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(of UNESCO)

INFORMATION DOCUMENT

**BASELINE STUDY
FOR AN ASSESSMENT OF NATIONAL CAPACITIES AND NEEDS IN MARINE
RESEARCH, OBSERVATION AND DATA/INFORMATION MANAGEMENT**

Summary. At the Rio+20 Conference (Brazil, 20–22 June 2012) the IOC made a voluntary Commitment on ‘Building Global Capacity for Marine Sciences, Observation and Transfer of Marine Technology’. This commitment aimed at conducting a global and regional assessment of capacity development needs in the field of marine scientific research and ocean observation especially in developing nations and Small Island Developing States (SIDS), leading to the formulation and implementation of a global strategy to implement these needs, through partnership with countries, donors, UN Agencies, global financial institutions and the private sector.

This report pertains to the first part of the commitment and presents the results of the assessment of capacity development needs in the field of marine scientific research and ocean observation in a sample of 20 countries.

This document is used in conjunction with working document IOC-XXVII/2 Annex 10 of the 27th session of the Assembly (Paris, 26 June–5 July 2013).

1. INTRODUCTION

This Baseline Study was carried out as a voluntary commitment of the UNESCO-IOC to the Post Rio+20. The objective was to gather information on the existing national needs and capacities in marine science research, observation and data/information management within IOC Member States and is being conducted via IOC Action addressees in cooperation with the IOC Secretariat, its programs and actions, the IOC regional Sub Commissions and decentralized offices as well as the UNESCO-national.

The Study responds to the CD needs of the Member States (IOC XXVI - §193) to effectively participate in and to benefit from all areas of the work of the IOC for the maintenance of healthy ocean ecosystems (IOC XXVI - §117, IOC XXVI - §147). It focuses on the needs of Member States in Africa and other regions (IOC XXVI - §124) as well as SIDS, thereby also collecting information on the current status of their available national capabilities in marine science education and research.

The study attempts to assess the member states' current capacity to develop management procedures and national policies in marine sciences (IOC-XXVI - §61), identify the needs for CD and the transfer of technology according to IOC guidelines for the transfer of technology/cooperation (RIO+20) for implementing Part XII and XVI of UNCLOS as well as to effectively participate in regular assessment processes.

2. RECIPIENTS OF THE BASELINE STUDY

IOC Secretariat, IOC Programs and Units as well as the IOC Sub-commissions and decentralized offices could use the study outcome to initiate and implement CD actions enabling countries in Africa and SIDS as well as the other new IOC member states to actively and effectively participate in and benefit from IOC Programs and actions both individually and in cooperation with regional and international partners. For the IOC Member States, the study might be useful to streamline the CD efforts embedded in their ongoing and planned bilateral and multilateral cooperation within North-South and South-South Cooperation, and to prioritize new investments in national efforts of marine research, technology and education.

3. MEMBER STATES SELECTED FOR THE BASELINE STUDY

The survey was initially planned on a subset of coastal IOC member countries selected using the following criteria: (1) Developing countries with the low income, low-middle income and upper middle income according to the World Bank categories, (2) Countries with national development plans including those supported by the UNESCO, (3) Geographical balance with particular attention to countries from IOC electoral groups (V: Africa, III Latin America and Caribbean, IV Asia and the Pacific including small island member states), (4) Current coverage of IOC subsidiary bodies and UNESCO Field presence, (5) Willingness to more actively associate with IOC Programs or requests thereof, (6) Recently joined IOC member states. Table Aa gives the final list of countries approached.

4. INDICATORS SELECTED FOR THE ONLINE SURVEY

The indicators for the survey were identified based on the CD needs formulated by, for example, the IOC strategy for capacity development, in the CD recommendations outlined in IOC resolutions, in the RIO+20 document as well as in documents formulated by other UN and other agencies (such as UNICPOLOS, Regular Process) as well as on the experience of institutions currently active in the field of research-based CD.

Based on these criteria a questionnaire was prepared, which allowed to assess the capabilities and needs of countries while taking into account the potential differences among them in their current status or for developing management procedures and national policies in marine sciences (IOC

XXVI - §61) and of drawing benefits from transfer of technology for implementing Part XII and XVI of UNCLOS via technology transfer as well as (iii) of effective participation in regular assessment processes.

5. RESOURCES AND METHODS

The study was developed and implemented in close consultation with the IOC Secretariat in Paris (Mitrassen Bhikajee, Julian Barbière, Stefano Belfiore). It was conducted: (i) using an online questionnaire (see below) via IOC action addressees and (ii) in cooperation with the IOC Programs and Units as well as the IOC Sub-commissions and (iii) wherever available and possible, used several available resources and methods.

5.1 ONLINE QUESTIONNAIRE

The questions so developed were used to conduct an online survey among the representatives of the selected IOC member states. The template of the survey was discussed and tested with the capacity development section of the IOC Secretariat. The final template is given in Table Ab. The survey is powered by the surveymonkey.com website.

The selected countries were initially contacted through their representatives at the IOC, UNESCO as well as at the National UNESCO Commission via the IOC Addresses List with the assistance from the IOC Secretariat. Names of qualified experts supplied by the IOC sub-regions and decentralized Offices as well as of those contacted during Regional and International Workshops and Meetings were subsequently added to the list. Further assistance was given by other intergovernmental organizations involved in oceanographic research and education (INOC with Secretariat in Izmir, Turkey) and Institutions in the region that are actively involved in IOC activities (INCOIS, Hyderabad, India). They made available their network addressees list and provided assistance in the distribution of the questionnaire.

5.2 IOC PROGRAMS AND UNITS

Following is a list of the contacted IOC Action Groups and Units:

1. Paris, France, June 11, 2012: IOC Secretariat, Mitrassen Bhikajee, Stefano Belfiore, Julian Barbiere (Visit)
2. Ostend, Belgium, October 1-2, 2012: IODE Office, Peter Pissierssens and Claudia Delgado (Visit)
3. Kingston, Jamaica, October 5, 2012: IOCARIBE, Cesar Toro (Skype)
4. Bangkok, Thailand, October 11, 2012: IOC WESTPAC, Zhu Wenxi (Skype)
5. Nairobi, Kenya, October 22, 2012: IOC Sub Commission for Africa and the Adjacent Island States, Mika Odido, (Skype)
6. Henties Bay, Namibia, November 5-7, 2012: Mika Odido (Visit)
7. Miami, USA, November 12-15, 2012: WOA WCR Workshop, C.Toro) and the wider Caribbean ocean community (Visit)
8. Paris, France, November 21-22, 2012: Mitrassen Bhikajee & Meeting with IOC Program and Action Heads in Paris (Visit)
9. Ostend, Belgium, December 2012: Annual Consultations among CB activities of UN organizations (Visit)
10. Perth, Australia, December 7, 2012: IOC Regional Program Office (Nick D'Adamo and Louise Wicks) (Skype)
11. Suva, Fiji, December, 2012: IOC Program Office PTWS Rajendra Prasad Phil Wiles (several Emails)

12. Copenhagen, Denmark, January 17, 2013: HABS, Henrik Enevoldsen
13. Ostend, Belgium, January 17, 2013: OBIS, Ward Appeltans
14. Paris, France January 24-26, 2013: Mitrasen Bhikajee, Julian Barbière (Visit)

5.3 ADDITIONAL RESOURCES

- Existing information from documents, reports and data banks of the IOC, its Sub-commissions and Subcommittees, and other UN agencies as well as, wherever possible, other national and international agencies (internet search, emails, printed material, visit to IOC Secretariat, IOC Program Offices in the Regions)
- new information through personal, telephone and Skype interviews and questionnaires reflecting the study goals and the chosen indicators,
- information from the available personal network of scientists, institutions and organizations especially in Africa and Asia (personal interviews, email questionnaire),
- Information from the department of the relevant ministries, aid agencies, embassies and consulate of countries as well as donor countries (OECD website, personal interviews, email questionnaire)
- Information in reports from and on countries at international meetings, in national development plans and strategies, wherever such information is available (attendance at meetings, if appropriate, email, telephone, Skype)
- Interaction with potential stakeholders at meetings of opportunity and/or in prearranged groups (organize side meetings at events, if possible).

6. RESULTS OF THE BASELINE STUDY

6.1 CONSTRAINTS TO CD

A common constraint is the lack of resources. This prevents local investment in human resources and infrastructure and the creation of critical mass of experienced and well trained experts for local CD actions (e.g. training, curriculum development). As such, training and capacity building efforts are sporadic with few opportunities for sustained long term development.

Scarcity of experienced and trained scientific and technical personnel in the field has led sometimes to the recruitment of less qualified or non-specialists to certain jobs. Complacency in the recruitment process has hindered further CD actions locally because of lack of qualified supervisors.

Ocean issues are often side-lined in national development policies and plans because of focus on domains that are perceived to be of more economic or social benefits or of concern. Furthermore, sporadic changes in policy prevent long term CD. Many countries lack systematic efforts in CD to address their ocean and coastal development needs. They are often addressed sporadically/ ad hoc depending on the availability of funds.

Lack of local resources and investment has often led to over-dependence on funds from outside for CD actions. There is scarcity or a lack of regional and international support specifically meant for CD actions. Any such action occurs normally within projects and ends with them, and thus is of limited value for long-term CD.

There is very often no incentive or mechanisms to retain locally built capacity. Where this is in place, the efforts are not always adequate. This lack of specific recruitment at national level is due to funding constraints.

Some countries lack a coordinating agency for marine affairs to implement policies and design mechanisms to make the best use of whatever capacity that there is locally. There is a high turnover of employees at ocean-related public departments and ministries; employees leave for other more lucrative jobs within the country or abroad (brain drain).

There have however been international (global, regional and bilateral) collaborative programs that have helped to keep newly-qualified personnel from Universities and technical schools in the field. Such opportunities have been few. There are provisions in some countries for hiring foreign experts for training and faculty development, though for short periods with their limitations.

In some cases language is a barrier.

“For SIDS in the Pacific Ocean, there are constraints related to lack of communication among islands, access to scientific support systems, as well as day-to-day mentoring because of scarcity of experts”.

6.2 IOC THEMES, URGENCY & CURRENT HANDLING

All IOC activities and programs are perceived to be very relevant and important by the surveyed countries (Table Ba). As for the urgency for CD actions, Africa and the Adjacent Islands ranked ocean sciences and related education high. This is followed by the need for CD in Data Management, Marine Management and in Assessment and Planning of marine space (from the need to develop development of marine policy and national development plans and mostly because of the expected economic benefits). (Table Bb). According to IOCWESTPAC programs in Ocean Sciences such as HABS and ICAM as well as Hazards Prevention and Forecast rank high in that region.

The programs under climate change including sea level observations, and programs of hazards prevention and forecast and early warning systems remain important issues, but there seems to be a greater need for capacity development and related technology transfer for IOC programs in marine management, monitoring and mapping. This is especially so for SIDS also in view of the ongoing and expanding exploration and exploitation of living and non-living resources and their potential impact on coastal and ocean systems

In many developing countries, the need is for demand-driven CD and for IOC-CD actions to support for the implementation of MDGS. The Spincam project in which Chile, Colombia, Ecuador, Panama and Peru participate is an example.

6.3 OCEAN EXPERTS

Generally, few national efforts are in place to meet the CD needs. Some capacity exists in fields such as Ocean Sciences, Data Information & Exchange, Marine Management and Mapping and Monitoring. Such efforts lag behind in Assessment and Planning. Here, there is a need for IOC CD interventions. IOC support is most clearly visible for Data Information & Exchange followed by for Ocean Sciences and Hazards Prevention & Forecast, Marine Management and Mapping & Monitoring (Table Bc)

There is a pool of ocean experts among nationals of the surveyed countries, who are active outside the country. Some of these experts contribute to national marine activities of their countries (Table C) as advisors, within exchange programs and in guest positions. This contribution occurs mostly in Ocean Sciences and in matters related to the implementation of conventions and treaties and occurs seldom or not at all in other fields.

This is an important pool of experts who could help in enhance capacity building efforts at national level (Table C). IOC could team up with agencies and ministries to find ways to systematically channel this important resource for national CD actions. Although guest positions, exchange programs or advisory and consultant positions are appear to already available, the information on these is diffuse and not widely known. As a first step, IOC could make these programs widely known. Similar programs are in place in countries such as India and China to everyone's benefit.

The IOC could also work closely with other intergovernmental organizations, whose members are also member states of the IOC. These are organizations promoting science and technology in developing countries such as the INOC and NAM S&T. Government departments remain the major takers of graduates followed by academic institutions, other public sector services and private sector in that order. But as mentioned under "constraints to CD" there are no mechanisms or incentives to keep these graduates on ocean-related jobs and they leave for non-marine sectors.

6.4 MARINE SCIENCE AND TECHNOLOGY EDUCATION:

A critical mass of ocean experts is still lacking in many countries (in the <5 category or none at all). This brings into focus the CD need towards creating qualified experts requiring long term programs also in the field of education and research. In ocean sciences, there are more national efforts. These are however considered inadequate or weak. Only countries such as Benin (?), Nigeria and Tanzania in Africa, Ecuador and Uruguay in South Americas, India as well as Turkey consider the available expertise adequate (Table C)

The majority of the countries felt they had at least some on-going effort in enhancing marine science education (Table D). Exceptions are SIDS. 10 of them had full-fledged marine-related curricula, the others partial ones at Universities and Research Institutions. In 21 countries public and private universities and in 15 also research institutions offered education in marine science. 21 of them offered bachelor level education, of which 19 had the possibilities for student to continue to Masters level and 13 to PhD level. Most graduates are marine biologists; very few in other disciplines such as physical oceanography or others.

However, very few offers technical education in ocean related themes (only 5). This is an aspect of CD which does not seem to get proper attention. Developing capacity in the ocean realm requires qualified technical personnel also to make the full and best use of the potential that technology transfer entails.

None of the Pacific Island Countries has any real ocean research or related services. A few larger SIDS like Fiji have a Marine Department but provide limited services mostly to safeguard sea transportation. Higher education Institutions are only in Fiji, Papua New Guinea and Samoa. Fiji acts as the regional node. And University of South Pacific has a dedicated oceanography program. Most of the training and education activities are dependent on the type of guest researchers coming from within the region.

For SIDS, explore the possibility of IOC establishing a Centre of Excellence – like the ones IOC already has, regions in cooperation with an Institute or one of IOC's other partner organizations. Intergovernmental organizations such as the INOC, which has an observer status at the IOC General Assembly or NAM S&T might be interested in promoting marine science in IOC developing country member states for example in a least developed country.

6.5 TRAINING PROGRAMS

There have been many workshops and training programs in countries that directly aimed at CD. One-off events generally take precedence over recurring or periodic ones (Table E).

The main experience of countries with the IOC training programs has been through the IODE. For European countries such as Montenegro and Albania SeaDataNet and others for Ocean Teacher Courses take precedence over the others.

The Ocean Teacher courses are beginning to make an important contribution in support of higher education initiatives in Member States. Member states investing in developing ocean science curricula at their institutions of higher learning find successfully accredited Ocean Teacher Courses to be helpful.

In Africa, training programs of ODINAFRICA are being used as models for implementing similar training programs by national institutions for their students. Programs modelled on ICAM and HABS are also being offered in the WESTPAC region.

Some of these successful non-climate programs and actions could be tailored to meet the needs of Small and Island States, especially in the Pacific. The IOC Secretariat could capitalize on the current excellent cooperation among HABS, ICAM, ICAM & OBIS to develop such training programs to support the UNESCO-IOC Program Office in Fiji to expand its current mandate and to cover the full range of IOC Programs and Actions.

Although there have been many sea-based training efforts within regional and international programs, such efforts are rare. They occur isolated from the training programs for data and information exchange. Training programs linked to sea-based training in data collection are considered valuable. IODE courses with at-sea activities on board research boats on one day trips, though rare, are examples. IOC has the option of teaming up with member states offering sea-based training programs.

The themes for training programs are chosen either by request from the host country, jointly by the host country and the IOC or by the IOC together with the sponsoring/funding agency. When independent funding (IOC) becomes available for CD and when countries develop their infrastructure facilities for research and training, the IOC could be more flexible in their response to requests from a larger number of countries than is currently possible.

CD efforts in marine sciences, including the training programs, need to take a long term perspective requiring the development and implementation of multi-tiered CD actions, which aim at personnel at different levels of qualification and career. For example, senior personnel in member states are better equipped to select training programs and actions best suited to their national needs, if they can be informed in “special short courses” on the status and availability of IOC programs and actions, rather than attending the whole long course or program.

Training programs of IOC or related UN agencies made only a small percentage of the overall training efforts in countries. Exceptions are programs for Hazards Prevention & Forecast as well as Data Information and Exchange, where more than 50% of the activities were related to IOC. The upshot is that there are other organizations and NGOs which are also playing an important role in issues that are dealt with by the IOC. IOC could explore the possibility of implementing CD programs jointly with those groups within the UN system that are active in the field (such as those taking part in the informal consultations).

6.6 KNOWLEDGE, PARTICIPATION AND BENEFITS OF IOC PROGRAMS AND ACTIONS

Overall the IOC programs and actions are known in countries. Very few feel that they know the programs well enough to take advantage through active participation. Additional efforts and support actions are needed to make the programs better known (Table Fa). Among those surveyed, only three countries (Benin, Tanzania and Nigeria) felt that the programs were known well enough to be actively engaged.

IOC may consider initiating actions with the governments directly to better disseminate information on IOC and its programs. One idea for example, is to encourage and support all national centers and universities conducting ocean – related research to induct liaison officers or contact persons for IOC actions, as suggested by the IODE (in the case of IODE it is to establish data managers in these centres).

Current participation in IOC programs as perceived by the group of countries in the baseline study in most cases is passive, or that needing additional support to build capacity for active participation. Only three countries (Nigeria, Tanzania and Iran) felt they were actively engaged in IOC. About 30 to 40% of the responses felt that there was no participation at all in IOC activities (Table Fb)

The IOC interventions are perceived to be beneficial when conducted at regional and global levels with regional training programs considered slightly more beneficial (Table Fc). This is especially the case in responses of the majority of countries for Data Information & Exchange and Marine Management. Countries have also benefitted from sending their nationals for trainings conducted elsewhere. (Table E).

Some SIDS such as Maldives consider regional and bilateral actions least beneficial. Others such as Honduras consider global and regional actions less beneficial and prefer bilateral actions.

Considering the ocean space under the jurisdiction of SIDS, a one-to-one engagement with them in CD is a better option. IOC might want to engage with agencies in the private and public sectors as well as with NGOs that have a stake in the sustainable management of oceanic ecosystems. Overall, except with tsunami warning through the Pacific Tsunami Warning and Mitigation System (PTWS), SIDS have not been a focus of IOC interventions in the past.

6.7 STATUS OF INFRASTRUCTURE FOR CD ACTIONS

In general, CD needs exist for the practice of ocean science, developing scientific and technical capacity for marine management, monitoring and planning. This includes the creation of a critical mass of ocean experts and facilitating the necessary technology transfer (infrastructure and equipment for research activities, long-term support the existing national institutions including technical training for the maintenance of infrastructure for field, lab or education).(Table G)

There is need for technology and infrastructure, here the availability of equipment for research, access to research vessels, technical training and support of educational institutions and technical schools in nations.

For SIDS in the Pacific, there is very limited access to scientific support systems on a day-to-day or mentoring basis (in contrast to regional participation through meetings) and an insufficient focus on non-climate risks as part of overall resilience building.

There is a need for practical, on the ground interventions that directly lead to increased resilience and quality of life. There, national capacity is limited for taking up most of the IOC programs. There are also problems associated with the remoteness, difficulty in accessing outer islands for interventions and the failure of donors to realize that accessing outer islands will require special arrangements (e.g. dedicated vessel), chronic problems with communications.

Within the Pacific SIDS, SOPAC (Secretariat of the Pacific Community) has a strong technical base with some ocean research programs including ocean wave modelling capability, and also provides GIS/mapping support. University of South Pacific also carries out ocean related research from time to time but its expertise varies depending upon the type of lecturers it recruits/retains”.

6.8 MARINE POLICY

The survey shows that there is strong interest among the surveyed nations to develop marine plans and many are in preparation (Table H). Ministries of Environment, Fisheries, and Marine Affairs (wherever they exist) are in most cases involved in taking decisions related to oceans and coasts. They work closely with other ministries, which have a stake on the countries' ocean and coastal space and its development. Policies are developed through a National Consultative Process.

Very few countries have a national maritime policy or development plan (7 yes, 9 in preparation, 10 none, but identifies the need); in most, they exist as a section of the national science and technology or national development plans. CD is often identified as a need, apparently without any substantial follow-up action. For national policy making, it is still a practice to hire international institutions. Some countries which had in the past developed National Ocean Policy input from multiple stakeholders, have failed to implement it apparently for lack of the required resource and capacity.

Some countries have developed small site specific coastal development policy for sensitive marine areas, while in others, there are laws and decrees about pollution control, green spaces, public domain along the coastal stretch, fisheries, exploitation of resources such as sand and now, increasingly about energy resources. Some use the National Environment Management Act, which has a component of coastal and marine environment issues

SIDS are countries with large ocean space and but not having the capacity to generate information that will allow them to develop policies and interventions to sustainably manage this space. Regardless of these, when it comes to participation in regional or international networks and being part of international conventions and treaties, some have been very active. "Obligations of the many existing conventions (not just ocean) are overwhelming" and lack of capacity makes complying with them more and more difficult.

In another case, there is not sufficient capacity and no clear research policy and consistent and continuous monitoring program either within academia and government or at key marine areas as it relates to pollution, nutrient loading, and lack of bathymetric data to develop proper planning

In the case of SIDS, IOC needs to be more involved in assisting with ocean policy, strengthening observations/monitoring and conducting tailored research while at the same time assisting to build capacities in other ocean related hazards than just tsunamis.

IOCARIBE stressed the importance of inclusion of oceans in national a science and technology strategy followed by the development of an Ocean Strategy. Once this is in place then targeted IOC-CD actions can be developed in consultation with the relevant government departments. Such CD actions will be in tandem with UNESCO's efforts in support of national development programs, one of the criteria under which the member states were selected for this baseline study.

A major limitation to establish any reliable maritime policy or governance structure, especially for countries having large marine space under their jurisdiction, is not having the adequate tools to practice ocean science. "There is a lack of clear research policy and consistent and continuous monitoring programs related to pollution, nutrient loading, lack of bathymetric data to develop proper planning and a lack of national land use policy to development especially on the coastline".

6.9 OUTREACH:

There is a need to become active to enhance the awareness among a broader community of the government and the academia of the full range of IOC programs and actions as well as the broad range of opportunities they offer in CD. Current ways of informing in Assemblies and Meetings appear not to have achieved this wide dissemination.

7. SUGGESTIONS FOR NEXT STEPS:

IOC has been contributing to CD in Member States through the instruments and mechanisms that are currently available and that are described in detail in the relevant IOC documents published previously. The presence of a critical mass of ocean experts in Member States will enormously improve the chances of success of CD actions and in retaining and sustaining the developed capacity.

The baseline study shows that countries are more and more turning their attention to the practice of ocean sciences, and many have initiated actions to enhance national capacities in the field. These actions go hand in hand with the efforts towards developing national strategies for oceans and coasts and seeking a more active role in setting the international agenda on the use of the oceans. Because of its unique position within the UN system, the IOC can play a significant role in supporting the member states in this special phase of their national development. While continuing to make available the most effective of its current programs and actions in CD (yes, need to prioritize!) to member states, the IOC can initiate new actions in CD that take into account the full range of interventions that are available to it.

The identified needs within the survey call for interventions in:

- (1) Science and Technology,
- (2) Policy Development and Implementation,
- (3) Education and Training
- (4) Outreach activities.

These fields could form the four components of a revised CD Strategy to be put in place as a consequence of the Post Rio +20 actions of the IOC. For the development of the revised strategy IOC needs to engage with the relevant departments of the national governments and with other compatible international, regional and national organizations and agencies involved in CD.

Science and Technology: focus on those IOC Programs and Actions that have been identified to be most urgent in the baseline study and on the transfer of technology that is crucial for their implementation as well as on the necessary human capacity required to make the best use of the transferred technology.

In Science and Technology, IOC needs to continue its efforts to inform and instruct the Member States on the “IOC Criteria and Guidelines on the Transfer of Marine Technology”. IOC could prepare information on what has been achieved in the “transfer of technology” for each of its current programs and /or programs that were implemented since 2005 taking strictly into account the IOC Criteria and Guideline. This will provide an opportunity to highlight areas where IOC has been successful and where further work and interventions are needed. Such an exercise in conjunction with the results of this baseline study will allow revisiting these Criteria and Guidelines and evaluating their appropriateness for the current phase of international development.

Policy Development and Implementation: In policy, IOC could support Member States to develop management procedures and national policies in marine sciences (IOC XXVI - §61). The actions could include: Advice for national and regional marine policy making, assistance and training in the development and implementation of marine strategic plans, CD for marine ecosystem management, evaluation of management actions, Training in best practices – “proven technology” - related to the implementation of international agreements that have a potential to enhance national capacity to monitor and evaluate, here especially for the for the protection and conservation of marine ecosystems. Many countries are now in the process of preparing their national marine development plans. This gives unique opportunities to align IOC’s international and regional strategies and programs with national ones.

Education and Training: Current capacity in ocean related fields lies at Universities and Research Centres which need to be brought into the IOC circle. For this IOC could work with national focal points to enhance the involvement of these Institutions of higher education in IOC's CD actions. These Institutions currently do not have the necessary human and infrastructural capacity to take on the challenges posed by the oceans and coasts. They need to be strengthened if sustained capacity is to be developed.

That regional and national activities modelled on training programs of HABS and IODE are being implemented based entirely on expertise available in the region is a measure of IOC's success with its training programs. They have the potential to make a contribution to strengthening higher education in ocean sciences. IOC could support these programs by designing procedures for their evaluation for effectiveness and compatibility with other internationally offered programs. This is particularly relevant if CD actions are to enable member states to effectively participate at international events and in regular processes.

Outreach: IOC could provide support and initiate actions to ease the flow of information among the Secretariat, Regional Commissions and decentralized offices as well as the national representatives and focal points.

8. THE PROPOSED WORKSHOP:

The Workshop could be so structured as to

- (i) inform and instruct the participants on IOC and its ongoing CD actions,
- (ii) communicate the Post Rio+20 situation based on this baseline study as well as to present and discuss the outline of the above-mentioned revised strategy.

The Workshop could thus be an event with three Sessions:

- Session I: Achievements in CD (focus on technology transfer)
- Session II: IOC Post Rio +20 Voluntary Commitments and Status
- Session III: Revised CD Strategy

**BASELINE STUDY FOR AN ASSESSMENT OF NATIONAL CAPACITIES AND
NEEDS IN MARINE RESEARCH, OBSERVATION AND DATA/INFORMATION
MANAGEMENT**

ANNEXES

Table Aa List of Countries

	COUNTRY	Income	OHRLS	Group	UNESCO Plan	IOC	Year	Name
AFRICA								
	1 Angola	LMI	LLDC	V			1982	Bomba Bazika Sangolay
	2 Benin	LI	LLDC	V			1986	Sohou Zacharie
	3 Congo DR(1)	LI	LLDC	V	up to date	Request	2010	Mwamba Nyembo
	4 Gabon(1)	UMI		V	interested	Request	1977	Mouyalou V. M. Thierry
	5 The Gambia(1)	LI	LLDC	V			1985	Famara Dremmeh
	6 Madagaskar(1)	LI	LLDC	V	up to date		1967	John Bemiasa
	7 Namibia	UMI		V	interested		2001	Anka Kreiner
	8 Nigeria	LMI		V*			1973	Larry Awosika
	9 Tanzania	LI		V*	up to date		1969	Alfonse Dubi
S&C America								
	10 Belize(1)	LMI	SIDS	III			1995	Maxine Monsanto
	11 Ecuador(1)	UMI		III*			1961	Gustavo Iturralde
	12 Honduras(1)	LI		III			2012	Oscar Rene Torres Palacios
	13 Uruguay(1)	UMI		III	need update		1961	Gabriel Aintablian
	14 Jamaica	UMI	SIDS	III			1969	Sean Green
	15 StKitts&Nevis(1)	UMI	SIDS	III			2011	Samuel Heyliger
	16 Surinam	UMI	SIDS	III			1977	Siew Naipal
South ASIA								
	17 India	LMI		IV*	need update		1961	Ravichandran
	18 Maledives	UMI	SIDS	IV			1987	M Shihan Adam
	19 Myanmar(1)	LI	LLDC	IV				NO RESPONSE
	20 Sri Lanka	LMI		IV			1977	Ivan Silva
Pacific								
	21 Indonesia	LMI		IV*	need update		1964	Indra Jaya & Idsi Solitsio
	22 East Timor(1)	LMI	LLDC	IV			2005	
	Pacific SIDS							
	23 Fiji	LMI	SIDS	IV			1974	Rejendra Prasad (RP)
	24 Kiribati(1)	LMI	SIDS*	IV	up to date	PTWS	2012	Annette Breckwoldt/RP
	25 Niue(1)		SIDS	IV		PTWS	2011	RP
	26 Tuvalu(1)	LMI	SIDS*	IV		PTWS	2011	Uschi Kaly & RP
EUROPE								
	27 Albania(1)	UMI		II			1993	
	28 Montenegro(1)	UMI		II			2011	Zoran Kljajic
	29 Croatia			II*			1992	Goran Kniewald
	30 Slovenia			II			1994	Branko Cermelj
Gulf & Mediterranean								
	31 Algeria	UMI		V			1965	Makhlouf Ounissi
	32 Iran(1)	UMI		IV*	up to date	Request	1975	Hassan Zare Maivan & Ehsan Kamrani
	33 Jordan	UMI		V	up to date		1975	Tariq Hasan Al-Najjar
	34 Kuwait(1)			V*		Request	1974	Faiza Al-Yamani
	35 Lebanon	UMI		V			1964	H Kouyoumjian
	36 Libya(1)			V			1974	NO RESPONSE
	37 Saudi Arabia(1)			V			1978	NO RESPONSE
	38 Turkey	UMI		I*			1962	Kemal Can Bizsel
	38 Yemen(1)	LMI	LLDC	V			1960	NO RESPONSE
			*LLDC	*EC				

Introduction

This Baseline Study is part of a voluntary commitment by the IOC to the Post Rio+20 and is for an assessment of national capacities and needs in Marine Research, Observation and Data/Information Management.

The overall strategy is to generate information that could provide guidance for the IOC Programs and Units as well as IOC Regional Sub-commissions and Sub-Committee to initiate and implement CD actions enabling countries in Africa and SIDS as well as the other new IOC member states to actively and effectively participate in and benefit from IOC Programs and actions both individually and in cooperation with regional and international partners.

The study is being conducted on a sample of IOC member states via IOC action addressees in cooperation with the IOC Programs and Units as well as the IOC Sub-commissions and decentralised offices.

The gathered information will be used in preparing a report providing an assessment of the gaps and needs in the sampled Member States and a set of recommendations for potential additional new IOC CD Actions and their implementation.

Thank you in advance for participating in the study. If you have additional comments or remarks please email them to: ittekkot@uni-bremen.de with ref: IOC_CD_Additional Comments

1. Country on which you are providing information

2. In your opinion, what are the IOC Programs and Actions that you consider of interest to your country?

- ☐ Ocean Sciences
- ☐ Hazards Prevention & Forecast
- ☐ Data Information and Exchange
- ☐ Marine Management
- ☐ Assessment and Planing
- ☐ Mapping and Monitoring
- ☐ Implementation of Conventions

Comments

3. How will you rank them in their urgency for CD actions? 1-high to 5-low

	1	2	3	4	5
Ocean Sciences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hazards Prevention & Forecast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data Informaion and Exchange	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marine Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assessment and Planing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mapping and Monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implementation of Conventions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

4. How are the current national CD needs related to these issues being met or handled?

	Ocean Sciences	Hazards Prevention & Forecast	Data Informaion and Exchange	Marine Management	Assessment and Planing	Mapping and Monitoring	Implement. of Conventions
National efforts, capacity exists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IOC support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regional Support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
International Support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

5. Have there been any country-specific constraints in developing long-term capacity in your country? Please elaborate.☐ No☐ Yes

Please comment or elaborate

Availability of Ocean Experts

This section seeks information on ocean experts and expertise that are available to the country.

6. How many ocean experts are currently active in the country?

	None	<5	<10	<20	>20
Ocean Sciences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hazards Prevention & Forecast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data Informaion and Exchange	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marine Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assessment and Planing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mapping and Monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implementation of Conventions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

7. Are experts from your country active elsewhere (in other countries, organizations)?

	Yes	No
Ocean Sciences	<input type="radio"/>	<input type="radio"/>
Hazards Prevention & Forecast	<input type="radio"/>	<input type="radio"/>
Data Informaion and Exchange	<input type="radio"/>	<input type="radio"/>
Marine Management	<input type="radio"/>	<input type="radio"/>
Assessment and Planing	<input type="radio"/>	<input type="radio"/>
Mapping and Monitoring	<input type="radio"/>	<input type="radio"/>
Implement. of Conventions	<input type="radio"/>	<input type="radio"/>

Other (please specify)

8. Do these outside national experts contribute to national marine programs and policy making?

	Always	Frequently	Seldom	No
Ocean Sciences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hazards Prevention & Forecast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data Informaion and Exchange	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marine Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assessment and Planing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mapping and Monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implementation of Conventions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. What are the mechanisms that are in place to facilitate the participation of outside national experts in your country's national programs and policy making?

- ☐ Guest positions
- ☐ Exchange Programs
- ☐ Board Memberships
- ☐ Advisory capacity
- ☐ Others
- ☐ There are none

Other (please specify)

Status of Ocean Research, Education, Technology and Management

10. Are there national institutions of higher learning providing education (at graduate and post-graduate levels) in ocean-related issues?

- ☐ Yes
☐ Yes, but partially
☐ No

Comments

11. What is the nature of these institutions that provide education in ocean related issues in the country?

	Public	Private	NGOs	Other
Universities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research Institutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technical Schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

12. What is the level of degrees in ocean-related disciplines granted by these institutions

	Bachelors	Masters	Ph D	Technical Diplomas
Universities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research Institutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technical Schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

13. How many graduates do they produce annually on the average?

	Graduates	Postgraduates	Technical Diplomas	Others
Universities	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Research Institutions	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Technical Schools	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Other (please specify)

14. Where do these graduates and diploma holders go after their studies? Please rank them according to their importance in absorbing them.

<input type="text"/>	Government Departments
<input type="text"/>	Academic Institutions
<input type="text"/>	Other Public Sector
<input type="text"/>	Private Sector
<input type="text"/>	Other

15. Are there special national efforts and mechanisms to absorb and keep these graduates in ocean related jobs and activities?

☐ Yes

☐ No

Remarks

--

Training Programs, Courses

16. Have there been any ocean-related training programs - other than national - that were conducted in your country?

☐ Yes

☐ No

Comments

17. What is the focus of these programs, what is their frequency and who are the participants and sponsors?

	Focus	Frequency	Participants-Origin	Participants	Sponsors
Ocean Sciences	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Hazards Prevention & Forecast	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Data Information and Exchange	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Marine Management	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Assessment and Planning	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mapping and Monitoring	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Implementation of Conventions	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Comments

18. How are the location and the topic of programs chosen?

☐ By the sponsors

☐ By the host country through request

☐ Jointly by hosts and sponsors

☐ Other

Comments

IOC Programs and Actions

Here, information on programs and courses specifically related to IOC is sought

19. How well known is the IOC Programs and Actions at the national level in your country?

	Well known	Known, need further work	Not known
Ocean Sciences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hazards Prevention & Forecast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data Information and Exchange	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marine Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assessment and Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mapping and Monitoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implementation of Conventions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please specify)

20. What is the current status of your country's participation in IOC Programs and Actions?

	Active Participation	Need support for effective participation	Passive participation	No participation
Ocean Sciences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hazards Prevention & Forecast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data Information and Exchange	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marine Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assessment and Planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mapping and Monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implement of Conventions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments

21. In your opinion, involvement in which, and at what level, of the IOC Programs has been most beneficial to your country

	Very Beneficial	Beneficial	Less beneficial
Ocean Sciences	<input type="text"/>	<input type="text"/>	<input type="text"/>
Hazards Prevention & Forecast	<input type="text"/>	<input type="text"/>	<input type="text"/>
Data Informaion and Exchange	<input type="text"/>	<input type="text"/>	<input type="text"/>
Marine Management	<input type="text"/>	<input type="text"/>	<input type="text"/>
Assessment and Planing	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mapping and Monitoring	<input type="text"/>	<input type="text"/>	<input type="text"/>
Implement. of Conventions	<input type="text"/>	<input type="text"/>	<input type="text"/>

Comments and Suggestions

Current Status of Infrastructure for Potential CD Actions

This is to make an assessment of potential costs for infrastructure and human resources to be acquired externally for possible future CD actions

22. What is the current status of faculty, teaching tools and other IT proficiency (human resources)

- ☐ Adequate
- ☐ Inadequate
- ☐ Weak
- ☐ Other

Comments and Suggestions

23. What is the status of the available laboratory and field infrastructure for ocean research, education and management (technology resources)

	Adequate	Not adequate	Weak	other
Ocean Sciences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hazards Prevention & Forecast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data Informaion and Exchange	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marine Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assessment and Planing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mapping and Monitoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implement. of Conventions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
research,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments and Suggestions

Marine Policy, National & International

This section seeks information on the mechanisms of national policy making in marine sectors that are in the IOC mandate, and on the current status of participation in international marine programs and policy making.

24. Where is primary responsibility for national marine policy making? With the ministry of:

- ☐ Science and Technology
- ☐ Environment
- ☐ Fisheries
- ☐ Agriculture
- ☐ Foreign Ministry
- ☐ Ministry of Marine Affairs
- ☐ Interministerial Body

If possible, please elaborate

25. What are the sources of information for making decisions on national marine policy?

- ☐ National efforts and sources
- ☐ Regional sources
- ☐ International sources
- ☐ Other

If possible, please elaborate

26. If possible, please describe briefly the process of national marine policy making?

27. Is there a national marine development plan?

- ☐ Yes
- ☐ In preparation
- ☐ No

Other (please specify)

28. What role does capacity development in marine and ocean issues play in the overall national development strategy and plans and national science and technology strategy and plans?

- ☐ Important, new investments
- ☐ Mentioned, no actions
- ☐ No mention

Other (please specify)

29. In which ocean-related conventions and treaties does the country participate?

	Membership	Participation	Expertise from
UN Conventions & Treaties	<input type="text"/>	<input type="text"/>	<input type="text"/>
Regional govt. & non-govt. Bodies	<input type="text"/>	<input type="text"/>	<input type="text"/>
International govt. & non-govt. Bodies	<input type="text"/>	<input type="text"/>	<input type="text"/>
Regional Programs	<input type="text"/>	<input type="text"/>	<input type="text"/>
International Programs	<input type="text"/>	<input type="text"/>	<input type="text"/>

Comments and Suggestions

30. Please describe briefly the type of IOC CD Actions that will, in your opinion, enhance the participation of the country in regional and international marine policy making

Contact Information

31. We would like to contact you on one or more aspects of the answers you provide. If you agree, please provide us with your contact details

Name:	<input type="text"/>
Position:	<input type="text"/>
Affiliation:	<input type="text"/>
Address:	<input type="text"/>
City/Town:	<input type="text"/>
State/Province:	<input type="text"/>
ZIP/Postal Code:	<input type="text"/>
Country:	<input type="text"/>
Email Address:	<input type="text"/>
Phone Number:	<input type="text"/>

Table Ba: PERCEPTION OF OCEAN ISSUES, CURRENT STATUS & POTENTIAL

Q1: IOC Topics of National Interest

	COUNTRY	OS	HP&F	D&IE	MMgmt	A&P	M&M	Conv
AFRICA								
1	Angola	x	x	x	x	x	x	x
2	Benin	x	x	x	x	x	x	x
3	Congo DR	x	x	x	x	x	x	x
4	Gabon	x	x	x	x	x	x	x
5	The Gambia	x	x	x	x	x	x	x
6	Madagascar	x	x	x	nr	nr	x	nr
7	Namibia	x	nr	x	x	x	nr	x
		x		x				
8	Nigeria	x	x	x	nr	nr	x	x
9	Tanzania	x	x	x	x	x	x	nr
S&C America								
10	Belize	nr	nr	x	x	x	x	nr
11	Ecuador	x	nr	x	x	x	x	nr
12	Honduras	x	nr	x	x	x	x	nr
13	Uruguay	x	x	x	x	x	x	x
14	Jamaica	x	x	x	x	x	x	x
15	StKitts&Nevis	x	x	x	x	x	x	x
16	Surinam	x	x	x	x	x	x	x
South ASIA								
17	India	x	nr	x	nrr	nr	nrr	nr
18	Maledives	x	x	x			x	nr
19	Sri Lanka	x	x	x	x	x	x	x
Pacific								
20	Indonesia	x	nr	nr	x	nr	x	nr
	Indonesia	x	nr	nr	x	nr	nr	nr
21	Tuvalu	nr	x	x	x	x	nr	x
22	Fiji	x	x	x	x	x	x	nr
EUROPE								
24	Croatia	x	x	x	x	x	x	x
23	Montenegro	nr	nr	x	x	nr	x	x
25	Slovenia	x	x	x	x	x	x	x
Gulf & Mediterranean								
26	Algeria	x	nr	x	x	x	x	nr
27	Iran	x	x	x	x	x	x	x
	Iran-2	x	x	x	x	x	x	x
28	Jordan	x	nr	nr	x	nr	nr	nr
29	Kuwait	x	x	x	x	x	x	x
30	Lebanon	nr	nr	nr	x	x	x	nr
31	Turkey	x	x	x	x	x	x	x

Table Bb: PERCEPTION OF OCEAN ISSUES, CURRENT STATUS & POTENTIAL
Q2 Urgency for CD Actions. 1-high; 5-low

	COUNTRY	OS	HP&F	DI&E	MM	A&P	M&M	ConV
AFRICA								
1	Angola	5	2	2	3	4	3	4
2	Benin	1	2	2	1	1	1	2
3	DR Congo	1	3	3	1	2	2	2
	Congo-2	nr	nr	nr	nr	nr	nr	nr
4	Gabon	1	1	1	1	2	2	2
5	The Gambia	2	1	1	2	1	1	2
6	Madagaskar	1	1	2	2	3	1	3
7	Namibia	3	4	1	2	2	4	1
	Namibia	1		2				
8	Nigeria	1	1	2	3	2	nr	2
9	Tanzania	1	2	2	2	1	1	4
S&C America								
10	Belize	2	2	1	1	1	1	2
11	Ecuador	2		3	2	2	1	3
12	Honduras	1		1	2	2	2	
13	Jamaica	2	2	1	1	1	1	5
14	StKitts&Nevis	2	2	1	1	1	2	1
15	Surinam	1	2	3	2	1	1	3
16	Uruguay	4	5	3	4	3	3	2
South Asia								
17	India	2	2	1	3	3	2	2
18	Maledives	2	1	1			1	
19	Sri Lanka	1	2	3	1	1	3	3
Pacific								
20	Indonesia	1	5	3	1	3	1	5
	Indonesia	5(?)			5(?)			
21	Tuvalu	nr	1	3	2	2	1	nr
22	Fiji	2	2	1		1	1	nr
Europe								
23	Montenegro	1	1	4	5	1	3	4
24	Croatia	3	2	1	1	1	2	
25	Slovenia	2	1	1	2		1	2
Gulf & Med								
26	Algeria	3	4	1	nr	1	2	5
27	Iran	3	3	3	2	4	2	nr
	Iran-2	2	3	1	1	1	3	2
28	IRAN-3							
29	Jordan	1	1	2	3	3	1	1
30	Kuwait	2	2	1	2	3	3	1
31	Lebanon	2	2	3	1	1	1	2
32	Turkey	II (high?)						

OS-Ocean Sciences

HP&F-Hazards Prevention and Forecast

DI&E-Data Information & Exchange

MM-Marine Management

A&P-Assessment and Planing

M&M-Mapping and Monitoring

Conv - Implementation of Conventions and Treaties

Table Bc: PERCEPTION OF OCEAN ISSUES, CURRENT STATUS & POTENTIAL

Q2	Current CD Handling [1-national efforts; 2-IOC support; 3-Regional Support; 4-International Support; 5-Other,not tackled]							
	COUNTRY	OS	HP&F	DI&E	MM	A&P	M&M	Conv
Africa								
1	Angola	234	1234	124	124	124	24	124
2	Benin	1234	1	12	12	3	14	45
3	DR Congo			12	23		12	1
	DR Congo-2	nr						
4	Gabon	12	125	12	1		1	1234
5	The Gambia	14	134	12	13		4	134
6	Madagascar	1	234	234	13	1	134	
7	Namibia	134		23	3	34	123	
	Namibia	15		2				
8	Nigeria	12345	12345	12345	12345	12345	12345	12345
9	Tanzania	1234	1	2	13	1	23	4
S&C Amer								
10	Belize		234		14	1		134
11	Ecuador	12			234	24	24	12
12	Honduras	nr						
13	Jamaica	1	13	12	12	1	1	1
14	Surinam	5	1	15	5	5	35	
15	StKitts&Nevis	234	234	234	234	23	234	24
16	Uruguay	nr						
South Asia								
17	India	13		123	2	1	1	
18	Maledives			3	1	1		4
19	Sri Lanka	234	23	1	23	23	3	3
Pacific								
20	Indonesia	1	4	2	3	1	4	1
	Indonesia	4			4			
21	Tuvalu	3	134	3	3		3	3
22	Fiji	3	4	3	4	3	1	3
Europe								
23	Montenegro	1		13	14		13	134
24	Croatia	1234	1234	1234	1234	1234	1234	1234
25	Solvenia	1	3	4	4	4	1	1
Gulf & Med								
26	Algeria	14		234	23		1	134
27	Iran	12	12	12	13	1	1	13
28	Iran-2	24	234	1234	1234	1234	234	234
	Iran-3							
29	Jordan	12	25		5	2	24	4
30	Kuwait	no response						
31	Lebanon	1234		14	4	4		
32	Turkey	123	134	4	2	4	3	4
		1	14	124	1	1	1	1

INOC

OS-Ocena Sciences

HP&F-Hazards Prevention and Forecast

DI&E-Data Information & Exchange
MM-Marine Management
A&P-Assessment and Planing
M&M-Mapping and Monitoring
Conv-Implementation of Conventions

Part II: Availability of Ocean Experts

Table C:

Availability of Ocean Experts

Q 1-4

Number of Ocean Experts in the country or outside & their participation in national programs and available mechanisms

	COUNTRY	OS	HP&F	DI&E	MM	A&P	M&M	Conv	Nat Experts Abroad	Participation in Nat Programs	Facilitating Mechanisms
AFRICA	1 Angola	<5	none	<5	<10	none	<5	<5	OS, DI&E, MM	seldom	Exchange programs/advisors
	2 Benin	<20	>20	>20	>20	>20	>20	>20	All	OS,HP&F & DI&E seldom Others-frequently	
	3 DR Congo	none	<10	<5	<10	<5	<5	<10	None		
	DR Congo-2	<10	nr	nr	nr	nr	nr	nr	OS	frequently	Advisors
	4 Gabon	<20	<20	<20	<20	<20	>20	>20	None		Exchange programs
	5 The Gambia	none	none								Consultancy, Conferences
	6 Madagascar	>20	none	<10	<5	<20	<5	<10	OS, M&M,	seldom	Guest positions/ advisors
	7 Namibia	<20	<5	<5	<10	<10	<5	<5	OS,MM and A&P	seldom	Non-specific
	Namibia	<5	none	<5	<5	none	none	<5	M&M	Conv-always,A&P,M&M seldom	Guest positions/ Exchanges
S&C America	8 Nigeria	>20	<20	<10	<10	<10	<20	<10	OS,HP&F,M&M,Conv	always	None
	9 Tanzania	>20	>20	<10	>20	>20	>20	none	OS,DI&E,MM	always	Exchange Programs
	10 Belize	none	<5	none	<5	none	none	none	DI&E, M&M, MM & M&M	seldom	None
	11 Ecuador	>20	<10	<10	<10	<5	<5	<10	OS,DI&E,MM,Conv	OS-always, HP&E-seldom Others-frequently	Advisors
	12 Honduras	none		none	<5	<5	<5	none	None		Advisors
	13 Jamaica	<10	<5	<10	<5	<10	<5	<20	None		Advisors
	14 StKitts&Nevis	<5	<5	<10	<10	<10	<10	<10	None		None
	15 Surinam	none	none	<5	none	none	none	none	None	seldom	
	Surinam	<5	<5	none	<5	<5	<5		(Minu)		
South Asia	16 Uruguay	>20	<10	<10	<20	<10	<10	<10	All except M&M	OS-frequently Others seldom	Exchange programs
	17 India	>20	<20	<20	<5	<5	<10	<5	OS, DI&E	seldom in all	
	18 Maldives	none	<5	<5	<5	<5	<5	none	DI&E, A&P, M&M, Conv	OS,M&M seldom	Advisors
	19 Sri Lanka	<5	<5	<5	<5	<5	<5	<	OS,MM,Conv	seldom	Guest & exchange Programs
Pacific	20 Indonesia	<20	<10	<5	<20	<20	>20	<5	OS,DI&E,A&P, M&M	OS-frequent, DI&E,M&M-seldom	Advisors
	Indonesia	>20			>20				OS & MM	always	Guest & exchange Programs
	21 Tuvalu	none	<5	none	<5	non	<5	<5	OS,MM and Conv	OR,HP&F,M&M and Con-seldom	Advisors
	22 Fiji	<10	<5	<5	none	<5	<5	<10	OS,MM,Conv	OS,MM-frequently, Conv-always	
	24 Montenegro (ZK)	<5	none	<5	<5	none	<5	<5	All except HP&F, A&P	Conv-frequently, Others-seldom except A&P	Guest & exchange programs
	25 Croatia (GK)	<10	<10	>20	<20	<20	<20	<20	All except HP&F	frequent	Guest Programs, Advisors
	26 Slovenia	>20	<5	<10	<10	<5	<10	<10	All	OS,HP&F,DI&E-frequently,	EU CD Projects Guest,Exchange, & Advisor Programs
										MM,A&P-seldom,Conv-always seldom also in HP&F and A&P	
Gulf & Med	27 Algeria	<5	none	<5	none	none	<5	<5	OS & DI&E		Guest Positions, Exchange program
	28 Iran	<20	<10	>20	<20	<10	<10	>20	A&P, M&M	seldom	Exchange programs, advisors
	Iran	>20	<20	>20	>20	>20	<20	<20	A&P, M&M	seldom	Guest,Exchange, Advisor Programs
	29 Jordan	<5	<20	>20	<10	>20	<20	>20	All	HP&F, Conv-frequent	Guest,Exchange, Advisor Programs
	30 Kuwait	<5	0	<5	<5	<5	<5	<5	None	seldom	Exchange, Advisor Programs
	31 Lebanon	<5	nr	<5	<5	nr	<5	<5	OS,HP&E,DI&E,MM	seldom	Exchange programs
	32 Turkey	>20	>20	<20	<20	>20	<20	<10	All except HP&F, A&P	Conv-frequently, Others seldom except A&P	Exchange Programs, Guest positions

OS-Ocean Science

HP&F-Hazards Prevention and Forecast

DI&E-Data Information and Exchange

MM-Marine Management

A&P-Assessment and Planing

M&M-Mapping and Monitoring

Conv - Implementation of Conventions

Table D Status of Marine Education
Part III: Status of Ocean Research, Education, Technology and Management
Q10-15 Institutions, level of education, fate of graduates, national mechanisms for retaining capacity

	COUNTRY	MarSciEdn availability	Type of Insitution: Univ/Res/Tech/Other	Level: BachelorsMasters PhDTechnical Diplomas/	Quantity p.a Graduats,Postgraduates	Employment Oppertunities	National Recruitment Mechanisms for Ocean- related employment
Africa							
1	Angola	yes, partially	Pub/-/-/-	BM/-/-/-	<5<5/-/-/-	OPubS/PrS/Other/GD/AI	Yes
2	Benin	yes,partially	PubPr/Pub/Pub/Pub	BMPTechDip/-/B/-	<10<5/-/-/-	AI/GD/OPubS/PrS/Oth	No
3	DR Congo	No	comments				
	DR Congo	yes partially,c	Pub/-/-/-	BM/-/-/-	>15<10/-/-/-	AI/OPubS/GD/PrS/Other	No
4	Gabon	yes, partially	Pub/Pub&NGOS/-/-	BM/-/-/-	>15>10	PrS/GD/AI/OPubS/Other	No
5	The Gambia	No					No
6	Madagaskar*)	yes-comments	Pub/Pub/-/-	MP/BMP/-/-	>15>10/<10<5/-/-	GD/PrS/AI/OPubS/Other	Yes
7	Namibia	yes	Pub/-/-/-	B/-/-/-	>15/-/-/-	GD/PrS/OPubS/AI/Other	No
	Namibia	yes,partially	Pub/Pub/Pub/-	BM/TechDip/TechDip/-	<10<5<5	GD/AI/OPubS/PrS/Other	Yes
8	Nigeria	yes, partially	Pub/Pub/-/Pub	BMP/-/-/-	<15<10<5/-/-/-	AI/OPubS/PrS/Gd/Other	No
9	Tanzania	yes	Pub/Pub/-/-	BMP/-/-/-	<10<5/-/-/-	GD/AI/OPubS/PrS/Other	yes
S&C America							
10	Belize	No	nr	nr	nr	nr	No
11	Ecuador	yes	PubPr/PubPrNGO/-/-	BM/-/-/-	<15>10/-/-	GD/OPubS/PrS/Other/GD	No
12	Honduras	yes, partially	Pub/-/-/-	B/-/-/-	<5/-/-/-	GD/AI/OPubS/PrS/Other	No
13	Jamaica	yes	Pub/-/-/-	BMP/-/-/-	<10/-/-/-	Other/AI/OPubS/GD/PrS	No
14	StKitts&Nevis	No	nr	nr	nr	nr	nr
15	Surinam	yes,begin	pub/-/NGO/-	BM/-/-/-	<5<-/-/-	AI/PrS/GD/OPubS/Other	
16	Uruguay	yes, partially	Pub/-/Pub/-	BM/-/TechDip/-	>16>10/-/<10/-	Other/AI/GD/OPubS/PrS	yes
South Asia							
17	India	yes	Pub/Pub/-/-	MP/P/-/-	>10/-/-/-	GD/AI/OPubS/Priv/O	yes
18	Maledives	no	Pub/Pub/-/-	none	none	GD/OPubS/O/PrS/AI	yes
19	Sri Lanka	yes	Pub/-/-/-	BMPTechDip/-/-/-	<5<5/-/-	GD/AI/OPubS/Pr/Other	
Pacific							
20	Indonesia	yes	Pub/Pub/Pub/-	BMP/-/-/-	<10 (?)	AI/GD/OPubS/PrS/Other	No
21	Indonesia	yes	Pub/Pub/-/-	BMP/BMP/-/-	>15>10/-/-/-	GD/PrS/AI/OPubS/Other	No
22	Tuvalu	No					
23	Fiji	yes	pub/pubPrNGO/-/-	BMPTechDip/-/-/-		OPubS/AI/GD/PrS/O	
Europe							
24	Croatia	yes	Pub/PubNGOOther/-/-	BMP/BMP/-/-	<5<5/<5<5	GD/AI/OPubS/PrS/Other	Yes
25	Montenegro	yes, partially	Pub/Pub/-/-	BMP/-/-/-	<5<5/-/-/-	GD/AI/OPubS/PrS/Other	No
26	Slovenia	yes partially	pub/pubpr/-/-	B/P/-/-	<5/<5/-/-	AI/GD/OPubS/PrS(Other	No

Gulf&Med

27	Algeria	yes	Pub/-/-/-	BMP/M/-/-	>15>10/>15<10	AI/GD/OPubS/Other/PrS	No
28	Iran	yes	Pub&Pr/Pub/ub/-	BMP/-/-/-	>15>10>15/-/-->15	GD/AI/OPubS/PrS/Other	No
	Iran-2*)	yes	Pub&Pr/Pub/Pub&Pr/-	BMPTechD/BM/BM/-	.15>10<10/<10<10<10/<5<1	GD/AI/OPubS/PrS/Others	yes
29	Jordan	yes	Pub/Pub&Pr/NGO/-	BM/-/-/-	<5/<5/<5	AI/OPubS/PrS/Other/GD	Yes
30	Kuwait	No	Pub/Pub/NGO/-	B/-/TechDip/-	<5/<5/<10	GD/AI/OPubS/PrS/Other	No & Comments
32	Lebanon*)	yes,partial	Pub&Pr/pub/-/-	Bachelors	<5	GD/AI/OPubS/PrS/Other	No
32	Turkey*)	yes	Pub/Pub/Pub/-	MP/MP/B/-	>15<10/p>10/-/-	AI/GD/OPubS/PS/Other	No

Pub-Public Sector

Pr-Private Sector

NGO-Non-gov Org

B-Bachelors

M-Masters

P-PhD

TechDip-Technical Diploma

GD-Gov Departments

AI-Academic Institutions

OPubS-Other Public Sector

PrS-Private Sector

Other

Table E
Part V:
Q16-17

Training Programs
Exposure to Training Programs, Courses
Focus/Frequency/Scale/Participants/Sponsors [in that order]

	COUNTRY	Ocean Sciences	Hazards Prevention & Fct	Data Information & Exch	Marine Management	Assessment & Planing	Mapping & Monitoring	Conventions	Who decides?
AFRICA									
1	Angola	CD/-/National/Students		Other/-/National/Students/nr	CD/Annual/National/Students/nr	Other/Annual/National/Students/nr	CD/Annual/National/Students/nr		hosts by request
2	Benin	CD/one-off/National/Students							host by request
3	DR Congo		nr/1off/National/Mixed/Participants/UN Agencies	CD/Annual/National/Mixed/Participants/UN Agencies	CD/Annual/National/Mixed/Participants/UN Agencies		CD/Annual/Regional/Mixed/Participants/UN Agencies	CD/Annual/Regional/Mixed/Participants/UN Agencies	jointly by hosts and sponsors
	DR Congo-2	none	no	no	no	no	no	no	
4	Gabon	nr	nr	nr	nr	nr	nr	nr	US Nay, sponsor-oriented
5	The Gambia	none							
6	Madagaskar			CD/1off/Regional/Students/Un Agencies					by sponsors
7	Namibia	CD/annual/Regional/Govt Officiala/Aid agencies	CD/1off/National/Mixed/Participants/Aid Agencies	Other/1off/National/Govt. Officials/UN Agencies	CD	CD/1off/National/Govt. Officials/Others	CD/Annual/Regional/Mixed/Participants/Others		jointly by hosts and sponsors
	Namibia	CD/annual/Regional Mixed/Others	CD/Annual/Regional Mixed/UN Agencies						
8	Nigeria	CD/-/National/Students/UN Agencies	CD/nr/National/Students/UN Agencies	CD/nr/National/Students/UN Agencies	CD/nr/National/Students/UN Agencies	CD/nr/National/Students/UN Agencies	CD/nr/National/Students/UN Agencies		by sponosrs,by hosts,jointly all one off, by sponsors
9	Tanzania		CD/1off/National/Mixed/Participants/UN Agencies	CD/one-off/National/Mixed/Participants/UN Agencies					jointly by hosts and sponsors
S&C America									
10	Belize		CD/1off/National/Govt. Officials/UN Agencies	CD/1off/National/Mixed/Participants/NGOs	CD/1off/National/Mixed/Participants/Other		CD/1off/Regional/Govt Officials/UN Agencies	CD/1off/Regional/Govt Officials/UN Agencies	by sponsors and hosts by request
11	Ecuador	CD/annual/Global/Mixed participants/UN Agencies			CD/Annual/Regional/Mixed/Participants/Aid Agencies		CD/Annual/Global/Govt Officials/UN Agencies		by sponsors
12	Honduras	CD/1off/Global/Govt. Officials/Aid Agencies	CD/Annual/Regional/Mixed/Participants/Other	CD/1off/Global/Private Sector/Aid agencies	CD/1off/Global/Govt, Officials/Other	CD,1off,global,govt,aid	CD/1off/Global/Govt Officials/Aid Agencies	CD/1off/Global/Govt Officials/UN Agencies	by sponsors
13	Jamaica			CD/10ff/Regional/Govt. Officials/UN Agencies					
14	StKitts&Nevis	None	none	none	none	none	none	none	
15	Surinam		CD/1off/National/NGOS/NGOS	CD/1off/National/Mixed/Participants/Other	CD/1off/National/Mixed/Participants/Other	CD	CD/1off/National/NGOs & Govt. Officials/nr		
16	Uruguay	None	none	none	none	none	none	none	
South Asia									
17	India	CD/							Jointly by hosts and sponsors
18	Maledives	none	no	no	no	no	no	no	
19	Sri Lanka	CD/1off/National/Govt Officiala/Aid Agencies	CD/1off/National/Govt. Officials/Aid Agencies						jointly by hosts and sponsors
Pacific									
20	Indonesia	CD/Annual/National/Mixed participants/Aid Agencies	none	none	none	none	CD/Annual/National/Mixed/Participants/Aid Agencies	none	jointly by hosts and sponsors
	Indonesia	CD/1off/Global/Mixed			CD/1off/Global/Mixed				Jointly by hosts and sponsors

21	Fiji	participants/Others	Participants/Other							
		no ocean spec. training except future env leaders								
22	Tuvalu	CD/Annual/Regional /Govt officials/Aid Agencies	CD/Annual/Regional/ Govt.Officials/nr	nr/nr/Regional/Govt. Officials/UN Agencies	CD/1off/Regional/Govt. Officials/Other		CD/Annual/Regional/ Govt Officials/Aid Agencies	CD	jointly by hosts and sponsors	
Europe										
23	Montenegro	CD/biennial/Regional/Mixed Participants/UN agencies	nr	CD/Bieennial/Regional /Mixed Participants/Others	CD/Biennial/Regional/Mixed Participants/UN Agencies	nr	CD/Bieennial/Regional/Mixed Participants/UN & Others	CD/Bieennial/Regional/Mixed Participants/UN agencies	hosts byrequest	
24	Croatia	nr	nr	nr	nr	nr	nr	nr	aid agencies	
25	Slovenia	CD/Annual/National /Students/-								
Gulf & Med										
26	Algeria	CD/1off/nr/nr/nr			CD/1off/nr/nr/nr					
27	Iran	CD/1off/Regional /Students/Others	CD/1off/Regional /Students/Others	CD/1off/National/Mixed Participants/Others	CD/Annual/Regional/Mixed Participants/Other	CD/1off/Regional/Govt. Officials/Others	CD/1off/Regional/Govt. Officials/Others	CD/Annual/Global/Mixed Participants/Others	jointly by sponsors and hosts	
	Iran-2	CD/Annual/National /Students/UN Agencies		CD/Annual/Regional/Mixed Participants/UN Agencies	nr/Annual/Regional/ nr/UN Agencies	CD/nr/nr/mixed/nr	Other/Biennial/National/nr /UN Agencies		hosts by request & jointly by hosts and sponsors	
28	Jordan	Other/Annual/National /Mixed Participants/nr	CD/Biennial/National /Mixed Participants/nr	CD/Annual/National/Mixed Participants/Others	Other/Annual/National/Mixed Participants/nr	CD/Annual/Regional/ Mixed/Others	Othe/Annual/Regional/Mixed Participants/nr	Other/Annual/National/Mixed Participants/nr	,jointly by hosts and sponsors	
29	Kuwait	CD/biennial/Nationa l/Students/Others					CD/Biennial/National /Students/Others		by sponsors, efforts meagre	
30	Lebanon	Other/1off/Regional/ Mixed/Aid Agencies		nr/1off/Global/Mixed Participants/UN Agencies		nr/1off/Regional/Mixed Participants/UN Agencies	nr/1off/Regional/Mixed Participants/UN Agencies		by sponsory mostly hosts by request	
31	Turkey	CD/1off/Regional /Mixed participants/Others	CD/10ff/Regional/ Mixed/Others	Other/1off/Regional/Mixed Participants/Others	CD/1off/Regional/Mixed Participants/UN Agencies	CD/1off/National/Mixed Participants/Others	Other/1off/National/Mixed Participants/Others	Other/1off/National/Mixed Participants/Others	joinly by hosts and sponsors	
									by sponsors	
									joinly by hosts and sponsors	

Table Fa **Awareness of IOC programs**
Part VI **IOC Programs and Actions**
Q 19 **Awareness**

	COUNTRY	OS	HP&F	DI&E	MM	A&P	M&M	Conv
AFRICA								
	1 Angola	known	nr	known	known	known	known	nr
	2 Benin	well known	known	well known	well known	well known	well known	well known
	3 DR Congo	known	known	well known	well known	known	known	known
	DR Congo-2	known						
	4 Gabon	known	not known	well known	known	not known	not known	known
	5 The Gambia	not known	not known	not known	not known	not known	not known	not known
	6 Madagascar	known	not known	known	known	known/not known	not known/known	not known
	7 Namibia	known	known	known	known	known	known	known
	Namibia	well known	known	well known	known	not known	known	well known
	8 Nigeria	well known	well known	known	known	well known	known	nr
	9 Tanzania	well known	well known	well known	well known	well known	well known	well known
S&C America								
	10 Belize	not known	not known	not known	not known	not known	not known	not known
	11 Ecuador	well known	known	known	known	known	known	well known
	12 Honduras	not known	known	not known	not known	not known	not known	known
	13 Jamaica	known	known	well known	known	known	known	known
	14 StKitts&Nevis	not known	not known	not known	not known	not known	not known	not kown
	15 Surinam	not known	not known	known	not known	not known	not known	not known
	16 Uruguay	known	known	known	known	known	known	known
South Asia								
	17 India	known	not known (?)	known	known	not known	not known	not known
	18 Maledives	known	known	known	known	known	known	not known
	19 Sri Lanka	well known	well known	well known				
	20 Indonesia	known	not known	known	known	known	known	not known
	Indonesia-2	known			known			

Europe	21 Tuvalu	not known	not known	not known	not known	not known	not known	not known
	22 Fiji	known	not known	not known	not known	not known	known	known
	23 Croatia	known	known	known	known	known	known	known
	24 Montenegro	not known	known	known	known	known	known	known
	25 Slovenia	known	not known	known	known	not known	known	known
Gulf&Med								
	26 Algeria	not known	not known	not known	not known	not known	not known	not known
	27 Iran	known	known	known	known	known	known	known
	Iran-2	known	known	known	known	known	known	known
	28 Jordan	well known	known	not known	known	known	not known	not known
	29 Kuwait	known	not known	known	not known	not known	not known	not known
	30 Lebanon	known	known	known	not known	not known	not known	not known
	31 Turkey	known	known	known	known	known	known	known

OS-Ocean Science

HP&F-Hazards Prevention and Forecast

DI&E-Data Information and Exchange

MM-Marine Management

A&P-Assessment and Planing

M&M-Mapping and Monitoring

Conv-Implementation of Conventions

Table Fb
Part VI
Q

Participation in IOC Programs
IOC Programs and Actions
Participation

	COUNTRY	OS	HP&F	DI&E	MM	A&P	M&M	Conv
AFRICA								
1	Angola	need support	need support	need support	need support	need support	need support	need support
2	Benin	need support	need support	need support	need support	need support	need support	need support
3	DR Congo	need support	need support	active	active	need support	active	need support
	DR Congo-2	passive						
4	Gabon	passive	passive	passive	passive	passive	passive	passive
5	The Gambia	no	no	no	no	no	no	no
6	Madagaskar	need support	passive	active	active	passive	needs support	needs support
7	Namibia	no	no	passive	no	no	passive	no
	Namibia	need support	passive	need support	passive	passive	passive	need support
8	Nigeria	active	active	active	active	active	active	active
9	Tanzania	active	active	active	need support	need support	need support	passive
S&C AMERICAS								
10	Belize	no	no	no	no	no	no	no
11	Ecuador	active		need support	need support			
12	Honduras	passive	passive	passive	passive	passive	passive	passive
13	Jamaica	passive	no	active	no	no	no	no
14	ST KittsNevis							
15	Surinam	no	no	no	no	no	no	no
16	Uruguay	NR comment_ national Committee rebuilt in 2009						
SOUTH ASIA								
17	India	active	need support	need support	need support	need support	need support	need support
18	Maledives	passive	passive	no participation	no participation	no	no participation	no participation
19	Sri Lanka	passive	passive					
PACIFIC								
20	Indonesia	need upport	no	passive	need upport	need upport	need upport	no
	Indonesia-2	nr - all						
21	Tuvalu	no participation	no participation	no participation	no participation	no participation	no participation	no participation
22	Fiji							
Europe								
23	Croatia	need upport	need support	need upport	need upport	need upport	need upport	active
24	Montenegro	passive	passive	need upport	need upport	passive	need upport	passive
25	Slovenia	active	no	active	no	no	no	no
Gulf&Med								
26	Algeria	no	no	no	no	no	no	no
27	Iran	active	active	active	active	active	active	active
	Iran-2	no participation	needs support	needs support	needs support	needs support	needs support	needs support
28	Jordan	no	no	active	needs support	needs support	no	active
29	Kuwait	passive	passive	no	no	no	no	passive
30	Lebanon	passive	no	no	no	no	no	no
31	Turkey	needs support	needs support	needs support	needs support	needs support	needs support	needs support

OS-Ocean Science

HP&F-Hazards Prevention and Forecast

DI&E-Data Information & Exchange

MM-Marine Management

A&P-Assessment and Planing

M&M-Mapping anf Monitoring

Conv-Implementation of Conventions

Table Fc Benefits of IOC Programs
Part VI **IOC Programs and Actions**
Q Benefits: at what level is a Program or Action most beneficial

	COUNTRY	OS	HP&F	DI&E	MM	A&P	M&M	Conv
AFRICA								
1	Angola	lb-global	lb-global	vb-other?	b-global	lb-global	lb-global	lb-global
2	Benin	vb-global	vb-regional	vb-regional	vb-global	vb-bilateral	vb-bilateral	vb-global
3	DR Congo	lb-global	b-global	vb-global	vb-regional	lb-regional	vb-regional	b-regional
	DR Congo	lb-regional?						
4	Gabon	lb-global	lb-regional	vb-global	lb-global	lb-global	lb-global	lb-global
5	The Gambia	b-global		b-regional	b-regional			b-bglobal
6	Madagaskar	b-regional	b-regional	b-regional	b-regional	b-regional	b-regional	b-regional
7	Namibia			b-regional				
	Namibia	vb-regional	b-regional	vb-regional	b-regional		lb-regional	vb-regional
			lb-global					
8	Nigeria	vb-regional	vb-regional	vb-regional	vb-regional	bilateral	bilateral	bilateral
9	Tanzania	vb-regional	vb-global	vb-global	vb-global	vb-global	nr	nr
S&C AMERICA								
10	Belize		b-global				b-regional	b-regional
11	Ecuador	vb-regional			b-regional	b-regional	b-regional	vb-global
12	Honduras	lb-regional	lb-regional	lb-global	lb-global	lb-global	lb-regional	lb-regional
13	Jamaica	vb-regional,b-	vb-regional	vb-regional	vb-regional	vb-bil,b-reg	vb-bil,b-reg	vb-global
14	Uruguay			vb-regional				
15	StKitts&Nevis							
16	Surinam	vb-reg,b-bil,b-	vb-reg	vb-reg	vb-reg	vb-bil,b-reg	vb-bil,b-reg	vb-global
South Asia								
17	India	vb-global	b-reg	b-reg	b-bil	b-bil	b-bil	b-global
18	Maldives	lb-reg	lb-reg	lb-reg	lb-bil	lb-bil	lb-other	lb-other
19	Sri Lanka	vb-r	vb-r	vb-r	vb	r	vb-r	vb-r
Pacific								
20	Indonesia	vb-global	lb-global	b-global	b-global	b-global	b-global	lb-global
	Indonesia	vb-global			vb-global			
21	Tuvalu	nr	nr	nr	nr	nr	nr	nr
22	Fiji	vb-reg	vb-reg		b-reg			b-reg
Europe								
23	Croatia	b-global	b-regional	b-regional	b-regional	b-regional	b-global	b-regional
24	Montenegro	b-regional	b-global	b-regional	b-regional	b-global	b-regional	b-regional
25	Slovenia	b-regional	b-regional	b-regional	lb-regional	lb-regional	lb-regional	lb-regional
Gulf&Med								
26	Algeria							
27	Iran	vb-regional	vb-regional	vb-regional	vb-regional	vb-regional	vb-regional	vb-regional
	Iran-2							
28	Jordan	v						
29	Kuwait	nr						
30	Lebanon	vb-global		vb-regional				
31	Turkey	vb-regional	vb-regional	vb-regional	vb-regional	vb-regional	vb-regional	vb-global

OS-Ocean Science

HP&F-Hazards Prevention and Forecast

DI&E-Data Information and Exchange

MM-Marine Management

A&P-Assessment and Planing

M&M-Mapping and Monitoring

Conv-Implementation of Conventions

Table G **Status of Infrastructure**
Part VII **Current Status of Infrastructure for CD Activities**
Q **Education, Research, Observations & Data Management**

	COUNTRY	Faculty	Research	OS	HP&F	DI&E	MM	A&P	M&M	Conv
AFRICA										
1	Angola	adequate	inadequate	adequate	other	weak	adequate	adequate	adequate	inadequate
2	Benin	inadequate		inadequate	weak	inadequate	inadequate	inadequate	inadequate	inadequate
3	DR Congo	weak	weak	other/worse?	weak	inadequate	inadequate	weak	weak	weak
	DR Congo	weak		weak						
4	Gabon	nk to data coll	inadequate	inadequate	inadequate	adequate	inadequate	inadequate	inadequate	inadequate
5	The Gambia	inadequate	inadequate	weak	weak	inadequate	weak	weak	inadequate	inadequate
6	Madagaskar	weak	weak	weak	inadequate	weak	weak	weak	weak	weak
7	Namibia	inadequate	inadequate	inadequate	weak	weak	weak	weak	weak	weak
	Namibia	weak	inadequate	inadequate	weak	weak	weak	weak	weak	weak
8	Nigeria	weak	weak	weak	weak	weak	weak	weak	weak	weak
9	Tanzania	inadequate	inadequate	inadequate	inadequate	inadequate	weak	weak	weak	weak
S&C AMERICA										
10	Belize	weak	inadequate	other	weak	weak	inadequate	weak	weak	weak
11	Ecuador	inadequate	inadequate	adequate		inadequate	inadequate	inadequate	weak	adequate
12	Honduras	inadequate	weak	weak	inadequate	weak	weak	weak	weak	weak
13	Jamaica	adequate	inadequate	inadequate		adequate	weak	weak	weak	adequate
14	StKitts&Nevis	adequate	inadequate	inadequate	inadequate	inadequate	inadequate	inadequate	inadequate	inadequate
15	Surinam	weak	weak	weak	weak	weak	weak	weak	weak	weak
16	Uruguay	adequate	weak	weak	weak	weak	weak	weak	weak	weak
SOUTH ASIA										
17	India		inadequate	inadequate	weak	inadequate	weak	inadequate	inadequate	inadequate
18	Maldives		weak	other(worse?)	weak	inadequate	inadequate	inadequate	inadequate	weak
19	Sri Lanka	inadequate	weak	inadequate	weak	weak	weak	weak	weak	weak
PACIFIC										

20	Indonesia	adequate	weak	inadequate	weak	weak	weak	inadequate	inadequate	inadequate
	Indoneai	weak		weak			weak			
21	Tuvalu	weak	weak	weak	inadequate	weak	weak	weak	inadequate	weak
22	Fiji	inadequate	inadequate	inadequate	inadequate	weak	inadequate	weak	weak	inadequate
EUROPE										
23	Croatia	inadequate		adequate	inadequate	adequate	inadequate	inadequate	adequate	adequate
24	Montenegro	weak	inadequate	inadequate	weak	inadequate	inadequate	weak	inadequate	adeqaute
25	Slovenia	inadequate	adequate	adequate	inadequate	adequate	inadequate	inadequate	adequate	adequate
GULF&MED										
26	Algeria	weak	weak	weak	weak	weak	weak	weak	weak	weak
27	Iran	inadequate	inadequate	inadequate	inadequate	inadequate	inadequate	inadequate	inadequate	inadequate
	Iran-2	inadequate	inadequate	inadequate	inadequate	inadequate	inadequate	inadequate	inadequate	inadequate
28	Jordan	inadequate	inadequate	adequate	inadequate		adequate	inadequate	inadequate	weak
29	Kuwait	inadequate	inadeqauate	inadequate	weak	weak	weak	weak	inadequate	weak
30	Lebanon	weak	inadequate	adequate	weak	weak	weak	weak	inadequate	inadequate
31	Turkey	inadequate		inadequate	inadequate	inadequate	inadequate	inadequate	weak	weak

OS-Ocean Sciences

HP&F-Hazards Prevention and Forecast

DI&E-Data Information and Exchange

MM-Marine Management

A&P-Assessment and Planing

M&M-Mapping and Monitoring

Conv-Implementation of Conventions

Table H **Marine Policy**
Part VIII **Marine Policy**
Q **Responsibility, Information Sources, Availability of S&T and Marine Development Plans, Role of CD, Regional & International Engagement**

	COUNTRY	Responsible Ministry or Department(s)	Information sources for national use	National Marine Development Plan	Role of CB/CD in National S&T Plans	Membership in Conv/Treaties
AFRICA						
1	Angola	Environment (Env)	National	in prep	new investments	yes,reg active
2	Benin*	All/Interministerial	National, Regional International, NODC	in prep	new investments	yes, general
3	DR Congo	Env & Interministerial	National, Regional International	yes	new investments	12active345general
	DR Congo-2	Env with other relevant Ministries	National with limitations	yes	identified, no actions	12345general
4	Gabon	Env;Fisheries,MMarA & Foreign Ministry	National, International	no	identified, no actions	yes all
5	The Gambia	Environment	other	no	new investments	yes all, 1active,23general
6	Madagascar*	Environment	National, Regional International	no	identified, no actions	yes, active in the region
7	Namibia	Fisheries	National, Regional	?	identified, no actions	1general234active
	Namibia	Env, Fisheries	National, Regional International	in prep	new investments	all,124active/35general
8	Nigeria	Environment & Agriculture	National, Regional International	in prep	identified, no actions	yes all
9	Tanzania	Env,Fisheries Agriculture,Education	National, Regional International	yes	new investments	1234active5general
S&C AMERCAS						
10	Belize	Environment,Fisheries	National, Regional International	no, low key in prep	identified, no actions	124active35general
11	Ecuador	Interministerial	National, Regional	no	new investments	yes all
12	Honduras	Environment	Regional, International	in prep	new investments	1active2345gener

13	Jamaica	Environment	National	no	new investments	12gen/4active/reg,nat
14	St Kitts & Nevis	Fisheries, MMarA	National, Regional International	in prep	new investments	yes all active
15	Surinam	Ad hoc		in prep	not identified	12gen/nat sources
16	Uruguay	Interministerial	National	in prep	identified, no actions	14active/235general
SOUTH ASIA						
17	India	S&T, MinEnvForests	National	no	identified, no actions	yes
18	Maldives	Env, Fisheries	National, Regional International	no	identified, no actions	1234yes/gen/nat sources
19	Sri Lanka	Env, Fisheries, Defence	National, International,	in prep	new investments	14act/235general
PACIFIC						
20	Indonesia*)	Fisheries/Min Mar Aff	if needed National, International	in prep	new investments	all
	Indonesia	MinMaAf	National	yes	new investments	all
21	Tuvalu	Env, Fish, Interministerial Foreign Ministry	Regional, International	no	not identified	15gen/234active,reg
22	Fiji	Env, Fish, Forests	National	yes	new investments	246active/135gen
EUROPE						
23	Croatia	Environment, MMarA	National, Regional International	in prep	identified, no actions	yes, active, nat, reg, int
24	Montenegro	S&T, Env, MMarA	National, regional	in prep	identified, no actions	yes, active in 145
25	Slovenia	Env	National, Regional International	in prep	new investments	14act, nat-reg res/2gen-reg
GULF & MED						

26	Algeria	Env, Fishries	Regional	no	not identified	UNC&T/RegPro
27	Iran*)	Multiple and activity dependent	National	yes	new investments	all
	Iran-2	S&T	National, Regional International	yes	new investments	1active
28	Jordan*)	Environment	National, Regional	yes	new investments	all/active/nat sources
29	Kuwait	Env,Fish,Intermin-com	National	no	not identified	124yes,general,nat
30	Lebanon*)	Environment	National, Regional International	no	not identified	all/general/reg&int sources
31	Turkey*)	S&T, Env, Fishries, MMA and Foreign Ministry	National, Regional	NDP part	identified, no actions	all,active in region, nat sources
	*comments					

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