Toward an ethical framework for climate services

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The Mad, Mad, Mad World of Climatism, Chapter 9
Cartoon by Bob Lynch
A brief introduction

- Geographer (who can count)
- PhD *Climate Change and the Recovery of Acidified Catchments* (1991)
- 10 different jobs in last 25 years
- Professor of Hydroclimatic Modelling at Loughborough University, UK (2008-)
- Pragmatic about use of climate science to achieve positive outcomes for human development and freshwater environments
- Concerned about potential harms linked to climate services
Learning from others
Building blocks of an ethical framework

**Six key elements**

Motivations
Reference points
Shared language
Core values
Principles* of product
Principles* of practice

* Note principles not rules
Motivations:
Minimize risk and maximise human security

Relationship between daily accumulated cholera cases (grey line) and rainfall (black line) for Dakar.

Source: de Magny (2012).
Box 1: We believe that ...

1. Climate science has the potential to improve human well-being.
2. Users’ needs should inform climate services provided.
3. The value systems and decision frameworks of users should be central to climate service delivery.
4. Climate service providers should consider the consequences of their actions for those who may use or be affected by the use of climate service products.
5. Climate service providers should be accountable for the integrity and transparency of their practices and products.
6. No individual or institution has a monopoly on climate knowledge or scientific authority.
7. Climate service products should be open to scrutiny and comparison.
8. Public data are a public good.
Shared language

A unified modeling approach to climate system prediction

The global coupled atmosphere-ocean-land-cryosphere system exhibits a wide range of physical and dynamical phenomena with associated physical, biological, and chemical feedbacks that collectively result in a continuum of temporal and spatial variability. The traditional boundaries between weather and climate are, therefore, somewhat artificial. The large-scale climate, for instance, determines the environment for microscale (1 km or less) and mesoscale (from several kilometers to several hundred kilometers) processes that govern weather and local climate, and these small-scale processes likely have significant impacts on the evolution of the large-scale circulation (Fig. 1 from Meinel et al. 2001).

The accurate representation of this continuum of variability in numerical models is, consequently, a challenging but essential goal. Fundamental barriers to advancing weather and climate prediction on time scales from days to years, as well as long-term systematic errors in weather and climate models, are partly attributable to our limited understanding of and capability for simulating the complex, multicellular interactions intrinsic to atmospheric, oceanic, and cryospheric fluid motions. The purpose of this paper is to identify some of the research questions and...

Climate Prediction Products

A climate prediction is a probabilistic statement about the future climate conditions on time scales ranging from seasons to decades. It is based on conditions that are known at present and assumptions about the physical processes that will determine future changes.

Climate predictions are generally the products most eagerly sought for longer-term decisions and early warning of potential hazards. Predictions can be produced on the global, regional or local scale.

Global Climate Prediction products

Products from WMO Global Producing Centres for Long-Range Forecasts

The process of computing long-range forecasts (climate predictions from 30 days up to two years) on the global scale requires huge amounts of computer power along with a...
Core values

Four elements
Integrity
Transparency
Humility
Collaborative
Principles of product

Climate service products should...

...be credible and defensible

...include detailed descriptions of uncertainty

...be fit for purpose

...be documented

Source: EBRD (2011)
Principles of practice

*Climate service providers should*...

- communicate value judgements
- communicate principles of practice
- engage with their community of practice
- engage in the co-exploration of knowledge
- eschew climate as a singular threat
- provide metrics of the value of their products
- communicate appropriately
- implement mechanisms for monitoring and evaluation of procedures and products
- articulate process for refreshing and revising information
- declare any conflicts of interest and/or vested interests
- share the responsibility of climate information outcomes
Closing remarks

Principles not rules
Sanity check by climate service users
Consultation and refinement