# **Proposal for a coordinated contribution of the systematic observation community to the first Global Stocktake**

**Synthesis Paper**

**Draft outline**

Draft of 3 February 20201

# **Background**

The synthesis paper provides information to GST that is:

* + Relevant, brief and focused.
	*“Where are we? Where do we want to go? How do we get there?”*
	+ Matched to the GST technical dialogue discussions as much as possible (storylines not yet written).
	+ A framing of aggregate, global information and recommendations to correspond to the GST themes.
	+ Emphasises links/understanding between observations, reanalysis, modelling / data assimilation frameworks to provide actionable climate information.
	*“Are the data we have now sufficient to provide some minimum viable products for the GST?”*
	+ Provides information and recommendations for policy makers using a **systems approach** - what information is available and is it sufficient – “now” and “future.”
	*“Are policy makers able (and prepared) to take into account the data we collect as a global community to influence actionable information?” “If no, what are the remaining barriers for policy makers to use data that we can provide now?”*
	+ Considers how to measure “success.”
1. Policy makers demonstrably using the data that the community provide?

# **Outline with suggested guiding questions**

1. Introduction

TBD

1. Mitigation

**What information is available on GHG emissions and concentrations – global level, national and sectoral?**

 **Is the information available sufficient?**

* **Today:** Capabilities / best sources of data/ best practices (integrating top down and bottom up) for using that data (separate fossil fuel and AFOLU sectors) {demonstration products}
-observation work best in appropriate modelling framework
* **Future:** Modified /improved / finer resolution – dedicated measurement systems & new capabilities to look at how global system evolving over time

Information could include:

1. **Detection of emitting hot spots** such as megacities or power plants.
2. **Monitoring the hot spot emissions** to assess emission reductions/increase of the activities.
3. **Assessing emission changes against local reduction targets** to monitor impacts of the NDCs.
4. **Assessing the national emissions and changes** in 5-year time steps to estimate the global stock take.

Emission estimates concern the sinks to the natural system of GHG, including ocean and land.

Important tp emphasise the integration of systematic in situ and remote observing systems is clearly a topic to stress due to the non-sustainable nature of large parts of the observing system. A major possible contribution would be to assess the curent status and trends in the major sinks and their response to human activities and climate change. This could be critical for assessing ambition.

**Where can Parties access key data / information / services?**

Provide demonstration data sets, but more importantly focus on developing organizational structures with the modeling communities that ultimately can provide observation and obs **products** needed in future, including requirements for interoperability of the products -- something that resembles the Obs4MIPS --> CMIPS --> IPCC structures.

1. **How do we (continue to) reconcile inventory and top-down estimates of GHG fluxes in a constructive way?**

**Case studies**

1. Adaptation

**What information is available for adaptation - impacts, risks and vulnerability for different regions and sectors?**

Emerging operational dataset on impacts which could be used as a set of reference indicators to monitor adaptations over time

Links to work under UN Decade for Ocean Science

1. **Where can Parties access key data / information / services?**

**Is the adaptation information available adequate and effective?**

**Is the action taken adequate and effective?**

**How do we measure success?**

1. **Are we progressing towards reaching the global adaptation goal (being resilient in a 1.5 and 2 degree world) ?**

**Case studies**

e.g. How EO is being integrated into NAPs (GEO), AFOLU (ESA/JAXA)

1. Finance and means of implementation and support

**How are we enhancing implementation and cooperation?**

**Are finance flows consistent for supporting adaptation and mitigation?**

**What measures can the EO community provide to enable FAIR and equitable access to information?**

**Case studies**

1. Other elements

**What information is available for loss and damage?**

**How are we enhancing understanding of loss and damage?**

**Case studies**

1. Conclusions

TBD