Organization of the Global Ocean Observing System

Agenda Item 5.2

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Chair I-GOOS
43th IOC Executive Council June 2010
Outline

- Brief Review of the Objectives, Missions and Existing Governing System for GOOS
- Opportunities for GOOS development
- Challenges facing GOOS Development
- Proposed on Planning, Implementation and Governance of GOOS by I-GOOS Board
Brief Review of the Objectives of GOOS

IOC/XVI-8 -- “the establishment of integrated global ocean observation system is strongly supported globally, including national governments, industries, scientific research communities and social public for their strong requirements of ocean data and information and needs for the study of ocean “

To build a long-term and sustainable operational system

--Sustaining Climate of GOOS
--Coastal module of GOOS

Enable the developing countries benefit from implementing of GOOS.
Brief Review of the Missions of GOOS

- Adhering to a use-driven system;
- Work out strategic plan for data collection and exchange
- Undertake ocean data collection, management, research and development to promote services
- Extension of the standard and criterion, and make effective use
- Capacity building, technical assessment and exchange (Specially with a priority to Africa)
- Collaboration with other global programs
Brief Review of GOOS implemented in 5 Phases

GOOS implemented in 5 phases:

1. Design and planning;
2. Operational demonstration and pilot projects;
3. Incorporation of suitable existing and new observing activities;
4. Gradual operational implementation of the permanent GOOS;
5. Continued review, assessment and improvement.
Existing Governing System and Coordination Mechanism for GOOS

**SPONSORS**
- ICSU
- UNEP
- IOC
- WMO

**General policy and requirements**
- GRC (GRAs)

**Scientific planning and advice**
- PICO
- GSSC
- OOPC
- IODE
- J-COMM

**Implementation**
- Regional OOS
- GOOS
- Global OOS
Existing Governing System and Coordination Mechanism for GOOS (Cont.)

I-GOOS: For formulation of policy, principles, and strategy, and for planning and coordination of GOOS.

I-GOOS Board: To promote and coordinate the implementation of decisions taken by the I-GOOS,

GPO: For organizational and management of GOOS projects implementing,

GSSC: Advises to I-GOOS commission on scientific and technical matters including strategy & pilot projects

--OOPC: Responsible for open ocean module of GOOS;

--PICO: Responsible for coastal module of GOOS.
Existing Governing System and Coordination Mechanism for GOOS (Cont.)

- **GRAs**: Regional GOOS cooperative projects. To have GRAs Forum regularly to implement regional GOOS.
- **GRC**: For the exchange of technology, experiences and promoting the development of GRAs.
- **JCOMM**: Playing a key role in implementation of GOOS.
- **National GOOS committee or national representative**: As a national focal point to participate regional and global cooperation of GOOS.
Opportunities for GOOS development

GOOS program has made more achievements, especially the open ocean module of GOOS:

-- Extensive collection and R-T transmission of data from Argo, drifting and moored buoys, XBT and XCTD etc.

-- Widespread use of satellite technology enabling the multi-level ocean observation at large scale

-- The prototypes of globally operational ocean forecast have utilized in-situ and remote sensed R-T data

-- JCOMM enhanced efficient integration of in-situ and space observation system.

-- GOOS recognized as ocean component of GEOSS (IOC/XXIII), providing good opportunity for the development of GOOS.
The Example of Development of Global Ocean Component of GOOS

Argo project is becoming one of the canonical observation system.

- Deployed 1805, survival 1022
- Deployed 3620, survival 2225
- 3000 by November 2007

800/year are needed to keep the density of coverage

2003

2005

2007

2009.12.04
The Example of Development of Global Ocean Component of GOOS (cont.)

- **GODAE** has provided good example for the realization of operational GOOS.
- **OceanView** as a GODAE follow up project will continue to develop a new generation of marine analyses and prediction systems, and will also set up a mechanism for assessment of GOOS implementation effectiveness based on the social benefits.
The Example of Development of Global Ocean Component of GOOS (cont.)

GLOSS is the one with maximum Member States participation. And most of the stations has directly transmitting the R-T data to 4 TWS.
Open Ocean coverage of field Observations of GOOS program has surpassed 60%
Development of Coastal Module of GOOS

- Regional GOOS cooperation is encouraged. 13 GRAs have been formed, and four Forums were held. The next GRA forum is scheduled for 5 Oct. 2011 in Sopot, Poland alongside the EuroGOOS conference.

- GRC was established at GRAs-IV with volunteers by GRAs and it will take the first meeting in Oct. 2011.
In order to serve the need of the nations and of the global community, the OceanObs09 Conference was successfully held in Venice, Italy in Sept. 2009.
The conference in numbers

- 600+ attendees from 36 countries, majority developed countries
- 200+ poster presentations
- 99 Community White Papers submitted and reviewed before the conference
- 47 Plenary Presentations – Plenary Papers, peer reviewed as well
- 156 comments from the community on open web page
- 14 ‘international coordination’ sponsors, 14 additional national/regional agency sponsors
- budget of ~450k€ + lots of in-kind support from ESA, IOC, WCRP, CLIVAR, NASA
High level outputs: calls for action

(1) Calls on all nations and governments to fully implement by 2015 the initial physical and carbon global ocean observing system originally envisioned at OceanObs’99, and refined at OceanObs’09.

(2) Calls on all nations and governments to commit to the implementation and international coordination of systematic global biogeochemical and biological observations, guided by the outcomes of OceanObs’09, and taking into account regional variations in ecosystems.
OceanObs’09: calls for action

(3) Invites governments and organizations to embrace a framework for planning and moving forward with an enhanced global sustained ocean observing system over the next decade, integrating new physical, biogeochemical, biological observations while sustaining present observations. Recommendations on this Framework, considering how to best take advantage of existing structures, will be developed by an post-Conference working group of limited duration.

(4) Urges the ocean observing community to increase our efforts to achieve the needed level of timely data access, sensor readiness and standards, best practices, data management, uncertainty estimates, and integrated data set availability.

(5) Asks governments, organizations, and the ocean observing community to increase their efforts in capacity-building and education.
Goals of the post-OceanObs’09 Working Group

The WG is considering the outcomes and recommendations from the OceanObs’09 and in consultation with the international organizations and expert advice, will:

– Recommend a framework for moving global sustained ocean observations forward in the next decade; integrating feasible new biogeochemical, ecosystem, and physical observations while sustaining present observations; considering how best to take advantage of existing structures,

– Foster continuing interaction between organizations that contribute towards and are in need of sustained ocean observations, and

– Report back to its sponsors and disband by 1 October 2010.

Invite member states to provide more comments and suggestions on the considering of the framework taking by IFSOO--TT
further discuss GOOS Strategy, Implementation, Planning, on the GSSC-XIV which was held in London UK 03/2010,

- **Strategy Partner Coordination**
  - Climate Module coordination with GCOS, WCRP, OOPC, Ocean Obs’09
  - Coastal Module coordination with PICO
  - Regional coordination with GOOS Regional Alliances.

- **Implementation Planning**
  - Coastal Implementation Planning Identified Phenomena of Interest to help plan End-to-End systems
  - Open Ocean Implementation Global Climate Observing System 2010 implementation plan
  - Expanded Essential Climate Variables to include ecosystem evaluation
  - UN Regular Process for Ocean Observations will help guide the next generation GOOS
Advocacy and Outreach from GSSC-XIV meeting

- Creating Public and Political Support
- Recognizable GOOS Products
- Outreach Through Personnel Contact

GOOS Exhibition
OceanObs’10, OI’10, COP-15, UNFCCC Bonn Yeosu Expo 2012

Certified GOOS Data Google Earth Display of Available Argo and Hydrography

Industry Advocacy Workshops
The Challenges facing the GOOS Development

- The GOOS still has not met the requirement for compliance with national and international legislation/convention.
- Funding of GOOS has come primarily from research, and the support by member states need to increase.
- The existing ocean observing systems for physical variables are too few; biological measurements are in a limited state.
- There are gaps in satellite and in situ observing coverage
- Modeling and prediction capabilities need to be improved.
- Concerns have been expressed that I-GOOS does not take sufficient actions to improve the coordination of GOOS, and there have been similar concerns regarding to GSSC.
- Capacity building for developing countries which is particularly challenging for implementation of coastal GOOS.
The Challenges facing the GOOS Development (Cont.)

Over the past three biennia, GOOS has lost its status as an IOC priority, as reflected by a from 23% to 13% of the IOC budget. Similarly ocean observations and services as a whole, have dropped by nearly half, from 38% to 19%. Similar transfers have occurred, and are planned, to decrease OOS staffing levels.

Declining OOS Activities Budget (1000’s of US dollars)

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<td>IOC (C5)</td>
<td>3,252</td>
<td>3,422</td>
<td>2,852</td>
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<td>GOOS</td>
<td>749 = 23%</td>
<td>720 = 21%</td>
<td>381 = 13%</td>
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<td>IODE</td>
<td>287 = 9%</td>
<td>185 = 5%</td>
<td>196 = 7%</td>
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<td>JCOMM</td>
<td>100 = 3%</td>
<td>110 = 3%</td>
<td>86 = 3%</td>
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<td><strong>ALL OOS</strong> (GOOS, IODE, JCOMM, GLOSS, OOPC)</td>
<td><strong>1246 = 38%</strong></td>
<td><strong>1135 = 33%</strong></td>
<td><strong>551 = 19%</strong></td>
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Planning, implementation and governance of GOOS

- A consultancy study (the “Baker Report”) was conducted to examine cooperation and interactions between IOC and WMO.

- This study was conducted at the request of the IOC and WMO secretariat, but was not called for by member states, and does not constitute a formal review of either GOOS or JCOMM.

- The report was provided to I-GOOS IX (June 2009).

- IOC and WMO Member States were invited to provide comments on the report by 1 September 2009.

- One Member State provided comments.
**Actions undertaken by the IGOOS Board**

- The I-GOOS Board is chaired by China, with membership from USA, Russia, Cote D’Ivoire and Peru.
- The Board has:
  - Considered the Baker report
  - Discussed informally during the JCOMM-III meeting, and proposed the discussion should be taken at IOC-EC-43rd meeting.
  - Considered Member States’ response to Baker report
  - Considered the outcome of OceanObs09 and the work of the post conference WG that is developing a framework for moving global sustained ocean observations forward in the next decade, and considering how best to take advantage of existing structures.

--On 27/04/2010, telecon meeting of I-GOOS Board made decision that “the organization of GOOS” should be reported to the EC meeting.
On 09/06/2010, the I-GOOS Board took further discussion on the issues and made proposals as following:

1. The I-GOOS board, with invited guests/experts, will meet in fall 2010 to discuss future organization of the GOOS with a view to producing a proposal for consideration by the IOC Assembly in 2011.

2. The proposal will be submitted to member states as a working document several months prior to the Assembly.

3. A meeting of I-GOOS member states representatives/focal points will be held the day before the Assembly to discuss the proposal and prepare for the Assembly.

4. The board requests that this EC decides to dedicate half a day during the 2011 Assembly to discussion of this proposal.
Thank you!

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