Climate Data Empathy

Climate observations are increasingly important for decision making. However, the provision of highly processed, long-term products hides the context of observations, and thus relevant information. Measurements depend on technology and intentions. Data compilations depend on means of preservation and access. Present society and its history thus imprint on climate data.

The emerging nation states enabled sustained meteorological networks. The colonial period is data rich in some colonies, data poor in others. Polar explorations left tracks on data maps. Wars caused station interruptions and archival losses, but triggered additional measurements. Military interests provide series from strategic locations. Cold-war geopolitics shaped the International Geophysical Year 1957/58, which affects climate data (establishing global networks) and its dissemination (through World Data Centers) until today. Marine data reflect world trade and whaling. Commercial aviation provides data from flight corridors. Economic downturn and post-socialist transformations triggered station closures. Recent data maps resemble development maps; some “white areas” reflect restrictive data policies. Mobile communication affects future data maps.

We term this context-dependence “climate data empathy”. Apart from explaining data coverage issues, its depiction of society could inform climate services. Take developing countries, with often diverse data contexts. Historical measurements were part of colonialism, of measuring, describing, and explaining the world according to European ideas. Traditional knowledge depicts local climate characteristics, but narrative and likely requiring revision under climate change. Today, precipitation data based on mobile communication links seem promising for developing countries, but raise proprietory concerns. Providing not just data products, but also contexts and designing services accordingly—genuine, relevant, open—increases their reach.

Climate data scientists know the contexts. They do their utmost to minimize any effects on data products, but the context-knowledge remains with them. Climate data products are both, best-estimates of physical variables and societal products. Decision making can—and should—learn from both.

Stefan Brönnimann and Jeannine Wintzer, Univ. Bern, Switzerland

Addresses

Stefan Brönnimann
Oeschger Centre and Institute of Geography, University of Bern
Hallerstr. 12
3012 Bern
Switzerland
stefan.broennimann@giub.unibe.ch

Jeannine Wintzer
Institute of Geography, University of Bern
Hallerstr. 12
3012 Bern
Switzerland