

## REVIEW OF GOOS REGIONAL ALLIANCES (GRA) SURVEY

*FINAL Report*

v.7 / 30 Oct 2015

### INTRODUCTION

#### Background

In 2013, Chair of the Global Ocean Observing System (GOOS) Regional Council (GRC), Zdenka Willis, distributed an information-gathering survey to all of the GOOS Regional Alliances (GRAs). That survey included questions about membership, governance, management, documentation, communication, observing requirements vs. GOOS societal goals, arrangements and capacity in observations, data management and information generation, capacity building, gaps, and success stories. A full listing of the survey questions is shown in Annex A.

While there were excellent briefings and tables *summarizing* the survey results, there was a rich and detailed set of information in the full GRA survey inputs that was mostly unseen by GOOS leadership and other participants.

#### The Task

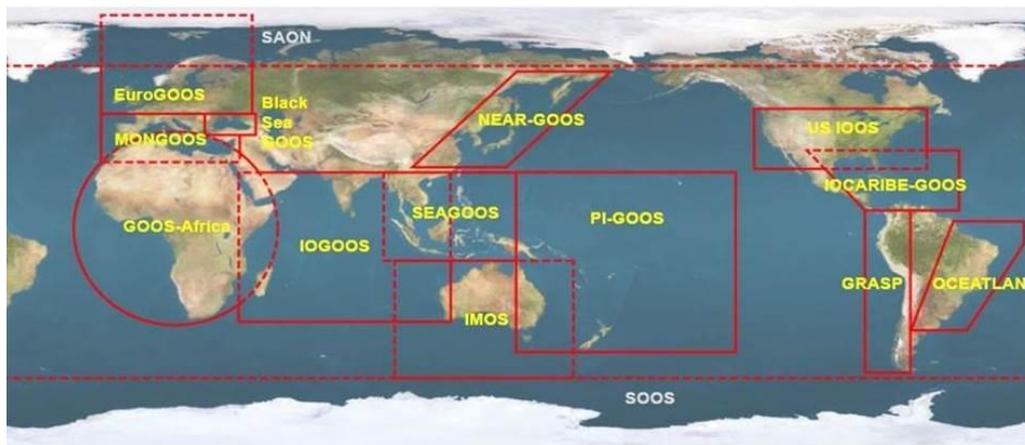
The task of this report was to review and analyze all of the detailed inputs to the GRA survey, and present more detailed findings and recommendations based on that input to be presented at the GOOS Regional Forum GRF-VII in Heraklion, Crete the week of 20 September 2015. The particular focus of this review was to consider ways to enhance the usefulness of the Global Ocean Observing System (GOOS) Regional Alliances (GRAs), *especially for the GRAs themselves*, but also for the global observation, validation, modeling and services efforts of GOOS.

#### The Outcome

Some of the 2013 survey results were limited, including no input received from NEAR-GOOS. And by the time of the GRF-VII meeting, all survey results were somewhat dated, so corrections, additions and updates from the GRAs were solicited both before and during the meeting.

***Recommendations proposed by this study were discussed at length at the GRF-VII meeting***, and most were adopted to some degree, with a number of good new ideas emerging from the discussion. ***It was decided at the meeting that the recommendations would be captured in a GRA Action Plan going forward, and this study report would be closed out.*** Minor factual corrections/updates that were recommended have been included in this final report.

## GOOS REGIONAL ALLIANCES (GRAs)



Black Sea GOOS

EuroGOOS

GOOS-Africa

GRASP = GOOS Regional Alliance of the Southeast Pacific

IOCARIBE GOOS = Wider Caribbean GOOS

IMOS = Integrated Marine Observing System (Australia)

IOGOOS = Indian Ocean GOOS

MONGOOS = Mediterranean Operational Network for GOOS

NEAR-GOOS = Northeast Asia Regional GOOS

OCEATLAN = Upper Southwest & Tropical Pacific

PIGOOS = Pacific Islands GOOS

SEAGOOS = Southeast Asia GOOS

US IOOS = US Integrated Ocean Observing System

-----Not GRAs, but related programs-----

SAON = Sustained Arctic Observing Network

SOOS = Southern Ocean Observing System

## FINDINGS

### Focus of the GRAs

There is wide variation in the focus of GRAs, with some focused mostly on biophysical research (IMOS) and others focused almost exclusively on public support products, like improved marine weather forecasting, tsunami warnings, etc (GRASP, OCEATLAN). Many GRAs have a full suite of observation types, but some have very limited observing technologies coordinated within the region by the GRA (IOCARIBE-GOOS, GRASP, OCEATLAN, PIGOOS, GOOS-Africa). A few are beginning to focus on biological observations supporting management of healthy ecosystems (Black Sea GOOS, IMOS, OCEATLAN, PIGOOS).

### Governance Structure and Organizational Approaches

The Global Ocean Observing System (GOOS) was formed in 1991 under UNESCO's Intergovernmental Oceanographic Commission (IOC), with the support of WMO, UNEP and ICSU. In 1994 the Concept of GOOS Regional Alliances was established.

Since then, different *organizational structures* have emerged for the 13 GRAs, having different alignments with parts of the IOC governing structure (IOC Sub-Commissions), and/or varying amounts of coordination with other organizations such as the Large Marine Ecosystems (LMEs) defined by the US National Oceanic and Atmospheric Administration, global meteorology programs under the World Meteorological Organization, and ocean and climate research groups (like WCRP/CLIVAR). The GRAs have varying levels of national government involvement and support.

There have been five basic organizing structures for GRAs:

1. An *association of institutions* working under a memorandum of understanding (MOU), with in many cases the members contributing annual dues. This is the approach of IOGOOS, MONGOOS, OCEATLAN and Black Sea GOOS.

2. *National legislation and/or administration.* The US IOOS has national legislation and Federal funding; IMOS is a national governmental program, but does not have specific legislation.
3. *International non-profit organization.* Since 2012, this is the approach of EuroGOOS.
4. *Associated with an international convention.* This is the approach initially taken by GOOS-Africa, under the Abidjan Convention on the Protection of Coastal and Marine Environment in Central and Western Africa of 2002 (a UNEP Regional Seas convention), with a pan-African approach including all African nations in one large, coordinated proposal. The pan-African proposal, a Regional Ocean Observing and Forecasting System for Africa (ROOFS-Africa) was not successful. GOOS-Africa is now being reorganized under the IOC Sub-Commission for Africa and Adjacent Island States (IOCAFRICA) and some GOOS-related activities have already been supported under IOCAFRICA.
5. *Networks or projects of regional organizations, with formal involvement of governments in the region and/or international bodies.* This is most common structure and is the approach of:
  - PIGOOS, under the Pacific Islands Applied Geoscience Commission (SOPAC, now the SPC Geosciences Division) and since 2009 with the Secretariat of the Pacific Regional Environment Programme (SPREP)
  - GRASP, under the Permanent Commission for the South Pacific (CPPS)
  - NEAR-GOOS
  - SEAGOOS, under the IOC Sub-Commission for the Western Pacific (WESTPAC)
  - IOCARIBE, under the IOC Sub-Commission for the Caribbean (IOCARIBE)
  - GOOS-Africa, under the IOC Sub-Commission for Africa and Adjacent Island States (IOCAFRICA)

Governance under an IOC Sub-Commission has met with mixed results. This approach seems to have worked very well for SEAGOOS, where the IOC Sub-Commission for WESTPAC has given good administrative support, hosted meetings, and provided seed money for pilot projects. IOGOOS has also partnered successfully with WESTPAC. GOOS-Africa is already reaping benefits from reorganizing under IOCAFRICA. IOCARIBE-GOOS, however, has met with little success either as an independent network of regional organizations or reorganized under the IOCARIBE Sub-Commission.

Despite the broad variability in types of organizing structure across the GRAs, this "*whatever works*" approach is both necessary and appropriate given the diversity of national and institutional interest in sustained ocean observations, and the fact that neither IOC nor GOOS is a major source of funding or direct management of the GRAs. It is important, however, to examine the GRAs which seem to be struggling (Black Sea GOOS, GOOS Africa, GRASP, IOCARIBE GOOS, NEARGOOS, and possibly PIGOOS and SEAGOOS), and find ways to better support them.

One aspect of organizational structure that does seem to work is a *sub-regional approach* within GRAs, with different members for different parts of a large GRA area. This has proved successful in (EuroGOOS, IOGOOS and US IOOS), and may be helpful in other GRAs, especially those with multiple ocean areas included in their region.

### Organizational Alliances and Funding Sources

Four of the GRAs (IOGOOS, SEAGOOS, GOOS-Africa and IOCARIBE\_GOOS) indicate alliances with regional *Large Marine Ecosystems (LMEs)*, a concept developed by the US National Oceanic and Atmospheric Administration (NOAA) and in many cases funded through projects by the Global Environment Facility (GEF), with IOGOOS receiving equipment and ship time contributions from LMEs in their region.

Two GRAs (SEAGOOS and IOGOOS) are receiving administrative and seed money support from the IOC Sub-Commission for WESTPAC.

In addition:

<b>GRA</b>	<b>Funding Source</b>
Black Sea GOOS	Works with EuroGOOS and receives funding from the European Commission
EuroGOOS	Funded by Member contributions, proposals funded by the European Commission, and European Union funding for the MyOcean / Copernicus Marine Environmental Monitoring Service data portal
GOOS-Africa	It is unclear what, if any, funding sources are available, other than a very small budget from IOC through the IOCAFRICA secretariat
GRASP	Receives funding for projects from its member nations
IMOS	Funded by the Australian government, and international ocean research projects
IOCARIBE GOOS	Has over the years had funding from the GOOS Project Office, US State Department, and the Canadian International Development Agency, but its source of funding now, if any, is unclear; although there is a small amount of support from NOAA
IOGOOS	Received administrative and funding support from the IOC regional office in Perth for meetings, and national funds from China, France, Japan, India, US, Australia, and regional LME programs
MONGOOS	Funds were not included in their GRA survey input, but this has come primarily from European Commission projects and national funding
OCEATLAN	Received funding from their regional governments, particularly their Navies, and from the regional oil and gas industry
PIGOOS	Received project funding from governments of the US, Australia, and New Zealand
SEAGOOS	Received administrative and funding support from the IOC Sub-Commission for WESTPAC, and project funding from the GRA member governments China, Thailand, Malaysia and Indonesia
US IOOS	Receives its funding primarily from the US government, though some projects sponsored by the IOOS regional alliances are funded by State and local governments and by regional industry interests. The US IOOS central office, through its Federal Advisory Panel, is investigating the possibilities for raising non-governmental funds for some of its products that support the general public and maritime industries.

### **Partnerships across GRA boundaries**

Some of these partnerships seem to be working well, but other potential opportunities are possibly being missed:

- An excellent example of across-GRA cooperation is the work and support of EuroGOOS for MONGOOS and Black Sea GOOS.
- GRASP indicates their plans to coordinate with other GRAs (OCEATLAN, IOCARIBE-GOOS) in the Latin America area, but as noted below in the "GAPS: section, this may not be their best focus for across-GRA cooperation.
- IMOS is cooperating, including providing some resources, with IOGOOS and PIGOOS, and SOOS as a related program.

- IOGOOS is cooperating with SEAGOOS, both of them benefiting from the support of the IOC Sub commission for WESTPAC

### Implementing Approaches

*Individual projects* seem to be the best way for developing GRAs to proceed, because this gets national partners to focus their efforts on a defined project and work together often in spite of regional political complications. This approach is an excellent way to initiate projects and cooperation, which is important despite the fact that it does not always lead to sustained funding.

Most of the developing GRAs are understandably focused on *public services*:

- The GOOS Regional Council can address *cost-effective technology transfer* among GRAs that is focused on techniques for development of required public service products, including observations, standards, modeling (if needed), preparation and timely dissemination methods.
- Partnerships between developed GRAs, sharing technology and implementation with developing GRAs, can greatly facilitate the demonstration of value of public service products within a region.

### GRA-Identified GAPS

- *Black Sea GOOS has many needs.*

The types of observations are limited, with no gliders, HF Radar, animal tagging, or ocean acidification measurements. The drifter program is not sustainable, and there are not enough Argo floats. Most coastal stations do not provide real-time data, and some data have restricted access. Coverage in the east and southeast coastal areas of the Sea is very sparse. There is a severe lack of physical and biogeochemical observations in the open sea. Their ARENA project requires help with quality control; and the BulARGO project requires training and ship-time. There is also not good integration among the various observing networks and projects. EuroGOOS is apparently working with Black Sea GOOS to address these gaps at some level.

- *EuroGOOS is well-developed, but lists a number of forward-looking gaps.*

Funding is required for sustainability of many of the existing observing programs. Long-term time series are needed. There are under-sampled areas, especially in the Black Sea and the Arctic. Gaps in Arctic observations may be improved by robust cooperation with the Sustained Arctic Observing Network (SAON), which is not a GRA but a related program. EuroGOOS has recently expressed ambition to explore the formation of an Arctic GRA, although numerous political barriers would need to be overcome. Forecasting models need freshwater input data from rivers. Marine meteorological observation networks need expansion to improve weather forecasting.

EuroGOOS is addressing these gaps.

- *GOOS-Africa listed as major gaps training, IT equipment and telecommunications for rapid data access and sharing, as well as a concern about fragmentation rather than integration of ocean observing efforts.*

Their survey input included information about a 5-year, \$15M proposal for a Regional Ocean Observing and Forecasting System for Africa (ROOFS), but this proposal was not successful. Oversight and administrative support for GOOS-Africa are now under the IOC Sub-Commission for Africa, and there are a few GOOS-related activities that have been organized under IOCAFRICA. There is participation by the Mediterranean-bordering African States Egypt, Tunisia and Morocco in MONGOOS GRA activities, but as noted below (in *MONGOOS*), this has led to little investment in ocean observations along the African shoreline of the Mediterranean. There is also some mention in the IOGOOS input of observations along the East Coast of Africa supporting monsoon predictions and basin-wide circulation

studies. There is no indication of observation activities along the western coast of Africa.

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Despite the initial focus on pan-African planning and oversight, this is an example of a GRA that could certainly benefit from a sub-regional approach. While retaining an overarching pan-African approach to strategy and planning, it would be useful to officially create several sub-regional groups under this GRA with appropriate African nations as members, but all reporting to a pan-African GRA Office. These could be a Sub-Region for the Mediterranean working with MONGOOS (already essentially exists); a Sub-Region for the East Coast of Africa working with IOGOOS (already some efforts have begun); a Sub-Region for the West Coast of Africa (not clear what alliances should be sought); and a Sub-Region for the land-locked States to clarify and forward their requirements for seasonal climate, rain/drought, etc. products (perhaps best done in partnership with WMO). IOC/GOOS HQ and/or GOOS Regional Council Chair might work with IOCAFRICA to develop a plan to address these issues.

- **GRASP** lists as gaps the need for more sea surface temperature, sea level, and wave buoy observing systems, as well as the need for an accessible data portal and more training. The need for biological and ecological observations is also noted.

This review also noted a surprising lack of reference to ENSO observations, models, or public products considering the area. It is natural for GRASP to seek alliances with OCEATLAN and IOCARIBE, which they are doing, because of land-based, continental politics, but it might be more useful for GRASP to focus on working more with Pacific-based GRAs, like PIGOOS and SEAGOOS and IMOS.

Closer links to the *Tropical Pacific Observing System in 2020* project could be explored.

- **IMOS** lists gaps in observations from northern Australia, southeastern Asia, the deep ocean, and the Southern Ocean including sea ice. Also highlighted are needs for improved data assimilation, and observing system design as well as sustained ecological observing and operational ecosystem modeling.

It might be helpful to work more with IOGOOS, SEAGOOS and GOOS Africa (East Africa Coast) on observations to support boundary current impacts and basin-wide circulation to improve monsoon onset forecasting, as well as other scientific and public-use products.

- **IOCARIBE GOOS** seems to need everything.

It was originally established as a GRA under the IOC Sub-Commission for the Wider Caribbean in 1999, with a Group of Experts and a Strategic Plan and original funding from the IOC GOOS Project Office, the US State Department's White Water to Blue Water program, US AID, and the Canadian International Development Agency (CIDA), all focused on water-level monitoring in the Caribbean Basin. GRA activities were halted from 2006 to 2011 due to lack of funding. Efforts to re-invigorate the activities in 2011 to 2013, including an initiative through the Organization of Eastern Caribbean States (OECS) seem to have met with limited success. The national ocean observing efforts of Mexico, Cuba, Venezuela and Colombia are relatively robust, but there is no regional mechanism for data access or data sharing, or support for basin-wide public-safety products.

Given the obvious global observation interests in this culturally and politically diverse region -- on a wide gamut from glider profiles for ocean heat impacts on hurricane forecasting to measuring coral bleaching, ocean acidification and other biogeochemical and biological signals -- as well as the presence of a number of developed countries (USA, UK, France, Netherlands), some IOC/GOOS HQ effort to re-invigorate GRA organization and activities in this area seems to be appropriate.

- **IOGOOS** has been set back by both piracy and vandalism of observing technologies. They also have a need for better observing of the basin-wide boundary currents.

This would indicate that expanded cooperation with GOOS-Africa on the African East Coast, and IMOS on the Australian West Coast, might be helpful. Robust cooperation with the Southern Ocean Observing System (SOOS), which is not a GRA but a related program, could also be useful.

- *The MONGOOS region is supported by EuroGOOS and fairly well sampled, except for observations along the African coast. This despite MONGOOS membership of three African nations: Egypt, Tunisia and Morocco.*

As GOOS-Africa reorganizes under IOCAFRICA, it will be helpful for MONGOOS, EuroGOOS and/or IOC/GOOS HQ to provide direct seed funding and/or improved information about funding opportunities for technical training, observing technologies, calibration and standards, data transmission, and other basic techniques to the nations in this part of the Mediterranean Sea.

- *NEAR-GOOS provided no input to the GOOS Regional Council survey.*  
Redoubled efforts to seek input from this GRA are called for.

- *OCEATLAN lists as their primary gap a problem of frequent staff turnover in the Navy offices that provide administrative support to the GRA programs. Also mentioned are the problem of vandalism of ocean observation technology, and the complete lack of biological observations.*

This GRA has a number of active projects managed mostly by Brazil and funded through national governments, Navies, and the oil and gas industry, which are mostly focused on regional issues, but are also supporting global efforts through the Global Sea Level Observing System (GLOSS) and the Prediction and Research Moored Array in the Atlantic (PIRATA). This GRA seems fairly stable, except for staff overturn, and involved in an appropriate mix of projects.

More communication of activities, problems, lessons learned, etc with IOC/GOOS HQ and/or GOOS Regional Council Chair would be helpful.

- *PI-GOOS lists among their gaps the need for additional local coastal observations, and physical oceanography observations, chemical observations for ocean acidification, and biological/ecosystem observations for coral bleaching and other climate change indicators.*

Given the remote placement of the islands in this GRA, along with their natural immediate attention to global climate change issues like sea level rise and coral bleaching, this region seems ripe for added international attention and assistance in ocean observations.

- *SEAGOOS has listed the following as gaps: lack of funding, regional politics, external outreach and understanding for governments in the region.*

SEAGOOS has been supported administratively and through project seed-money by the IOC Sub-Commission for WESTPAC. They have also reached out to cooperate with IOGOOS, and regional LMEs. This GRA clearly advocates for focused *pilot projects* to get past regional politics and lack of national government support in the region.

Obviously pilot projects are the way forward for this GRA in the near-term, but additional contacts, interactions, assistance, technology transfer, training and advice from the IOGOOS and IMOS could be helpful.

- *US IOOS did not identify gaps in the survey.*

It appears some future efforts at coordination or support from this GRA to IOCARIBE-GOOS could be useful.

While in general this report focuses on the opportunities presented by GRA twinning and partnerships, it is also important to explore partnerships with organizations outside of the GRA sphere to accomplish regional goals in sustained ocean observing and the delivery of services.

## PROPOSED GENERAL ACTIONS & RECOMMENDATIONS

- **PROPOSED ACTION 1:** It will be useful to *foster a more robust sense of community* among the GRAs. To this end it will help to *improve communications* among the GRAs, and between the GRAs and IOC/GOOS HQ (including the GOOS Project Office, the GOOS Steering Committee and the GOOS Science Panels addressing the Essential Ocean Variables-EOVs). This will support the sharing of new ideas, pilot project results, lessons learned, needs, training opportunities, possible new funding sources, and news among the GRAs. This will also help struggling GRAs to show their governments a robust organization to be joined. This should be supported, including with staff and some minor finances, by the IOC/GOOS Headquarters and the GRA Council Chair's office.
  - 1A.** Ensure all GRAs have access/active links to the new IOC/GOOS HQ website, and provide technical assistance if they do not
  - 1B.** Add the global map of GRA regions, with their names spelled out across bottom of the map, to the IOC/GOOS HQ website
  - 1C.** Continue to encourage the posting of news items from the GRAs on this website
  - 1D.** IOC/GOOS HQ work with GRAs to ensure that some GRA reports sent to other organizations, such as the WESTPAC, other IOC Sub-Commissions, and other international organizations (SPREP for PIGOOS, CPPC for GRASP) are also copied to them
  - 1E.** The GRA Council Chair promote development of and support a robust website and ensure full links among all of the GRAs and the IOC/GOOS HQ website
  - 1F.** IOC/GOOS HQ and the GRA Council Chair also work with the larger IOC organization to coordinate any future surveys on ocean observation issues to minimize duplication of effort.
  
- **PROPOSED ACTION 2:** It will also be useful to *improve external understanding* of the GRA programs and progress. This may also provide a channel to bridge political problems within some GRA areas, including raising awareness/importance of the GRAs with potential regional and national funding organizations.
  - 2A.** Create a two-page summary profile for each GRA. These can be drafted based on the GRC survey results, with updated information from the GRF VII and follow-on interviews
  - 2B.** These GRA Profiles can be hosted on the new IOC/GOOS HQ website, and on the GOOS Regional Council website, where they can be updated by the GRAs as needed
  - 2C.** The capacities and priorities of the GRAs could be included in the *GOOS Strategic Mapping*
  - 2D.** These Profiles can also be included in an IOC brochure about the role and importance of GRAs printed as one-page-front-and-back summaries for each GRA to be included in an IOC brochure, with the profiles to be provided in a brochure pocket
  - 2E.** This kind of knowledge sharing can also lead to opportunities for cross-GRA technology transfer and cooperation
  
- **PROPOSED ACTION 3:** It will be useful to establish a mechanism for virtual and/or mobile *GRA Assist Teams*.
  - 3A.** These need not be full-time, but convened and configured as needed, and focused on the specific need(s) of individual GRAs.
  - 3B.** These teams can address many problems of the GRAs on an as-needed or as-funding-permits basis, to include improving communications, training, helping with pilot project design and funding proposals, help with finding funding sources through the new IOC Capacity Development Strategy 2015-2021, helping with data standards and data sharing plans.
  - 3C.** Some funding for these teams may be found in IOC Capacity Development projects

**3D.** Both IOC/GOOS HQ and GRA Council Chair can assist in finding these funding opportunities

➤ **PROPOSED ACTION 4:** It will be important to foster ongoing *links between GRAs and the GOOS Panels.*

**4A.** An opportunity is presented by the fact that several of the GRAs (Black Sea GOOS, IMOS, OCEATLAN, PI-GOOS) are beginning to include in their statements concerning gaps the need for biogeochemical and biological observations. These may present good opportunities for collaboration between the GRAs and both the Biogeochemistry and the Biology and Ecosystems Panels of GOOS.

**4B.** The relatively new GOOS Biology and Ecosystems Panel could focus on cooperation with the four GRAs listed above that have indicated their need for biological observations, and perhaps also on the three GRAs that list alliances with LMEs (GOOS-Africa, IOGOOS, SEAGOOS). Outreach and cooperation with marine conservation organizations and funders in these regions may lead to opportunities for funding of biological observation technologies and projects.

**4C.** In particular, the GOOS Biology and Ecosystems Panel might focus on the rich biodiversity off Madagascar (GOOS-Africa, IOGOOS) and in the Coral Sea (SEAGOOS) and investigate opportunities for funding of biological observations through marine conservation organizations in those regions.

**4D.** The GOOS Physics and Climate Panel might upgrade efforts to obtain basic met/ocean observations off the east and west coasts of Africa to improve global prediction models, and off the east coast of Africa to improve forecasting of the onset of the Indian Ocean Monsoon and Dipole

**4E.** It would be helpful to find a project or focus area that could strengthen the alignment both among the three GOOS Panels *and* between the Panels and the GOOS GRAs. A suggestion is that the three GOOS Panels (Physics and Climate, Biogeochemistry, Biology and Ecosystems) work with PI-GOOS on possible observation projects around the Pacific Islands as "sentinel" indicators of sea surface temperature, sea level rise, ocean acidification and ecosystem effects of climate change.

➤ **PROPOSED ACTION 5:** It will be beneficial to continue efforts which *include related ocean observing programs in the GOOS Regional Alliance (GRA) family* -- such as the Sustained Arctic Observing Network (SAON), the Southern Ocean Observing System (SOOS), and the Sargasso Sea Alliance (SSA). They each have different histories, structures, funding mechanisms, regional politics, and goals (in the case of SSA, the focus is new international law concerning high seas protections, but ocean observing is required to support this goal). Some level of increased alliance, or at least improved cooperation, is advisable to foster global coordination in technology design and calibration, data management standards, data sharing, and observing network design for global ocean and climate models.

**5A.** It will be important in the short-term for the GOOS family to improve their internal and external communications and their support to GRAs.

**5B.** It will then be useful for the GOOS Regional Council to consider a longer-term (perhaps two-year) plan for approaching these other programs with benefits and strategies for working more closely with GOOS, up to and including becoming GRAs.

## **FINAL NOTE:**

### This effort is ongoing:

- The initial Report (v.1) was provided by consultant LKGlover on 12 August 2015
- This version (v.6) incorporates comments from A McCurdy, E Lindstrom, J Gunn, A Fisher, T Gross and T Moltmann
- A briefing based on the Report's findings and recommendations will be presented at GRF VII (GOOS Regional Forum) meeting in Heraklion, Crete on 22-24 September 2015
- The Report will be broadened based on updates from GRAs before and/or at the Forum, along with some follow-on interviews and/or interactions with GRA leads
- Send any corrections, updates, comments to Andrea McCurdy at:  
[amccurdy@oceanleadership.com](mailto:amccurdy@oceanleadership.com)

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## ANNEX 1.

### Questions from the GRA Council Chair in the 2012 Survey of GRAs

#### A. BASIC INFORMATION

1. Principal Goals of the GRA
2. Who is affiliated with the GRA?
  - Countries
  - National/Federal Agencies per Country

- Consortia for Thematic Functions (includes GRA collaborative working groups or consortia)
  - International and Regional Associations
  - Sources of external support
3. Governance and Management
- a. What are the governing bodies of the GRA?
  - b. Please list the agencies directly involved in the Governance of the GRA
  - c. Please list Management meetings, dates and supporting documentation if possible
4. What documents guide the GRA?
5. Communications
- a. Is there a GRA Website and if so, what is it, and who is primary contact for web site support?
  - b. Does it have links to other websites?
  - c. Does it link to the OIC HQ website and vice versa
  - d. Is there a GRA Newsletter and if so, how is it distributed, how often and to whom in the GRA?
  - e. To whom are the newsletters distributed?
- B. SOCIETAL GOALS AND OBSERVATION REQUIREMENTS**
6. Chart priority areas and sustained observing requirements
- C. OBSERVATIONAL ARRANGEMENTS AND CAPACITY**
- 7a. What is the estimated overall 'readiness level' of the GRAs' observation network and capacity?
- 7b. Describe the rationale for your assessment of 'readiness level'
- D. DATA MANAGEMENT ARRANGEMENTS AND CAPACITY**
- 8a. Does the GRA have a Data Management Portal that is accessible to the GRA stakeholders?  
If so, please describe, and include links to sites where data can be retrieved.
- 8b. What is the estimated overall 'readiness level' of the GRAs Data Management Portal
- E. INFORMATION GENERATION ARRANGEMENTS AND CAPACITY**
9. Modeling Capacity -- Describe the operational modeling capacity in you GRA.
- F. DEVELOPING CAPACITY TO DELIVER**
10. Does the GRA have a Capacity Building Strategy and if so, is it implemented effectively across the entire GRA region? Please describe.
11. Identify gap areas
12. Provide 3 top success stories