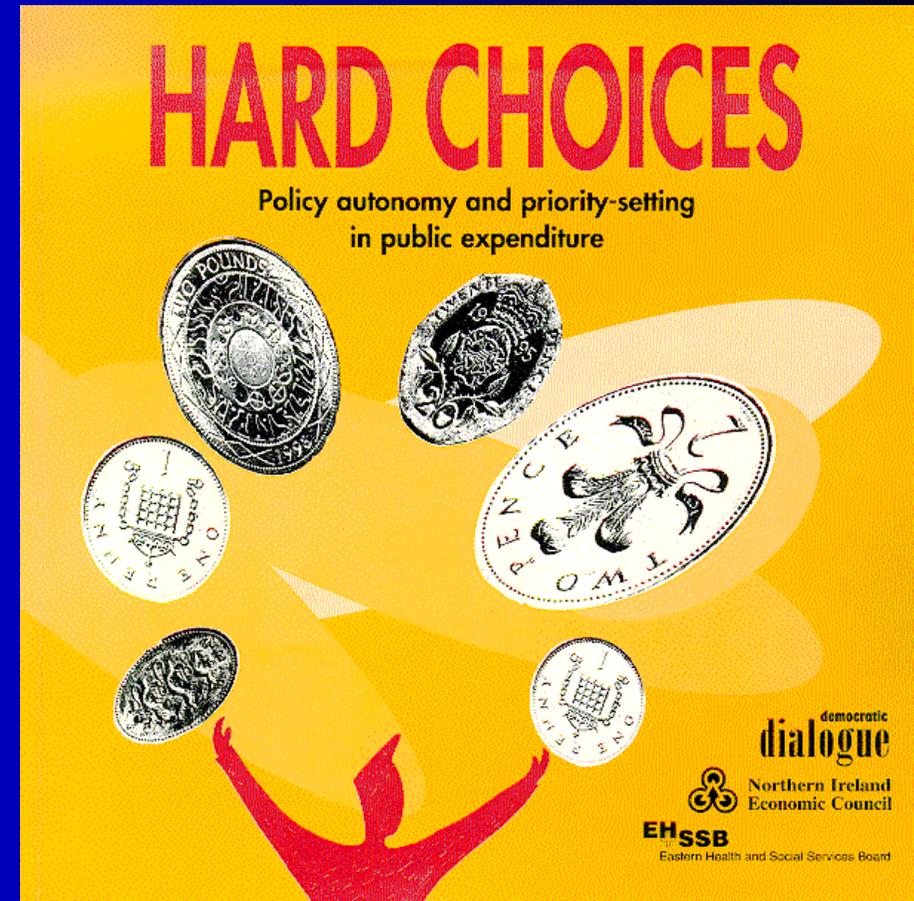
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EWS more important than some governments realize



Priority setting

- Governments and institutions must decide about how they are going to plan to decide about preventive, adaptive, mitigative responses to climate change and its impacts, local to global.
- Each institution, government and society must prioritize within its jurisdiction its strategic and tactical responses to areas that are foreseen to be at risk to climate change

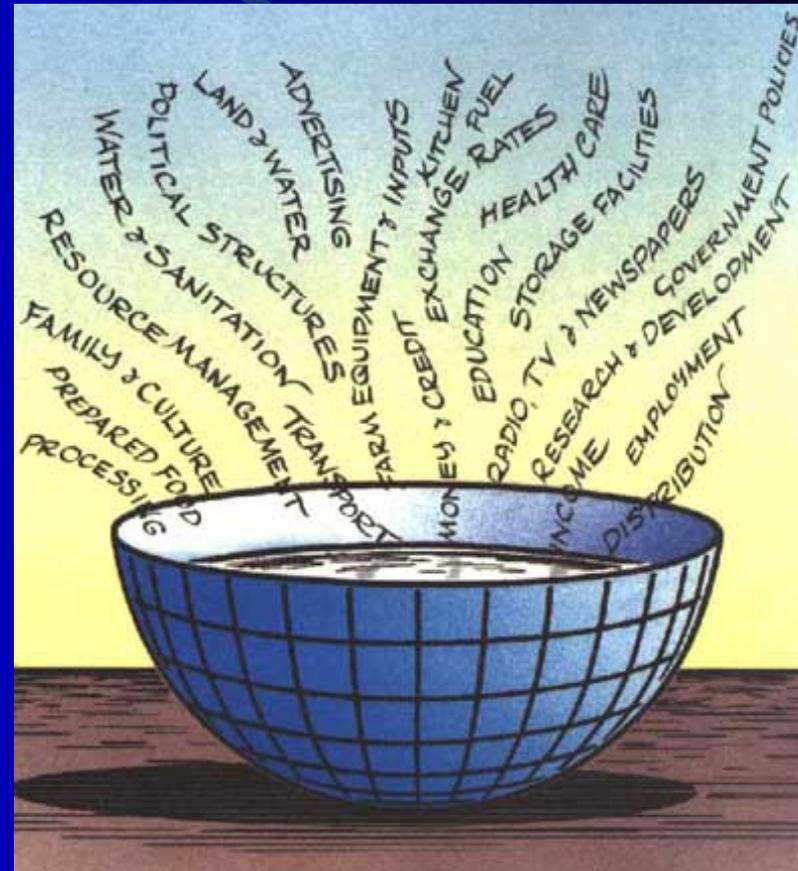


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Capacity gaps

- Synergy among disciplines
- Synergy among sectors
- Synergy among bureaucratic units
- Synergy among political leaders

Synergy Defined: Increased effectiveness, achievement, etc., produced as a result of combined action or co-operation (OED)



The way ahead for countries

- Many preventive, mitigative and adaptive strategies and tactics proposed for coping with climate change are worth doing, even without a climate change.
- The key is to assure that such strategies and tactics are not just identified but actually implemented and supported by adequate resources and are implemented and monitored.





www.nature.com/.../v8/n7/images/nrn2178-i1.jpg

The way ahead for FAO

- **“Windows of opportunity”**
- **Use the IPCC WG2 and the MEA as springboards for FAO climate change activities.**
- **FAO must prepare for being asked increasingly for its advice and services in how households to governments might cope with changing climate, ecosystems and societies.**