

*Report from GCOS-TOPC Adaptation Scoping
Group Meeting
Geneva, 19-21 February, 2019*

Nigel Tapper, Chair TT Observations in Support of Adaptation

A Key Purpose in setting up GCOS.

Regularly reports on the adequacy of the current climate observing system to the [United Nations Framework Convention on Climate Change](#) and thereby identifies the needs of the current climate observing system

*GCOS until now has been substantially involved in support of activities of WG1, but since COP22 the imperatives have changed with a new focus to include what we can do to support WG2, especially around adaptation. Mostly, **but not entirely** within the realm of TOPC*

The Paris Agreement (2016 COP22)

The Paris Agreement established the Global Stocktake as a tool to track global efforts, including adaptation. Article 14 specifies these measures. *The Global Stocktake shall,*

- *Recognize adaptation efforts of developing countries;*
- *Enhance the implementation of adaptation action taking into account adaptation communication*
- *Review the adequacy and effectiveness of adaptation and support provided for adaptation*
- *Review the overall progress made in achieving the Global Goal on Adaptation in light of global climate goals*

Included two adaptation-relevant actions in its new (2016) GCOS Implementation Plan

- Action G1: Produce guidance and best practice for adaptation observations
- Action G4: Identify indicators for adaptation and risk

GCOS-TOPC formed a Scoping Group on Observations for Adaptation, a small group of invited experts on adaptation to help develop a way forward, including identification of how current ECVs could be used or adapted to inform the adaptation community. Met 19-21 Feb.

Some Key Points Arising From Scoping Group Discussions

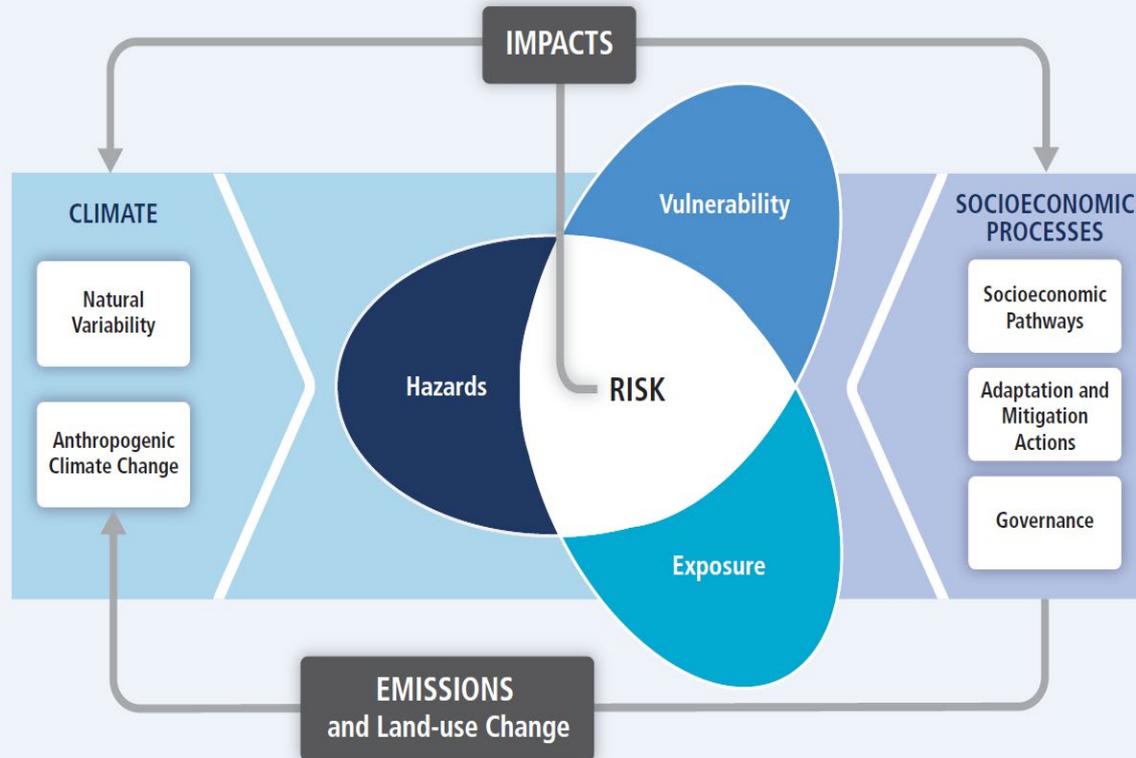
(a comprehensive scoping paper on adaptation support is in production by the Scoping Group – for delivery to GCOS SC May/June)

Risk Triangle Concept (Core to AR5 WG2)

Still a key and relevant diagram, but definition of terms continues to evolve into AR6.

1.5°C Report

Adaptation In human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects.



GCOS's Role in Adaptation

The previous diagram suggests that GCOS, through its ECVs etc. can provide

1. *Clear indicators to inform adaptation (**indicators for adaptation**) e.g. key information about hazards and the links to exposure/risk, as well as*
2. *the possibility, through some ECVs, to directly observe adaptation (**indicators of adaptation**)*

*Clear GCOS opportunities to contribute to the **Global Stocktake** (every 5 years from 2023) that tracks national and global progress on implementation of, among other matters, adaptation*

Opportunities for GCOS to Contribute

(possibly within existing capabilities/ECVs etc.)

A. Improved understanding of climate change impacts and adaptation imperatives through provision of geospatial data inputs relevant to bio-geophysical modelling (observations for adaptation)

e.g. input to regional climate models, agro-ecological models, coastal and flood risk models (relevant ECVs would include sea-level, soil moisture, LULC change, etc).

Opportunities for GCOS to Contribute

(possibly within existing capabilities/ECVs, etc.)

B. Improved understanding of climate change impacts and adaptation imperatives through provision of geospatial data inputs relevant to assessment of climate-related risk (observations for adaptation)

e.g. input of geospatial data on geographic distribution of developed land cover (relevant ECV) subject to certain climate hazards, spatial distributions of active fire/fire burnt area (relevant ECV), etc.

Opportunities for GCOS to Contribute

(possibly within existing capabilities/ECVs, etc.)

C. Use of existing ECVs (possibly enhanced) to extract information on the spatiotemporal development of adaptation (i.e. observations of adaptation) for a limited number of examples

e.g. shifts in LULC (ECVs reflecting changes in agricultural patterns, urban land cover change), anthropogenic use of fire, prescribed burning (active fire ECV), etc.

D. Less likely. Completely new ECVs to provide information on human adaptation (i.e. observations of adaptation) for certain examples – these would be completely new ECVs, not necessarily physical/climate related.

e.g. tracking national budgets on adaptation, investment in coastal infrastructure, mapping development of coastal defenses, etc.

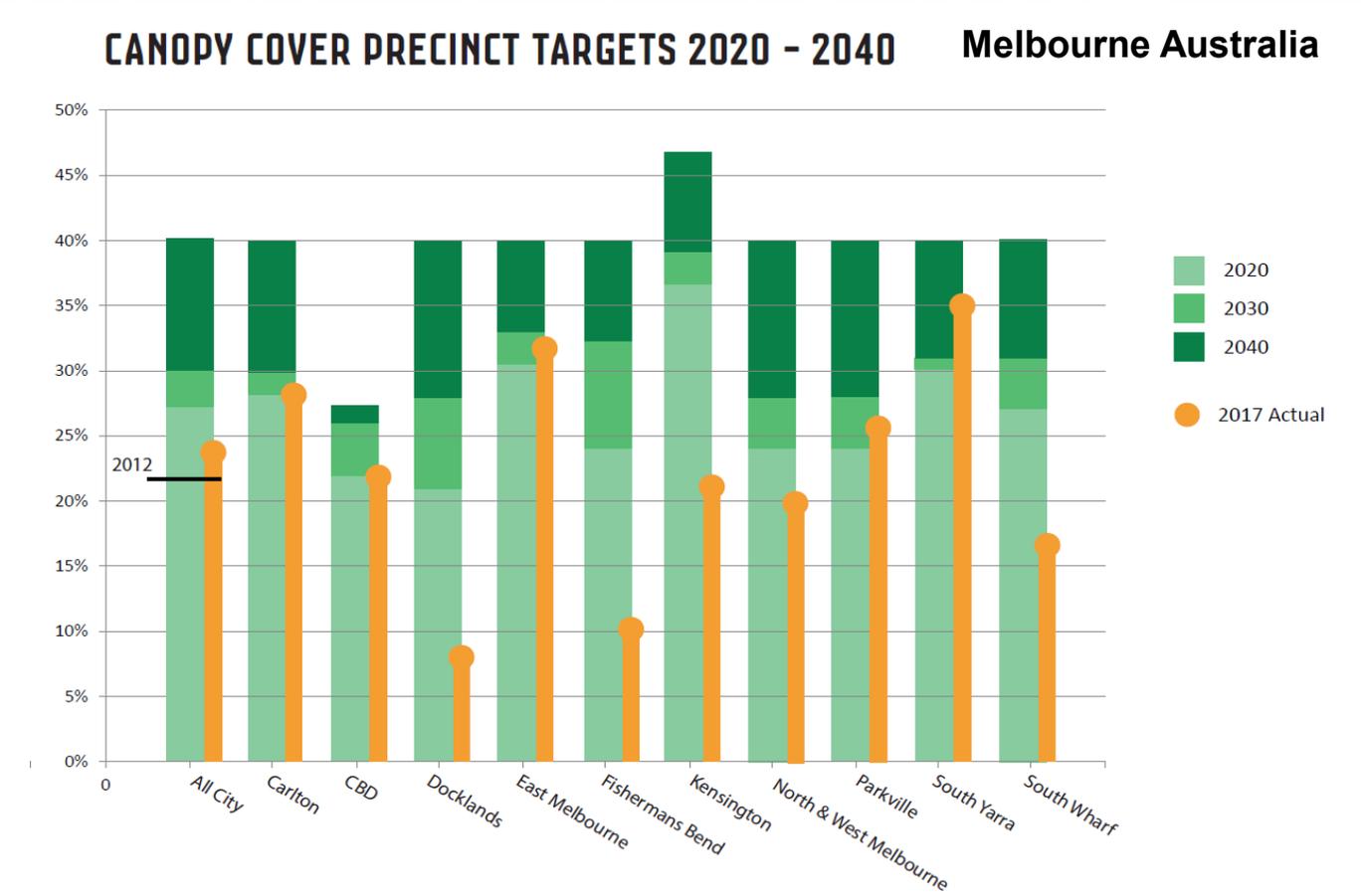
A Key Issue for A, B, C – Adequacy of Existing Data

Adequacy of the *spatial resolution of these data may be inadequate* to the modelling, risk assessment or adaptation observation.

Probably OK for bio-geophysical modelling (100-1000m resolution adequate), but not for risk assessment or adaptation observation (where 1-10m resolution needed) - *larger scale shifts in agricultural land cover may be an exception.*

But data of these resolutions are available from a range of agencies

Urban Green Cover— A Key Climate Adaptation Approach Can be determined from current (but enhanced) ECV



Conclusion

With current capabilities, GCOS adds much value to the Global Stocktake of adaptation- and with modest enhancement of products, could add considerably more.