

Adaptation and GCOS

Are we covering enough ground?

The context

- Decision makers and the wider public are not yet aware of all the opportunities to be gained from becoming more resilient and less vulnerable to climate impacts and natural hazards;
- Governments and businesses fail to incorporate climate change risks into their social and economic development plans and investments;
- Adaptation efforts fall short of those who need them most, the world's poorest and most vulnerable people; and
- Although adaptation is a global challenge, global leadership on the issue is scarce. In short, the world is falling short of the transformation required to adapt to a changing climate.

From the GCOS strategy

“GCOS will consider how best to support users beyond its traditional role of supporting the science and understanding of climate change to include the global climate related observation needs of **adaptation, mitigation, sustainable development, disasters and emergency response, and in responding overall to the Paris Agreement.** “

“This will include identifying additional ECVs and developing their definitions and observational requirements, as has been done for the existing ECVs, or include these needs in existing ECVs. “

“In addition, GCOS will identify actions that need to be implemented by the observing systems to address these additional needs. These broader demands on the observing system will require GCOS involving a wider **range of users and experts** and will extend the relevance of GCOS in wider policy, economic and social communities.”

The role of GCOS

“GCOS should establish a specific activity to understand the needs of adaptation and how to develop their observational requirements. This will require the direct involvement of adaptation experts rather than rely solely on the observation experts traditionally associated with the GCOS Science panels, including those with financial, implementation and policy responsibilities for successful adaptation to climate change. “

“The ability to understand and estimate risks, both current and how they change in the future, will be vital to support adaptation planning and increase the resilience of societies to climate changes. GCOS should consider the world-wide and regional observations that support or monitor adaptation, but not the detailed local observational needs, in line with its remit as a *global* observing system.”

TOPC adaptation team

- Identify indicators to monitor adaptation. These indicators may be based on physical as well as socio-economic data.
- Report on current status of observation availability and adequacy for adaptation and outline benefits improvements could produce
- Consider what requirements, guidance and best practice for climate observations for adaptation may be needed and how to produce them
- Advise Scientific Panels of GCOS on how to promote observations for adaptation in the existing global climate observing system

Adaptation indicators

Realm	Possible Indicator	Physical or Financial	Data Source	Scope (for global, need to consider their global representativeness)
Urban Environments	1. Vegetation Fraction (Greenness)	P	Satellite	Global
	2. Impervious Fraction	P	Satellite	Global
	3. Complete Surface Fraction	P	Satellite	Global
	4. Albedo	P	Satellite	Global
	5. Urban air temperature mitigation	P	Weather station	Global
Agriculture and Forestry	1. Shifting agricultural zones	P	Satellite (LULC)	Global
	2. Prescribed burning	P	Satellite	Country
	3. Investment in fire suppression	F	Fire Agencies	Country
Coastal Infrastructure	1. Adapting existing infrastructure	F and P	National agencies/ Satellite	Country
	2. Infrastructure for hazard management	F and P	National agencies/Satellite	Country
	3. Insurances - disaster relief	F	Reinsurance companies/ national agencies	Global, country

Some issues for discussion

- Adaptation is not only about providing regional data and higher time resolution
- It is primarily about defining information needs: number of dry days, number of hot days, recurrence time of floods, translation into risks... that can be used in planning
- Our business is to sharpen definition of ECVs and push innovations and sustainability of observation systems
- This involves a change in perspective from generic (necessary) ECV's to (sufficient) specific products involving another set of stakeholders
- Can we provide an adaptation checklist for our ECVs?