











# Submission from the Global Climate Observing System (GCOS) to SBSTA 43 on agenda item 8 (a) Research and systematic observation

15 October 2015

#### The Global Climate Observing System (GCOS)

GCOS Secretariat, c/o WMO, 7 bis, avenue de la Paix, P.O. Box 2300, CH-1211 Geneve 2, Switzerland gcos.wmo.int

#### **Draft Outline of a new GCOS Implementation Plan**

SBSTA 37¹ encouraged the GCOS secretariat to provide a draft of a new implementation plan to SBSTA 43 in 2015. SBSTA invited the GCOS secretariat to provide the final implementation plan to SBSTA 45 in 2016.

The new implementation plan is envisaging broadening its scope to global Earth's environmental cycles, i.e., energy, carbon and water, and *inter alia* taking into account Sustainable Development Goals, climate services, climate indicators and relevant outcomes of discussions during COP21. It will advise on new requirements for measures needed for adaptation to a changing climate, and measures to mitigate climate changes.

The new plan will lay out a new strategic approach to further implement the Global Climate Observing System and will introduce a section on cross-cutting disciplines and on scientific and technological challenges.

The GCOS secretariat will develop a new implementation plan along the draft outline in the Annex.

<sup>&</sup>lt;sup>1</sup> FCCC/SBSTA/2012/L.25













#### **Annex**

### Draft Outline of a new GCOS Implementation Plan

#### TABLE OF CONTENTS

#### **Executive summary**

- 1. Introduction
- 2. Meeting the Needs of the UNFCCC for Climate Information
- 3. Agents for Implementation
- 4. Availability of Climate Data and Products
- 5. Ensuring the Adequacy of Climate Observing Systems

## Implementation plan for the global observing system for climate in support of the UNFCCC (Revision)

#### 1. Introduction

- 1.1. Context, including historical evolution of the process.
- 1.2. Background
- 1.3. Purpose of this plan essential climate variables
- 1.4. Earth system cycles and the structure of this document

## 2. The strategic approach to implementation

- 2.1. Basis
- 2.2. Global and integrated approach
- 2.3. Agents for implementation within GCOS and equivalents from the other conventions and scientific and technical bodies
- 2.4. Criteria used to assign priority and emerging ECVs
- 2.5. The phased approach in implementation
- 2.6. Building capacity
- 2.7. Measuring progress assessing implementation and performance
- 2.8. Cost definitions

#### 3. Growing demands for climate observations

- 3.1. Consistent observations across the earth system cycles
- 3.2. The need for information on climate impacts, adaptation and mitigation
- 3.3. Cross-convention coordination on observations and engagement with climate services
- 3.4. Integrated climate products and indicators

#### 4. Over-arching & cross-cutting actions

- 4.1. Planning, reporting and oversight
- 4.2. Toward sustained networks and systems
- 4.3. International support for critical networks technical cooperation
- 4.4. Earth observation satellites













- 4.5. Early instrumental data and proxy reconstructions of past climates
- 4.6. Data management and stewardship
- 4.7. Critical supporting observations and ancillary datasets

#### 5. Atmospheric climate observing system

- 5.1. Atmospheric domain surface
- 5.2. Atmospheric domain upper-air
- 5.3. Atmospheric domain composition
- 5.4. Atmospheric domain data management
- 5.5. Atmospheric domain integrated global analysis products
- 5.6. Atmospheric domain scientific and technological challenges

#### 6. Oceanic climate observing system

- 6.1. Oceanic domain physics
- 6.2. Oceanic domain biogeochemistry
- 6.3. Oceanic domain biology and ecosystems
- 6.3. Oceanic domain data management
- 6.4. Oceanic domain integrated global analysis products
- 6.5. Oceanic domain scientific and technological challenges

## 7. Terrestrial climate observing system

- 7.1. Terrestrial domain ecological
- 7.2. Terrestrial domain hydrological
- 7.3. Terrestrial domain cryosphere
- 7.4. Terrestrial domain data management and reanalysis
- 7.5. Terrestrial domain scientific and technological challenges

#### 8. Summary of main actions and recommendations

#### **Appendices**

Appendix 1: UNFCCC SBSTA: Excerpts from the conclusions on research and systematic observation up to SBSTA 42

Appendix 2: Decision 9/CP.15 - Systematic climate observations.

Appendix 3: GCOS Climate Monitoring Principles

Appendix 4: Agents for implementation

Appendix 5: List of Annex-I and Non-Annex-I parties to the UNFCCC

Appendix 6: Contributors

Appendix 7: List of Tables

Appendix 8: Glossary of Acronyms