Report from GCOS-TOPC Adaptation Scoping Group Meeting

Geneva, 19-21 February, 2019; update for 27th GCOS SC, 28-31.10.19

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GCOS established in 1992

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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

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The Paris Agreement (2016 COP22; and further back)

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*

Further back (MoU 1998: 5.support adaptation to climate change)

The GCOS Response to Call from COP22

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

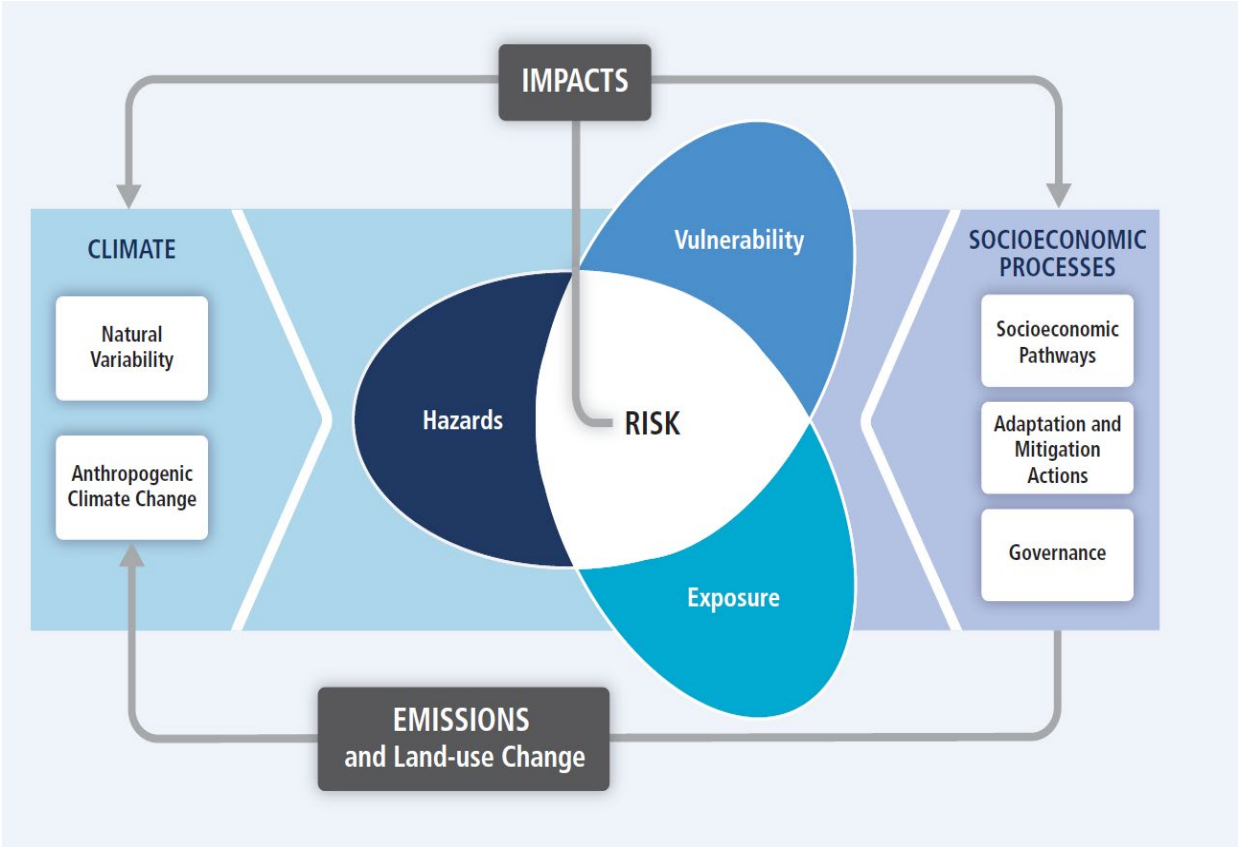
- *Action G1: Produce guidance and best practice for adaptation observations*
- *Action G4: Identify indicators for adaptation and risk*

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.)

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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.)

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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.)

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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.

Opportunities for GCOS to Contribute

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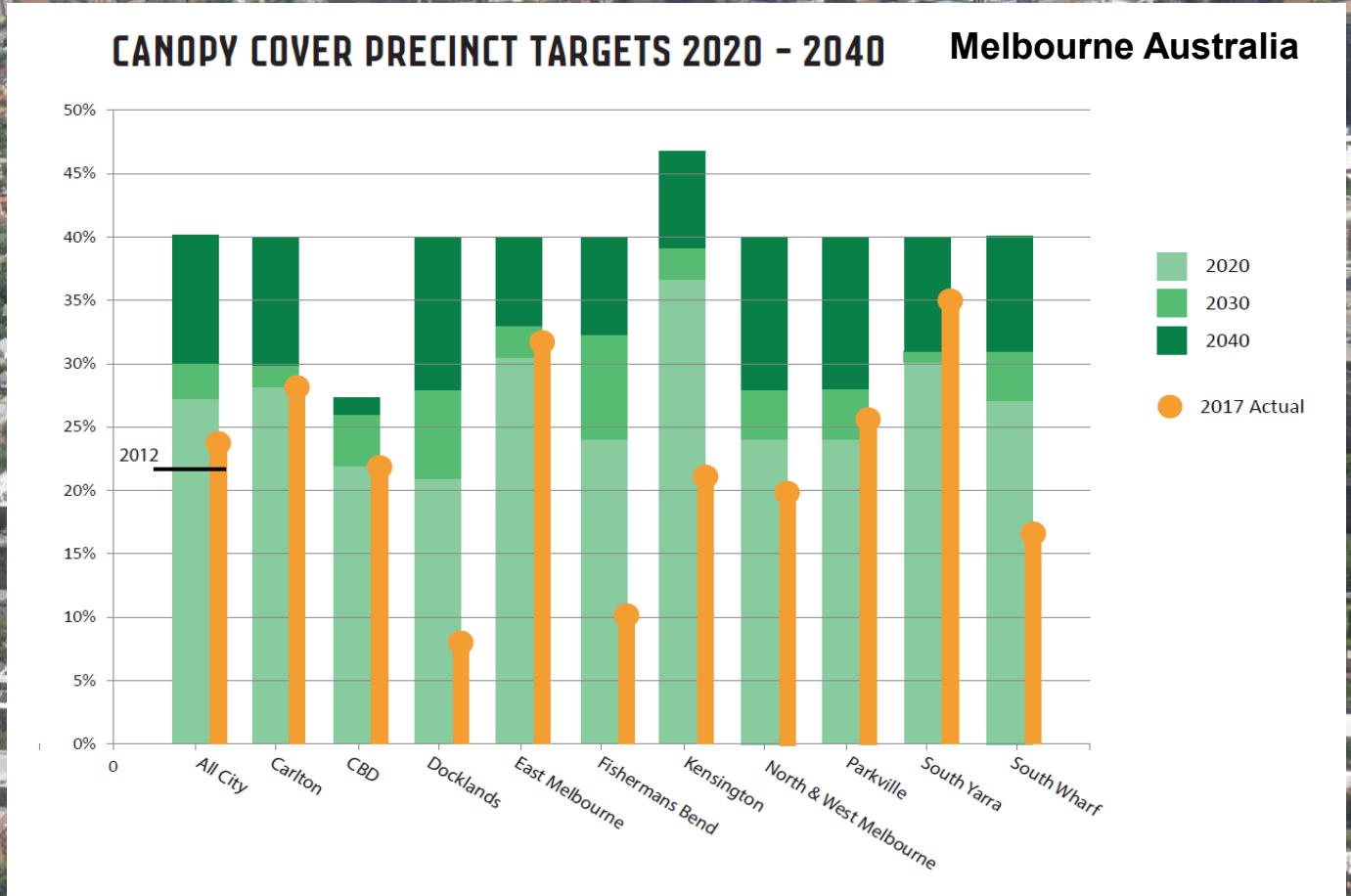
D. Possible. New ECV(s)/ECV Products to provide information on human adaptation (i.e. observations of adaptation) for certain examples – these might be related to existing ECVs or could be completely new ECVs, not necessarily physical/climate related.

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

Urban Green Cover– A Key Climate Adaptation Approach Related to Existing ECV on Land Cover



A view on National Adaptation Plans

"…from assessment of climate … risk to effective adaptation solutions and actions…"

Structural design and requests to Countries – SBI (questionnaire)

PART I - Assessing progress based on the building blocks of the process

- Synthesize available information, take stock of relevant activities (science and knowledge)
- Comprehensively assess climate vulnerability (A, B)
- Identify adaptation options to address key vulnerabilities (A, B, - C, D) -> enable ranking
- Implement and manage actions in NAPs through policies, programmes, projects and other activities – and set up an M & E Framework (C, D) – (*physical metrics, process (social), institutional dimensions)*

PART II - Support for the formulation and implementation of NAPs (incl. financial and technical support)

- appropriate legislation to address climate change (*including adaptation*), … take stock of information …in existing monitoring and evaluation systems in different sectors (*agriculture, transport, energy* …)
- …tailor support for key regional characteristics and vulnerabilities
- access and use the best available science and knowledge of climate scenarios e.g. based on latest IPCC assessments/guidance, …translate 2 C global goal to regional changes suitable for national application
- apply different vulnerability and risk assessments to *different sectors* and *systems*

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A view on National Adaptation Plans

Two Examples – Country Perspectives

Example Brazilian NAP:

- "Poor availability of high-quality and timely data for monitoring signals and observing impacts of climate change;
- lack of adequate indicators and systems for monitoring the water balance, salinization and deforestation."

Ethiopian NAP:

- "Relevant climate information (observations, forecasts, longer-term projections) … at the appropriate scale and in useful formats to support adaptation planning and climate-smart decision-making in *agriculture/natural resource sector/ water sector/forest/health/energy/ urban sector/transport sector*"

Terrestrial ECV	Services A, B or C?	Spatial/temporal adequacy of data
River discharge	B	Y
Anthropogenic water use	C	Y?
Groundwater	C	Y
Lakes	C	Y
Snow cover	A	Y
Glaciers	-	-
Permafrost	-	-
Albedo	A, C	Y
Land cover	A, B, C	N
FAPAR	-	-
Leaf area index	A	Y
Above-ground biomass	A, C	N?
Fire disturbance	A, B, C	Y
Soil moisture	A, C	Y
Soil carbon	C	N
Ice sheets	A	Y
Latent fluxes	A, C	Y
Surface temp	A, C	Y

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GCOS Advocating Observations for/of adaptation - ECVs relevant at scale

Science

& Partnership

(…FAO, WHO, UNEP, CDP, Conv. …)

Stocktake, WG II

Actors/Stakeholders

Clients on national and system scale

UNFCCC/IPCC

Global Governance

Hazards

Vulnerability / Exposure

NAPs

Sectors

Reality

People

Risk

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Conclusion

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

Recommendation and Decision

to GCOS SC for consideration

- Each of the **GCOS Panels review their ECVs** for their **suitability** to contribute to the activities of **WGII** and the **Global Stocktake (*and NAPs*)**, under the **A, B** and **C** headings outlined above. Panels should consider whether existing spatial and temporal resolutions would be suitable for purpose and how any inadequacies could be addressed

- That GCOS, through a **designated sub-committee** develops a process, in **collaboration with other relevant organisations**, to identify one or more potential new ECVs (**D** heading above) that could be developed in collaboration with (or by) other organisations for the purpose of tracking adaptation progress globally

- That progress on a) and b) be reported back to GCOS SC by *(mid-2020?)*

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Recommendation and **Draft Decision 8.5 (SC-27)**

- 1. The steering committee agreed that a global observations system can contribute both to supporting adaptation and also can monitor the progress and implementation of adaptation in some cases. In many cases, these observations will need to be supplemented by local monitoring.

- 2. GCOS should consider the needs of adaptation in defining ECVs and their requirements to the extent possible for a global observing system.

- 3. A Task Team should consider how the existing ECVs can further be used to support adaptation or monitoring of adaptation. The task team should develop some case studies and report back at the next steering committee.

- 4. GCOS will actively invite relevant partners to form a joint ad-hoc group and work together on advancing observations for and of adaptation.

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