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(of UNESCO)

INFORMATION DOCUMENT

EMPOWERING DEVELOPING COUNTRIES TO SUSTAINABLY USE THEIR COASTAL RESOURCES (SELF-DRIVEN CAPACITY-BUILDING) —CLOSURE REPORT ON THE SIDA FUNDED PROJECT

United Nations
Educational, Scientific and
Cultural Organization

1. **Project Title:**
   Empowering Developing Countries to sustainably use their coastal resources: self-driven capacity-building

2. **Partner Country/Countries during project:**

South East Asia [China, Indonesia, Japan, Malaysia, New Guinea, Papua Philippines, Singapore, South Korea, Thailand, Timor L'Este and Viet Nam];

Eastern Africa [Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa, Tanzania];

Western Africa [Angola, Benin, Cape Verde, Cameroon, Congo, Côte d'Ivoire, Gabon, Ghana, Guinea, Namibia, Nigeria, Senegal and Togo];

Caribbean and Latin América: [Argentina, Barbados, Belize, Brazil, Chile, Colombia, Cuba, Ecuador, Jamaica, Mexico, Panamá, Peru, Trinidad & Tobago, USA, and Venezuela];

3. **Budget code:** 503-GLO-2000

4. **Funding source:** The Government of Sweden

5. **Total income received, including support costs:** USD 952,225.94

6. **Reporting period:** January to December 2007

7. **International Executing Agency:** UNESCO/IOC

8. **Implementing partners:**

NEPAD & WIOMSA in East Africa; University of Ghana; Ministère des Affaires des Etrangères du Gabon in West Africa; Ocean Research Institute, Durban, S Africa; Instituto Oceanográfico of the University of Sao Paulo, Brazil in Latin America; Dept of Marine Resources of Thailand in SE Asia University of Malaysia Sabah, Ministry of Science, Technology and Innovation-Malaysia, Polytechnic University of Catalane, Colombia, General Maritime Direction(DIMAR)-Colombia Ocean Commission(CCO) Indian National Centre for Ocean Information Services (INCOIS), Hyderabad, India; Integrated Coastal and Marine Area Management Project Directorate (ICMAM), National Remote Sensing Centre (NRSC) India, Alfred Wagner Institute for Polar and Marine Research, Germany. , UNESCO/IOC Capacity Development. SIDA, UNEP, and Instituto Nacional de Meteorologia (INAM), IOCINDIO, IOGOOS,

9. **Project starting date:** January 2006

10. **Project completion date:** December 2009

11. **Responsible Sector/Division:**
    Natural Sciences Sector, Intergovernmental Oceanographic Commission (IOC**)**

12. **Name of Person completing Report:**

Mr Ehrlich Desa, Capacity-Development Section, IOC.

Content

I. Background and Overall Report Summary

This is the final consolidated report of the project funded by Sida to the Intergovernmental Oceanographic Commission to implement the Capacity-development programme as approved by the IOC Assembly in June 2005.

This is the third report in the series, and since we have not received feedback from Sida on the earlier two reports, we have decided to use the 2007 report as a base and incorporate the lessons learnt from the following two years (2008-2009) into this one report. Accordingly the report is long, but detailed. As practitioners in Capacity-development we do feel that the lessons learnt can greatly assist others in the same field. However, in consideration of the many other duties that sponsors have to review small projects, we have put the most valuable lessons into the few boxes scattered through the document.

The long-term objective of the Capacity-development effort of the Intergovernmental Oceanographic Commission is to reduce the vulnerability of livelihoods and ecosystems in coastal areas of developing countries through good science and good governance.

The IOC approach is based on the assumption that government-mandated institutes are best placed to provide leadership through appropriate science and contribute to improvements in better management and informed choices for coastal economic development.

Strong ownership of participating institutes and sustainability of results shows that the self-driven capacity development is an effective approach.

Background

The project of self-driven Capacity-development is based on the thesis that national institutes are the best vehicles to serve governments in formulating policies based on sound science. Institutes should therefore be places where scientists can work freely and effectively producing peer-recognised science. The Sida-funded project addresses the three pillars of an institute: a visionary leader who provides a safe and invigorating environment; project managers adept at formulating proposals that attract external funding; and well-trained scientists working cohesively in teams and able to create and communicate science to different audiences. The project is implemented through a variety of hands-on workshops.

Project activities

During the entire project period 19 workshops were conducted in 4 IOC regions directly funded by Sida were conducted and 2 additional ones based on Sida actions were funded by an EU supported project, ReCoMaP.

180 participants from over 56 countries attended of which about 47% were directors. A good indicator of the importance that participants attached to the process was self-sponsorship, and 37% of out-of-country participants found their own funds to travel to the workshops. Project implementation has advanced most in East Africa and least in SE Asia, reflecting the different start times in the different regions. Objectively though, project uptake did appear faster in some regions than others *possibly reflecting the prior level of engagement of sponsors in the region.*

Difficulties encountered

The difficulties encountered in implementing this project were treated under 4 sub-headings:

a. The greatest challenge to implementation was encouraging the right participants to attend the workshops and contribute financially to their travel.

b. Working with institutes rather than with individual scientists greatly increased the scope and effectiveness of the program. Many issues faced by colleagues in developing regions are rooted in a societal context. Examples of real problems are the lack of exciting opportunities in marine sciences for the brightest young minds; a high turnover of researchers and directors; and at times poor governance at a level higher than the institute.

c. Language, geographic and cultural specificities had also to be factored in. Interpretation into French and Spanish alleviated the language problem to some extent in West Africa and Latin America, but the lack of a common regional language was a definite drawback in SE Asia. Cultural differences in different regions arose based on the importance that directors attach to improving management skills.

d. Lack of human resources to follow-up interventions in the regions remains a major impediment. In East Africa, IOC can call on 2 professionals, whilst in Latin America and SE Asia IOC maintains regional offices. Contrastingly, there are no resources at all in West Africa. This reflects directly on workshop uptake.

Results

- ✓ In lieu of hard indicators in the field of Capacity-development, we report via statistics from the workshops. Parameters chosen reflect the diversity of countries, institutes and directors that attended the workshops.
- ✓ We also enumerated actions taken by the participants that flow from the workshop. These include numerical modelling, drafting proposals for funding, and educational issues. The most impressive set of institutional activities attributable to workshop inputs is in the area of numerical modelling as institutes strove to adopt this tool to enhance their impact in different activities. Major interest was also generated in the proposal-writing workshops that transferred skills in drafting proposals for funding. An East African proposal received major funding for implementation in Zanzibar, and we hope that one from Latin America will shortly reach this stage. Finally, there has been important activity in broadening the base for higher education as a key to strong institutes. IOC is supporting several activities in this regard that have been initiated by the region.

Lessons learnt

This project was designed to be self-contained and provide sustainable results on its own. We have learnt much during this process:

- Lessons learned on workshop preparation are that first and foremost workshops should be announced well in advance, though plans should remain flexible as late as possible. This is to accommodate the fact that communications and travel in developing regions is not always an easy task. We have also encountered difficulties in getting an institute's highest authority to attend. However this key participation is obtainable if there is clear logic on the importance of spending time not only for one but the 3 leadership workshops in the series.
- Lessons learned whilst conducting the workshops have been that making time to allow directors to share their experiences with others is a critical added value to the workshops. Participants also find that the workshops are best when they are organised to foster networking.
- Lessons learned on follow-up of workshops are that unfortunately connections between participants, as we know, are weak after the workshops. This is probably due to the fact that directors have little time for building networks when not immediately required for their line management tasks. We have therefore had to rely on informal means to monitor the effectiveness of the workshops.

- The best evidence of sustainability will come in later years after project completion, but encouraging signs are already seen. These are that institutes see these activities as worthy of investment of their own funds, understand the importance of not depending on a single source of funds, and are integrating IOC project activities into the institute's own plans for growth.

Evaluation

Evaluation is challenging in the area of Capacity-development. Many organisations are involved in this process and no clear and simple set of generic indicators is yet available. The issue becomes more tractable however if evaluation is separately undertaken of each of the 3 pillars of an organisation. These are:

- **Evaluation of the leadership workshops**. This will be difficult and subjective; however the parameters of ownership, relevance, sustainability, effectiveness and efficiency can be used as guidelines in this task. As the customer, the 'beneficiary' institute will be best placed to respond as to the efficacy of the process. UNESCO/IOC and Sida should be the first ones under evaluation, followed by the institute;
- **Evaluation of the transfer of skills of proposal-writing**. This is less complex, as the funding raised from projects developed in these workshops, thanks to skills transferred, is an important indicator of success. Other key aspects are strong ownership and self-drive in these projects, as well as development of capacity following institutes' priorities;
- **Evaluation of the training and team-building phases.** This can be done through examine number of publications, traceable contributions to policies and to improvements of livelihoods and environment in coastal areas and seas.

Visibility
This is described in detail in the section below.

A potential next phase
This project was designed to be self-contained and provide sustainable results on its own. We have learnt much during this process and proposed an outline for a Phase 2. The second phase proposal would have built on the following elements:

1. Work with institutes that have shown a willingness to change their business-as-usual scenario, perhaps 2-3 per region (rather than 10-20 in the current implementation);

2. In change management, new efforts must be addressed at two further complementary levels – at ministries and at communities. Ministries are important if structural changes are required to effect new attitudinal changes, whilst responding to communities' needs ensures better that science continues receiving national support;

3. Intricately linked to leading change is the question of securing increased funding and in this quest new users of science products must be identified. Climate and environmental changes, together with increasing industrialisation in the coastal zone brings about new challenges but also open opportunities for science consultancies, and institutes must be equipped to address these new customers. The advantages are manifold – increasing the funds flow to institutions, increased earnings for staff, opportunities to publish, and educational opportunities; and lastly

4. In caution, an overemphasis on consultancies for commercial research can distract an institute from its long-term objectives. Therefore institutes need coaching on how to catalyse and incubate small companies of scientists to conduct routine consultancies. This will have 2 benefits – it will create a layer of entrepreneurs and therefore attract

bright students to research in marine science, whilst ensuring that the skills of national institutes are not wasted on an avalanche of small coastal tasks.

Where next?
Since the Phase 2 outline may not receive funding support, we conclude the project with the following:

The excellent and enabling support from Sida allowed the IOC to launch the Capacity-development implementation program that was approved by the 23rd Assembly. Workshops' participants perceived the implementation as a sustainable approach to developing capacity in marine sciences research and observations.

In the interim too, IOC has not been able to maintain the human resources necessary to continue a possible Phase 2 implementation.

These two factors of funds and human resources make the prospects of assisting developing member states to meet their national priorities through robust science offered to decision makers and communities, fairly remote.

Capacity-development, without debate, requires long-term commitment, and termination of a process after 4 years may not be an optimum way of developing capacity in the very difficult conditions that institutes, their directors, and scientific staff operate in the developing world.

Yet we hope that the impact of our workshops will continue to resonate in the minds of the directors we had the honour of interacting with. Our hope too that the excitement that the Decision Support Tools generated in our science colleagues in developing regions will continue to stir that curiosity that is the hall-mark of true Self-drive.

II. Description of project activities undertaken during the reporting period

Workshops were held in West and East Africa, Latin America, and South East Asia for the Phase 1 of activities, and training and projects were undertaken for the second phase of national projects in East and West Africa. All reports are available at the IOC Capacity-development web site http://www.ioc-cd.org/index.php. A summary of the project activities is tabled below. An analysis of our activities is presented in the later sections. In addition, an over-view of the project activities completed, and regional distribution, is shown in Table 1 of Annexe I.

II.1 Background

The project focussed on partnering marine science institutes in developing regions of the world and transferring skills in advanced leadership, bid-writing and team-working. The interconnections of the workshops are shown in schematic form below. Also shown is the total Capacity-development self-driven scheme of actions over a decade cycle – the minimum period of continuous effort that is needed for a sustainable action before impacts are sustainably visible.

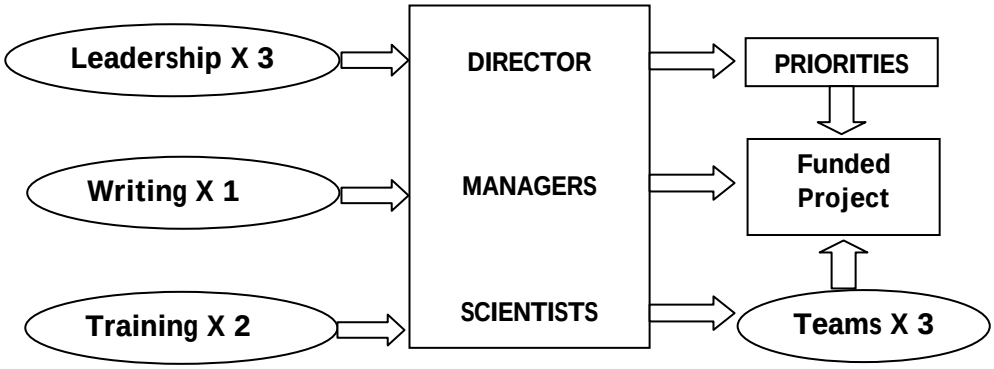


Figure 1

Phase 1

As described in the original proposal the process of strengthening institutes began with the directors of the institutes. The workshops are intense interactive sessions conducted by a professional Human Resources coach with each workshop building on the skills built earlier. In the first workshop *Foundations for Effective Leadership* are taught, followed by *Skills for Personal and Team Effectiveness* and conclude with a workshop where directors can connect, calibrate and collaborate with peers across regions.

Interspersed with these efforts towards directors are professionally-conducted workshops for project managers who collectively draft a proposal to implement one of the priority issues that their directors had earlier identified. Their draft proposal is then packaged in a format suitable to be sent to a funding agency.

Institutional scientists are the third group addressed. Scientists identified by their directors are slated to undergo 3 team-building workshops. This trains them to work as a true team where they are demonstrated through interactive sessions that collaboration inevitably produces improved results compared to individual work.

Careful networking of resources, collaborating with like-minded partners, and the welcome self-support of participants to workshops ensured that some savings were possible after completion of all tasks scheduled to be completed. These savings allowed us to start pilot Phase 2 actions that are described in this terminal report of the project.

Phase 2

Phase 2 of the project builds on the self-driven change elicited in institutions and is therefore primarily self-funded – drawing funds externally to the Sida grant. Projects addressing national decision making were begun in a number of the regions, these also addressed regional priorities and needs, such as the delivery of the Nairobi Convention programme of work in East Africa. Institutes lead the process getting funded projects underway that; 1) addressed the identified the priorities from the leadership workshops; 2) were activities set out in the proposal writing workshops, and 3) utilised the teams from the team building workshops. The use of Decision Support Tools (DSTs) was prioritised for capacity in most regions and this lead the focus of the Phase 2 activities. Training towards this was provide throughout the project period, both Sida funded and externally sourced.

Project activities are summarised in the following tables of Phase 1 (fully Sida funded) activities, and partially Sida funded Phase 2 activities.

Decision Support Tools (DST) for Coastal Management

DST are visual, interactive tools, to inform stakeholder decision making on issues of management of a coastal town or environment, such as predicting the impact of a sewerage outfall or expected sea-level rise. The DST undertaken through the programme are built on hydrodynamic models covering <10km to 300km of coastline, and utilizing data collected locally and from remote sensing. They provide both novel research and funding opportunities to scientists, and empower institutes to deliver quantitative scientific information on mandated issues.

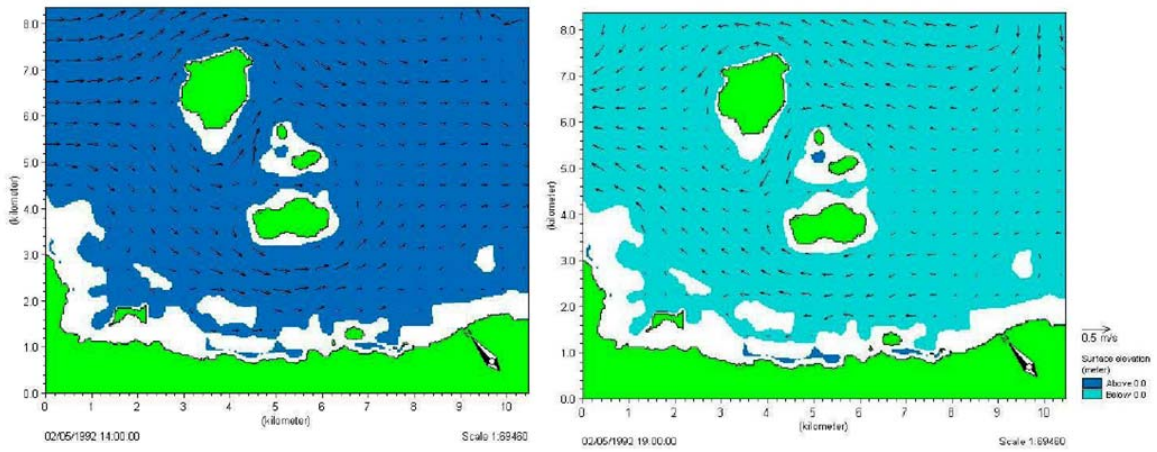


Figure 1. Preliminary ocean current patterns at high tide (left) and low tide (right) for North East coast of Mahe, which is the main island of Seychelles. There are concerns of inundation and sealevel rise issues for the port and surrounds.

II.2 Tabulation of Project Activities during reporting period are listed in Annex I

III. Difficulties & problems encountered, measures taken and changes in implementation

The diverse nature of the trainings and activities undertaken as part of the project provide ample opportunity to encounter and address implementation issues. These are detailed under 4 following themes.

III.1 Implementation challenges

Increase in financial ownership must be balanced with participation and representation of the poorest countries in the region. As financial participation is a necessary part of ownership of activities, we have asked the institutes to provide for the travel of their participants to our workshop, or of half of their participants. In addition to make the workshops more cost-effective, this appears to increase quality of participation as institutes that invest in the workshops ensure that they get the best out of them. However, there is a risk that this may tend to lower participation of Least Developed Countries (LDC) in the region. Evidence for this is mixed as for certain workshops the LDCs were amongst those with the highest investments.

Getting the right participants to the workshops is a recurrent issue with most cooperative programmes. Our approach has been to first work with directors of the institutes (leadership workshop), and obtain from them guidance and choice of focus of subsequent activities (proposal writing, team-building, and technical skills workshops). This has ensured that the

potential benefits of participating in following workshops are clear, and consequently the candidate most likely to maximize benefits to the institute's performance were sent to our workshops.

Estimating the final impact of leadership training remains a challenge. Most directors that participate to our workshops, once back to their institute, have little time to devote to provide us the necessary data. More broadly, despite the very large sums invested by organizations, public or private, in leadership training, a rigorous and unified framework for evaluation of these programmes is yet to be developed. Evidence of important benefits comes from anecdotic information from directors, indicating applications of techniques to driving change and increase performance in their institutes, and indirectly through more active search of funds or regional collaboration (more on this issue in Section V and Section VI).

III.2 Structural and societal challenges

Working with institutes, rather than only with individual scientists, has greatly increased the scope, effectiveness and sustainability of IOC capacity development activities. However, many of the issues faced by our colleagues in developing regions are rooted in a societal context that is beyond the scope of the present project. However, discussions with national experts suggest many aspects of the potential problems can be addressed or greatly minimized as indicated below.

Turnover of researchers and directors has sometimes created discontinuity as the rate is rather high in certain institutes in certain countries. Some of the most promising directors we have worked with have left or had to leave their post, for different reasons (promotion, change in government, family ties and networks insufficient, etc.). At present we do not see an easy solution to this. However, the majority of the institutes we have worked with have had stability in their leadership.

In certain cases governance at a higher level than the institute is the key limitation. In certain countries, information indicates that issues ranging from lack of awareness to excessive corruption or graft have severely limited the growth and performance of institutes. The leadership workshops equip directors with techniques and peers' experience on how to partly mitigate this. Beyond this, there are two potential solutions we see to this: work at a level below the institutes with the small consultancies that have more freedom and can adapt faster to constrains than government-funded organizations (see previous paragraph), and work at the level of ministries (see Section VIII).

There is a lack of exciting opportunities in marine sciences for the brightest young minds and information suggests this could be greatly alleviated through small consultancy firms in most of the regions we have worked in. Too many of the most talented and motivated students and junior scientists leave the field due to the small number of posts opening in government-funded institutes. However, the rapid growth in the demand for environmental management services in the coastal zone in today's emerging economies suggests that many of today's developing regions will follow a similar path. In India or other countries in transition, many young marine scientists have created themselves excellent employment and income opportunities by developing small consultancy firms that provide environmental management services in the coastal zone. It is most likely that this approach will soon become relevant in many of the African countries we have worked in. The opportunities this will create should be explored (see Section VIII).

III.3 Language and geographic or cultural specificities

Interpretation has apparently not limited effectiveness of workshops but other language-related issues remain. In Latin America, language has not been a problem and participants to

the leadership and team-building workshops appeared to greatly benefit. In Western Africa interpretation seems to have worked adequately. English-speakers seemed to benefit more from the workshops, but it appears this has more to do with cultural/educational difference rather than interpretation issues. In South East Asia, several of the participants had insufficient mastery of English to truly benefit from the directors workshop.

The workshop for directors has been relatively less successful in South-East Asia. As mentioned above, language may explain part of this. However, discussions with participants and colleagues from the region suggests possible other explanations. Those may include an ancient and greatly different tradition of management and leadership, and differences in the type of challenges faced by directors such as different labour regulations, larger pool of candidates for positions in the institutes, difference in education and research systems, etc. The approach is being revised in South-East Asia in consultation with our colleagues from the region. One of the key challenges is to obtain accurate information on institute/ministries priorities and plans without the workshops for directors, which in other regions has been a very effective way to obtain this information.

In-country team-building workshops in Ghana and Brazil have showed that implementation must proceed very differently. In Ghana (Accra 26-29 September), after leaving ownership of outcomes with our otherwise excellent national partners, too many Ghanaian participants were invited and this challenged the workshop facilitator. By contrast, in Brazil (Cananéia 5-8 December 2007), too few Brazilians were present. The difference seems have come at least in part from different management styles and prerogatives of directors in the two countries, as well as different perception of the importance of “soft-skills” (leadership and teamwork) for institutional achievements.

Implementation was delayed in South Asia due to low initial response. In contrast to other regions, the response to the initial invitation to the directors’ workshop was quite low. It appears that other channels of communications must be used with many of the directors in the region. Despite this delay, firm support from a high-profile partner institute in the region, together with long working experience in the region within the IOC capacity development unit gives confidence that implementation will proceed well in 2008.

III.4 Resource issues

In certain regions lack of manpower has impeded progress. This is particularly true in Western Africa (IOCEA) where IOC does not have any staff to help in implementation. UNESCO country offices have partly compensated for this, nonetheless the difference in progress is clear with the Western Indian Ocean where IOC has 2 full-time staff working in Nairobi. In Latin America and South-East Asia, IOC offices are present. In many ways, compared to Eastern Africa, sciences for coastal environment management in Western Africa have been neglected by most bilateral and other cooperation partners. Because of the large population that depend more or less directly on healthy coastal ecosystems there, we are in the process of identifying ways to increase our manpower in the region. One possibility that we are trying for 2008 is to support graduate students to work part-time for IOC while finishing the MSc or PhD. However, the best would be the secondment or sponsoring of associated experts or junior professionals in the region.

Strengthened follow-up between workshops would increase sustainability of benefits in many regions. Experience in other fields suggests that leadership is best developed by longer term coaching that complement workshops. Monthly tutorials as well as personal communications with the human resources consultant that conducts the workshops have been tried, but it is now clear that most directors we work with do not have the time for this between workshops. The approach that has worked best is to follow up directors’ workshops with the proposal developments and training, along the lines that directors have identified in the leadership workshops.

Cost of tools and software has slowed but not stopped applications. Several directors in Eastern Africa were driven to develop coastal modelling capacities in their institutes. Established models tend to be proprietary and expensive and several institutes had difficulties acquiring them. In response, the institutes have developed in parallel their capacities to apply alternative, public domain software (ROMS and CWR models, refer to Section IV.2 for more details), use of proprietary software was included in the proposals being developed, and training was sought and obtained in institutes outside the region where Eastern African scientists could develop and/or maintain their modelling skills.

III.5 Summary

The difficulties encountered in implementing this project were treated under 4 sub-heads.

- The greatest challenge to implementation was encouraging the right participants to attend the workshops and contribute financially to their travel.
- Working with institutes rather than with individual scientists greatly increased the scope and effectiveness of the program. Many issues faced by colleagues in developing regions are rooted in a societal context. Examples of real problems are the lack of exciting opportunities in marine sciences for the brightest young minds; a high turnover of researchers and directors; and at times poor governance at a level higher than the institute.
- Language, geographic and cultural specificities had also to be factored in. Interpretation into French and Spanish alleviated the language problem to some extent in West Africa and Latin America, but the lack of a common regional language was a definite drawback in SE Asia. Cultural differences in different regions arose based on the importance that directors attach to improving management skills.
- Availability of human resources in the regions remains a major impediment and has a direct impact in the quality of the capacity-development activities conducted. As a positive example, in East Africa IOC can call on 2 professionals for assistance in the program and this strength reflects in the advanced stage of activities there. In Latin America and SE Asia IOC maintains regional offices with one IOC professional who has to attend to the entire spectrum of IOC activities. Unfortunately, there are no resources at all in West Africa or the Indian Ocean regions.
- Accessible competitive small to medium project and training funds are important for a region to move from training activities to projects, as occurred in East Africa. This problem was encountered in the other regions and should be addressed in future capacity development activities.

IV. Project Results achieved during the reporting period

The goal of the project, and all UNESCO/IOC interventions, is for institutes to sustain the capacity to better serve their national and regional marine and coastal needs. The purpose addressed within the Phase 1 of the project period was to elicit self driven change in the management of institutions, which can then result in diversifying and improving the funding base, sustainability, and impact of these institutions. Therefore, the most fundamental result that we aim for in the Phase 1 of activities is that institutes are self-driving their own capacity-development agendas. Of course it is our hope that this drive improves their responses to their stake-holders that range from decision-makers to communities to their scientific peers – a roll-on result, or what could be considered a result of Phase 2 of the project. This theme is emphasised during all workshops and activities.

How successful we are in this process is difficult to measure, and many organisations are grappling with the same issue – quantifiable performance indicators on the success of interventions in capacity-development. In lieu of hard indicators, in this section we report on the statistics from the workshops of Phase 1 activities (IV.1), and on actions taken by the participants that flow from both the Phase 1 and Phase 2 activities (IV.2).

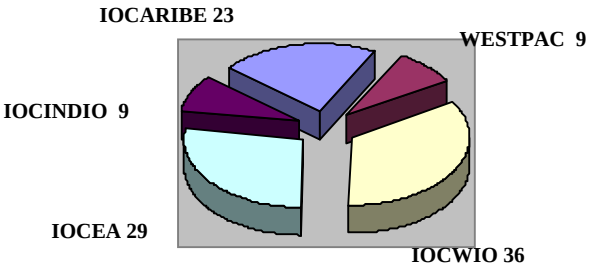
Further results specific to the sustainability of the project are found in the following section V, an evaluation is described in section VI, and those actions that increase visibility and public outreach are tabled in section VII, including publications, media releases and meetings with decision makers and stakeholders.

IV.1 Results achieved through Phase 1 activities funded by Sida: Statistics and outcomes from all leadership, proposal writing and team building workshops combined

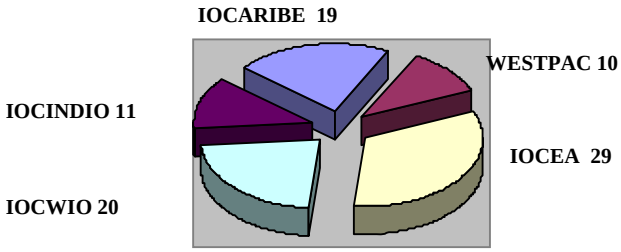
The pie charts in this section give a spread of countries, institutes and directors that attended the workshops for the Phase 1 activities All workshops and their results are detailed in Tables 1 to 4 of section II.2 and workshop reports are available for each of these (see Annex 3). During the project period, 26 workshops were conducted in 6 IOC regions – Latin, Caribbean, West Africa, East Africa, Indian Ocean, and Western Pacific regions (see Tables 1 to 4 for tabulation of all activities). Of these, 8 leadership, and 6 proposal writing/ team-building workshops were undertaken in the regions (Tables 1 to 3). The Leadership workshops for directors were held in Accra (Ghana), Bangkok (Thailand), Havana (Cuba), and Hyderabad (India), Jamaica (Kingston), Libreville (Gabon), and Maputo (Mozambique). Of the 180 participants from 56 countries that attended these workshops, 77 were directors.

A good indicator of the value that participants attached to the process was self-sponsorship. Considering all leadership, proposal writing and teambuilding workshops, approximately 37% of out-of-country participants have paid their way to attend a workshop. Institutional change is accelerated and sustained when change occurs in the behaviour of higher management. Therefore, the traction achieved with institute directors is also a good indicator of impact. Of the directors that attended, 10% re-attended advanced leadership training, where they were available in their region, or even in another region.

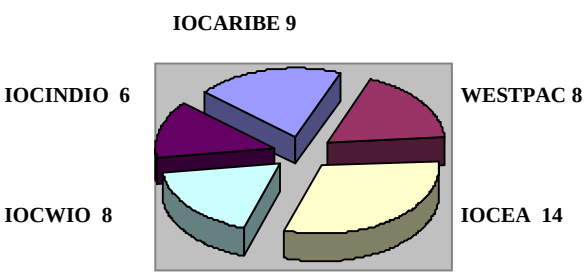
Attending Directors



Attending Institutes



Attending Countries



Conducting follow-up leadership, team building, and bid-writing workshops

The process of conducting a workshop starts with inviting the right participants. This begins by forming a list of the most viable institutes in each country of an IOC region, drawn up from a host of parameters and information available (size and mandate of the institute, publications, advice from our colleagues in the country or region). Invitations to the workshops are then sent after consultation with IOC colleagues in the field and inputs from the IOC country-representative where appropriate. This process does not always get the most appropriate participants the first time, and corrections are made for subsequent leadership workshops, bid-writing, and team building workshops. The parameters chosen reflect the diversity of countries where we have contact with institutes, the spread of institutes and the number of directors that have attended and where we can expect some impact to occur.

Drafting Proposals for funding

Immediately after the first leadership workshop in a region, a 1 day session is conducted on Marine Action Planning. In this session, directors identify coastal and ocean management issues that their institutes are mandated to address, both nationally and regionally. Directors then prioritise the issues using the skills that they have just learnt at the leadership workshop. Implementations of activities linked to these issues are prioritised and the common Capacity-development needs surfaced for the region.

These priorities are used as the basis for drafting a regional proposal developed during the bid writing workshop. This process has been completed in East Africa, Latin America and Indian Ocean GOOS Community. The next step involves editing the material in formats suitable to request new funded projects from international donors and national agencies, and to link and augment the capacity development priorities and projects identified to existing institute activities.

We have endeavoured to make proposals competitive and ‘business-like’. Our partner institutes expect funding support based only on the merit of their written proposal that has passed through the same scrutiny as proposals from other institutes. Regional proposals developed through the bid-writing and teambuilding activities promote sustained networking both at national and regional levels. All sub-regional proposals developed under the Sida project included participating institutions as the implementing agencies.

The whole process embodies the concept of self-driven capacity-development and should stand institutes in good stead in the future.

IV.2 Results achieved through sourcing additional funds to undertake Phase 2 of the programme:

Developing Decision Support Tools addressing national priorities

In Phase 2 of the project, the self-driven change elicited in institutions through the leadership, teambuilding and bid-writing workshops is channelled in the development of Decision Support Tools (DSTs) addressing national and regional needs. The activity is therefore primarily self-funded with Institutes leading the process in getting funded projects underway. These activities are done sequentially with those of Phase 1 activities, and therefore in some regions they have taken place during the project period and are reported here. Training and technical support was provided throughout the project period, both Sida funded and externally sourced.

Funding Phase 2: Steps taken in Africa

Using funds that institutes have sourced in East Africa, six projects are underway that will provide modelling outputs to support decision making by local stakeholders. These projects address issues such as climate change impacts on the coast, shoreline change, aquaculture and water quality, and habitat management. In purely monetary terms, with an input of 50,000 USD from IOC and Sida combined in 2008-2009, East African marine science institutes have garnered additional funds of 425,000 USD for projects and training from national and international sources. In addition, Institutes have directly sourced over 800 000 USD in funding for post graduate studies programmes - WIO RISE initiative- focusing on coastal management, and DST development. The IMS, Tanzania, also sourced funds for commercial numerical modeling software, and is now leading a national project using DSTs. In West Africa phase 2 has begun with a DST awareness raising and training with external funds sourced from the government of Flanders. All project activities and training workshops are lead by the institutions. As with the leadership and other phase 1 activities, these are substantially self funded. For details of each of these workshops and trainings see tables in section II.2.

Measuring the results of this initiative can be focused on the impacts of institutional change, and the support they provide to national decision makers and stakeholders. For the regions where Phase 2 activities have been started, activities can be evaluated on their ability to:

- meeting national priorities
- bringing new funding and sustainability to actions
- making scientific information understandable to communities and decision makers

The following section examines these results in East Africa, and to a lesser extent West Africa, where the Phase 2 activities have begun. Activities have been undertaken through a number of sequential steps in the region, reported here:

1. Awareness raising and training in Numerical Modelling and other DSTs
2. Institutes leading funded projects using Decision Support Tools
3. Institute projects providing scientific information for local stakeholders
4. Addressing education as a long term key factor in sustaining strong institutes

Figure 2. KMFRI scientists undertaking current meter deployment (left) and preparation of bathymetry mapping equipment (right) in Shimoni, Kenya.

Awareness raising and training in Numerical Modelling and other DSTs

Oceanography is an expensive science and the types of models being promoted are a way of obtaining sound first order appreciation of the physics of coastal seas. Models are also a sound base from which to conduct consultancies for industries in the coastal zone. Combined with GIS and Remote sensing they can provide easy to understand and useful tools for coastal decision making. Therefore, Phase 2 activities have a large training component on hydrodynamic modelling. A major focus of activities implemented was to enable institutes to better function as consultancy incubators, so as to stop them from being overwhelmed by contract research.

Training and awareness raising activities had a number of steps, begun with the IOC Assembly directive to foster Decision Support Tools in the form of modelling, remote sensing, and GIS (all details are provided in the tables of section II.2, and reports are listed in the annex and available on the IOC website):

- WAPMERR of Geneva and DHI of Denmark were invited to demonstrate their products on the applications of modelling at the first workshop in the series in Maputo, Nov 2005. Directors in Kenya, Mozambique, and Tanzania followed up an interest in modelling for disaster reduction and coastal zone planning.
- In February/March 2007, a physical oceanographer visited institutes in Kenya, Mozambique, and Tanzania to show-case the possibilities offered by coastal modelling tools. Case studies of local sites chosen by institutes were also run using the model by researchers who attended the workshop.
- In April/July 2007, a coastal modeller funded by U.S. National Science Foundation visited the Institute of Marine Science in Zanzibar. The goal of this visit was to continue training in hydrodynamic modelling: developing a model of circulation of the Zanzibar channel and training junior scientists in setting-up, running and applying this model. In 2008 US students visited with the coastal modelling researcher to undertake joint field work and modelling activities with IMS staff.
- In November and December 2007 two researchers from Mozambique and Kenya acquired competitive funding for fellowships supported by the Norwegian Government. They undertook fellowships at the National Institute of Oceanography, India to further develop hydrodynamic models for the harbours of Mombasa, Kenya and Maputo, Mozambique.
- Further fellowships supported by the Norwegian government were obtained in 2008 by researchers from Tanzania and Seychelles institutes involved in the Capacity-development programme. They undertook hydrodynamic modelling projects with NIO and with the Centre for Water Research (CWR), Australia.
- The CWR was informed of our efforts in Capacity-development and offered free software licenses for use by institutes in developing countries. These were made available to institutes in East Africa in 2008 during workshops.
- Institutes in Kenya raised 70 000 USD in funds, primarily supported through a competitive grant from WIOMSA, to undertake advance training in modelling with countries from the region. This took place in December 2008 with trainers from NIO and CWR.
- At the Kenyan regional workshop, all 5 fellows who had undertaken periods of research and training with NIO and CWR lead the Kenya regional training workshop through a “trainers of trainers” approach.
- An Italian government funded project on Coastal Mapping of the Indian Ocean regions affected by the Dec. 2004 tsunami (COASTMAP-IO) was awarded to IOC to train national hydrographers and oceanographers in acquiring shallow water bathymetry off their coasts. This base data would be useful for both on-shore inundation modelling from

ocean-based events as well as for coastal hydrodynamic modelling. With small additional Sida funds, oceanographers from the Indian Ocean region were trained at two COASTMAP-IO workshops to examine open source satellite and in-situ data so that their proposals were based on robust science data. These data formed the basis for the following workshop in Sabah, Malaysia on proposal-writing where scientists learnt how to formulate proposals that were understandable and of use to their national decision makers.

- A regional awareness raising and data collection workshop for the West Africa region took place in Cameroon, in November 2009. This was a follow-up to the Loango proposal writing meeting, and addressed the use of DSTs for better management of the coastal zones.

Institutes leading funded projects using Decision Support Tools

Project implementation of Phase 2 activities had advanced most in East Africa and least in SE Asia, reflecting the different start times in the different regions. However, project uptake did seem to be faster in some regions than others, possibly reflecting the prior level of engagement of sponsors in the region.

Institutions in East Africa have advanced significantly in the implementation of Phase 2 activities: sourcing funds and initiating 6 projects in 4 countries addressing coastal and marine management issues using DST. Baseline reports on aspects of the ecosystem, driving processes, and stakeholder needs have been undertaken at these sites, as part of the project- Physical data includes: winds, tides, freshwater inputs, currents, bathymetry, sediments, and water quality properties. Data and models can now be used to address other management issues at the sites. The projects address priorities identified by institute and government leaders involved in the programme, both in terms of capacity development and management issues, including:

- Kenya: Malindi - sea level rise and flooding (Kenya Meteorological Department - KMD)
- Kenya: Shimoni - fisheries habitats (Kenya Marine and Fisheries Institutes – KMFRI)
- Mozambique: Bon Sinais - water quality (University of Eduardo Mondlane School of Marine and Coastal Sciences - UEM/ National Institute for Hydrography and Navigation - INAHINA)
- Mozambique: Beira - dredging and sediments (INAHINA/UEM)
- Seychelles: Fisheries habitats (Seychelles Fisheries Authority – SFA)
- Tanzania: Zanzibar – Coastal erosion (Institute of Marine Science - IMS)

Hydrodynamic models were developed for each site through the collaboration of international experts, and through workshops in: Kenya, hosted by KMFRI, and attended by scientists from KMD and SFA; Mozambique hosted by UMD and attended by INAHINA; and representatives of local authorities and Tanzania. The reports on the workshops for each are listed in the annex and available on the IOC CD website. The project reports are available on request.

Institute projects providing scientific information for local stakeholders

One of the projects in East Africa also has a large participatory stakeholder component that will run throughout 2010: “Empowering NSAs in Tanzania to plan for sustainable coastal livelihoods using Decision Support Tools” is a ReCoMaP (EU) funded project that is taking place along the Jambiani–Bwejuu coast of east Zanzibar, Tanzania. The project assists communities and stakeholders in the area to assess and make decisions on management

approaches that mitigate the problem of erosion faced, as well as better plan coastal development with predicted future shoreline changes (see insert box).

As with all of the 6 projects in East Africa, there is a strong component of stakeholder interaction. This is focused on providing scientific information to make informed decisions about coastal and marine management resources, in a readily understandable format, and supporting participatory decision making. The ReCoMaP project is well funded and includes a “Training of Trainers” of NGOs, government departments and institutions on themes relating to approaches to participatory management and stakeholder analysis. Trainers then in-turn led a project workshop with 38 local participants. The other 5 projects in the region also undertook pilot stakeholder analysis activities, and final meetings with stakeholders to support the decision making process. Complete stakeholder analysis activities are being supported by institutes in Kenya and Mozambique in 2010.

All awareness raising workshops not only provide training to participants, but include an outreach component where participants showcase their skills to potential users. The complete list of these meetings and the impact in terms of audiences reached, are listed in section VII on visibility of the actions (VIII).

The Climate Change Convention of Parties (COP15) took place in Denmark in December 2009. In the lead up to the COP, it became clear that the very same skills being developed, and issues being prioritized, by institutions involved in the CD programme, were essential to the decision makers from African countries attending the COP. These will become even more important for coastal and marine management as climate change increasingly impacts African coastal zones. The CD programme therefore adjusted their inputs in 2009 to respond to the requests of African Member states, and the results and outcomes are documented in the following section VII on visibility of the actions.

Shore line Change in Jambiani Zanzibar

"Empowering Non State Actors in Tanzania to plan for sustainable coastal livelihoods using Decision Support Tools" is a ReCoMaP (EU) funded project that is conducted along the Jambiani–Bwejuu coast of east Zanzibar, Tanzania (2009-2010). The project assists communities and stakeholders in the area to assess, plan and make decisions on management approaches that mitigate the problem of erosion faced, as well as better plan coastal development accounting for predicted future shoreline changes.

The Institute of Marine Science (IMS), University of Dar-es-Salaam in Zanzibar leads a national team of partners including JAMABECO (Jambiani Marine and Beach Association). UNESCO/IOC coordinates and provides technical support for the project.

Project partners and local stakeholders are undertaking a participatory decision-making process to address the management issues faced at Jambiani-Bwejuu, supported by scientifically based future scenario development. Specifically, the project:

- Develops a suite of future scenarios with Decision Support Tools and hydrodynamic modelling enabling stakeholders to visualize outcomes of human interventions.
- Uses visual scenarios of coastal change to support beneficiaries to select desirable futures and management interventions, and developed management plans for these.
- Disseminates best practice guidelines locally, nationally and regionally, describing optimum approaches in developing and implementing the future scenarios.

The activities in 2009 included: collection of data; development of a hydrodynamic model; presentation of a scientific report on the hydrodynamics of the Jambiani Coast, Zanzibar; a training workshop involving 10 participants concerning the preparation of hydrodynamic models; stakeholder analysis addressing issues of coastal livelihoods at the site; and "Training of Trainers" from NGOs, government departments and institutions on participatory management and stakeholder analysis methodologies. Trainers then in-turn led the project stakeholder workshop with 38 local participants

Figure 5. Damaged and abandoned houses on the Jambiani coast, showing the remaining sea wall in the background.

Figure 6. Seaweed farming provides some additional income to many families along the Jambiani coast.

Figure 7. Stakeholder review of preliminary model results with scientists from IMS and NIO, November, 2009.

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Addressing education as a long term key factor in sustaining strong institutes

Through Phase 2 activities in East and West Africa much has been done to provide "continued educational training" to skill up researchers, enabling their institutes to better serve national and regional decision makers. This has been primarily in the form of short workshops, and collaboration with international experts through fellowships and projects. In the longer term the quality of scientist coming into the marine sciences needs improvement. Education is key in this, and IOC is supporting several activities in this regard, many initiated or followed-up from the region.

- Following the first modelling awareness workshop, IMS of Tanzania, started a process to teach a Master's in Physical Oceanography useful for the Western Indian Ocean region. The institute is also collaborating with colleagues at Scripps Institute of Oceanography to submit a proposal to NSF for funding where post-graduates from the USA spend time at IMS running the Regional Ocean Model System (ROMS). IMS has also signed a Memorandum of Understanding with the School of Marine Sciences (SOS), University of Bangor, Wales.
- IMS and SOS have jointly obtained a UNESCO Chair in marine science through the UNESCO Twinning Network [UNITWIN] program.

IV.3 Summary

The implementation of this project proceeds on the assumption that good leaders make good institutes. In young institutes, as are most of those in developing region, we can safely assume that certainly a bad leader will never make a good institute, and in this logic we seek our justification for the program.

It does appear that the region of East Africa is more cohesive and shows the greatest progress, probably as a result of the many decades of consistent assistance to the sciences that has gone there. It would be wonderful to say that networking, which is so critical for oceanographic research, is beginning to show some positive trends. Some are certainly seen in the large regional projects, but we look forward to much higher levels of collaboration especially at the more day-to-day interaction levels.

- ✓ In lieu of hard indicators in the field of Capacity-development, we report via statistics from the workshops of Phase 1 of the project. Parameters chosen reflect the diversity of countries, institutes and directors that attended the workshops.
- ✓ Major interest was also generated in the proposal-writing workshops that transferred skills in drafting proposals for funding. The East African proposal resulted in a number of national spin-off projects, including the ReCoMaP project in Tanzania.
- ✓ We also enumerated actions taken by the participants that flow from the workshop. These are additional results towards Phase 2. These include getting funded projects using DST, Support of decision making for coastal and marine resource management, and training and educational issues. The most impressive set of institutional activities attributable to workshop inputs is in the area of numerical modelling as institutes strove to adopt this tool to enhance their impact in different activities.
- ✓ Finally, there has been important activity in broadening the base for higher education as a key to strong institutes. IOC is supporting several activities in this regard that have been initiated by the region.

V. Lessons learned and Sustainability

The multiple objectives of the project provided some clear and some more subtle lessons, in terms of capacity development leading to increased resourcing and activity which in turn leads to improved decision making. The increase in capacity is a vital outcome in itself, but for it to have a noticeable effect in the management of these target areas, further leverage on resources is required.

The following paragraphs identify the lessons which have been learnt from this work in terms of preparation, delivery and follow-up of the Phase 1 workshops, and then aspects related to the follow on Phase 2 activities promoting self-driven sustainability.

V.1 Lessons learned on workshop preparation in Phase 1

Workshops should be announced well in advance, but plans should remain flexible as late as possible. On several occasions, some of the key participants to our workshops only informed us of their intention to come, or requests for change of dates, very late. Sometimes even the self-sponsored participants that had strong support of their institute only informed us the day before. It appears that in certain settings this is not an unusual behaviour. Our adaptation of implementation to different work cultures, although it often complicated work on our side, was central to the success of several events.

It is difficult but critical to get an institute's highest authority to attend. This person most often has the clearest picture of national priorities and constraints and hence is the best person to guide implementation of subsequent activities. More importantly, the second or third in command will not have the authority to drive change in the institute. For the first directors' workshop in certain regions, we have balanced this with the fact that in several cases, the director would only come to the second workshop, after the second in command came to the first one and convinced him that this was worthwhile. We are trying to be more restrictive in asking that only the directors should attend this first round of advanced leadership workshops.

Very clear messages on the benefits of each event are key to obtain participation of the directors, and the logic of attending 2 or 3 leadership workshops must be clear. We have found that a short and provocative brochure has worked better in getting attention of key people than the more usual official invitations with complex statements of objectives and background documents. The flyer that we are using for the next workshop in Maputo is shown in Annex 5. Some directors, who were most enthusiastic during the first leadership workshop, did not attend the second workshops, sending instead their senior staff in their place. This could have been because they wanted the workshop effects to percolate into the ranks in their institutes. We are now improving our communication to clarify that the workshops address different aspects of a director's tasks and challenges, and reinforce one another.

V.2 Lessons learned on conducting the workshops in Phase 1

Sharing of experience between peers is a critical added value to the directors' workshops. The participants are senior leaders who have a wealth of experience that is of great value to their peers working in similar settings. The directors were encouraged to share their experience and this has worked well for those who came forward to enrich the workshop with their stories, examples and concrete illustration of some of the techniques being taught. But we have found that many other directors, for various reasons including different personalities, have valuable experience that they did not share in that setting. We are thus trying a more

formalised process, with the consultant now coordinating the preparation of directors' sharing of experience on specific topics. We understand that this is a learning experience for all of us.

Workshops are organised to foster networking. Participants express that the workshops are an excellent networking opportunity, especially for the directors' workshops, the team-building workshops, and to some extent the proposal-writing workshops. In certain regions (e.g. Latin America, South East Asia), they do not have many opportunities to interact with their country or regional peers, while in some others (Western and particularly Eastern Africa), the directors know each other quite well. In both cases the leadership workshop provides communication techniques, inspiration and focus on directors' daily challenges that is very different from the usual technical or administrative focussed meetings. These sessions were the most popular with participants and perhaps led them to trust more in the IOC process. We attribute the success of some follow-up activities such as proposal development for regional projects in large part due to the relationships and trust built during the workshops.

Team-building workshops are probably best conducted in the later stages of project development. The team-building workshop in Durban was conducted when much of the bid material was ready. By contrast, the team-building workshop in Cananéia was conducted immediately before the bid-writing workshop. There were some very clear improvements in teamwork practice, with clear benefits to the bid-writing discussions. Overall, however, and given limited funds and time available, it appears the most efficient approach is to conduct the team-building workshops in the latter stages of the project development.

V.3 Lessons learned on follow-up of workshops in Phase 1

The connections after the directors' workshops are weak and the most effective approach is to follow-up with concrete proposal development. Ongoing support and coaching is proposed by the consultant to each participant after every workshop. However, most directors do not seem to have the time to take advantage of this offer. We are also not informed of much activity in terms of directors supporting each other and sharing their experience on issues of leadership and change after the workshops. We have tried to address this in many ways (see Sec III.4) because experience suggests that longer-term coaching as well as communication and support between peers carrying through a change process in their organisation is an important ingredient of successful change in many organisations. As mentioned above, following the leadership workshops with development of proposals seems to be the approach that many directors find most interesting.

Monitoring the effectiveness of leadership workshops has been informal and will remain difficult, while the bid-writing and technical workshops benefits should be easier to evaluate. As mentioned in Sec III.1, it is difficult evaluate the final contribution of leadership development in any field. Successes traceable to workshops are not shared in any systematic fashion – the ones we have learned of have come out by chance. We have also changed the feedback forms from a relatively preset format focussed on the evaluation (scoring) to a more open format that has proved more effective at collecting the information that is most valuable in monitoring, guiding and improving activities. By contrast there are some aspects that are mo readily measurable in terms of benefits from the other components of this project, particularly for the bid-writing, associated project development, and technical workshops.

V.4 Indications of sustainability: self-drive, broadened funding base and integration in Phase 1 and 2

The best evidence of sustainability is much later in the process, perhaps even after project completion, but encouraging signs are already seen. These are that institutes see these activities as worthy of investment of their own funds, that the project does not perpetuate dependency on a single source of funds, that the project activities are well integrated in the institute's own plans for growth, and that in several cases the institutes have pursued our activities objectives on their own (self-drive).

Institute see these activities as a worthy of investment of their own funds:

- *Several organisations have continued leadership development with the same human resources consultant on their own funds*. After participation of one of their leaders in our workshop, the Nairobi Convention hired the same consultant for a leadership workshop for their focal points. The Obafemi Awolowo University in Nigeria has also just concluded a leadership workshop paid for from university funds and with the same consultant. The Environmental Protection Agency in Ghana and the Caribbean Fisheries Mechanism in Belize is conducting an advanced leadership development program in May 2010.
- *Many institutes have funded travel to the second director or to the bid-writing workshops.* In certain cases this proportion was quite high (see Annex 4). This financial ownership, however, may have to be balanced with country representation as mentioned in Sec III.1.
- *Certain participants convinced their higher authority to attend the next workshop*, for example the director of the Institute of Ecology and Environmental Studies of the Obafemi Awolowo University convinced the pro-vice chancellor of the University to sponsor her way to the next directors workshop. This became a wonderful opportunity for pro-vice chancellor to meet with the Principal of the School for Biological and Physical Sciences, University of Nairobi, to investigate further the opportunities for setting-up university incubator funds in bio-technology and other high-tech areas as employment avenues for their graduates.
- *Certain institutes have invested significant resources to host follow-up activities*, for instance the Department of Fisheries and Oceanography of the University of Ghana at Legon or the Instituto Oceanográfico da Universidade de São Paulo invested significant financial and in-kind resources to host the second directors' workshop for Western Africa and the First Team-building and Proposal-writing workshops in Latin America, respectively. This included offering all meals, catering and local transportation (buses), as well as devoting several of their staff to the organisation and support of the event.

The most promising example of sustainable outcome includes the pursuit of modelling by institutes in Eastern Africa. We understand that in many ways was initiated or at least invigorated following the discussions and presentations from modellers at leadership workshops. We have learned of directors obtaining or purchasing necessary software licences, initiation of collaborations with universities and institutes in the United States, India, Portugal and other countries to improve their modelling capacity (see Sec IV.2). Side issues that were discussed at the workshop such as education were taken further by certain institutes. Examples include the organisation of a regional workshop for the development of a regional graduate degree in East Africa, and the many communications in Latin America for stronger inter-university collaborations.

Towards stronger national support: institutes are empowered to bring their science closer to decision-making. We have addressed this through increased quality of science and of its visual outputs (see Sec IV.2 and also part above on the drive for modelling by institutes in East Africa), as well as training in conceiving and conducting projects so that their results are used by communities and decision-makers. These extra steps ensure that science does not

remain on the shelf (an important part of the training in proposal-writing). This is increasing the relevance of institutes to their national priorities, and their ability to provide management solutions useful in the local or national context. The expected increase in national support for these institutes' services should start decreasing dependency on external funds for operations as well as provide for more comprehensive evidence-based decision making in a participatory framework.

Institutes are more effective at competing for international funds. During the proposal-writing workshops, project leaders acquire the skills and know-how of preparing and submitting proposals for national or international funds. Increased capacity to convince funding agencies of the worth of their science/management ideas means more funds for locally or nationally conceived projects for science-based management of the coastal environment and resources. This capacity will be coupled to stronger ownership, higher relevance, self-drive and sustainability of outcomes. Several institutes see these proposal-writing workshops as excellent opportunities and have demonstrated strong initiative in preparing proposals for their own projects.

Activities are integrated in institutional and national plans and priorities. Engaging first with heads of institutes through the leadership workshops has ensured their strong participation in subsequent activities. This ensures that capacities built during the proposal-writing and technical workshops are within the directors' plans for the institute and are therefore used, maintained and built-upon. Since directors are well conversant with current national priorities, their advice on what capacities need to be developed are crucial in this process. IOC workshops also brought together managers of national or regional organisations mandated for the management of the marine environment such as the Nairobi Civention. [A caveat we are discovering is that directors of nationally funded research institutes are much more tuned to national needs than are directors of university marine centres. Also, available policy documents such as those formulated during the Africa process are useful for alignment with priorities, though care has to be taken that such information is not outdated, or of questionable legitimacy. Nothing replaces the discussions organised with directors of institutes].

Continued support ensures stronger sustainability of benefits, as demonstrated by the effectiveness of the Western Indian Ocean Marine Science Organisation (WIOMSA) thanks to long-term support from Sweden. The difference is significant in terms of opportunities when compared to scientists from Western Africa where no equivalent long term sponsor has been working.

Accessible competitive small to medium project and training funds were not available in all regions within the time-line of the project. In terms of project design, it will be useful in future initiatives for project funds to be available after training in bid-writing. This can be pilot project money which partner institutes can competitively apply as part of the project ; this ensures that the skills which have been developed have an initial target to apply to which helps to reinforce the learning which has taken place. Alternaltively, a "twinning" with existing funding sources could be considered. In East Africa funding was obtained through the ReCoMaP EU project and WIOMSA MASMA grants which were available at the appropriate time. These types of funds could be considered for twinning. Approaches should focus on the region and on the priorities identified for capacity development through the earlier leadership/bid-writing workshops. Within any future capacity development initiative, such an approach would be of great benefit to establishing proven capacity and sustainability.

V.5 Summary

The Phase 1 project was designed to be self-contained and provide sustainable results on its own. We have learnt much during this process and have unsuccessfully proposed full support for a Phase 2 based on these learning. Rather than detail the lessons learnt and the level of sustainability expected, it is instructive to summarise how we expect to overcome these barriers. Thus:

- Rather than request support for a continuation of similar activities in the remaining regions, support is being sought for a Phase 2 working with these institutes that have shown a willingness to change their business-as-usual scenarios;
- Even though the director of an institute is the most important player in the system, even the best will have limitations beyond some point. Political will becomes important at the stage where structural changes are needed. Also, if the painful process of change receives the support of the major policy-makers, the process becomes much easier to implement.
- Linking to communities is another angle that needs attention. This link will improve the chances of scientific results being used and making a difference to society.
- Numerical modelling has been very well received, and we need to take this interest further. It provides at once the vehicle to earn funding for institutional work through consultancies, extra earnings for staff, and if approached correctly can present many opportunities to publish as well for education. This is being addressed through institutes undertaking projects with strong capacity development components in this area
- In balance to a possible overemphasis on consultancies institutes need to be trained in the process of incubating small consultancy companies that will carry out routine consultancies. This will have 2 benefits – it will create a layer of entrepreneurs and therefore attract bright students to marine science, whilst ensuring that the skills of national institutes are not wasted on an avalanche of small coastal tasks.
- In East Africa the full pathway, from capacity development to project implementation, has been achieved. The capacity development has led to an increase in availability of funds and enhanced participatory, evidence-based management. This may be the ultimate legacy of the project in more of the target areas, but gestation of such a pathway takes time which may not concur with the timeline of this project.

VI. Evaluation recommendations where applicable

Monitoring and evaluation of our activities in this project was an important issue to us throughout implementation. Contributions of this project to livelihoods, safety and sustainable resources utilisation in the coastal zone are more difficult to trace and quantify. Nonetheless, at the completion time of phase 1, effective contribution (or lack thereof!) should be convincingly demonstrable at least for some of the project components. Phase 2 activities are more objectively verifiable, as project outputs are delivered through projects addressing regional priorities.

We have adapted and improved activities continuously with the information obtained on what works and what doesn't. We have learned in this process and found some of the following guidelines to be useful in the evaluation of this project.

The key evaluation and recommendations are from the intended beneficiary. This evaluation was obtained through feedback forms during the various workshops. As mentioned earlier in Sec V.3, we obtained more information useful to improve implementation with open feedback

forms than with forms with more preset format focussed on evaluation (scoring). This is useful at capturing participants input just after workshop completion. Their evaluation and recommendations a few months afterwards would yield valuable and probably different information, but participants tend to not provide that information in systematic fashion.

Ownership and self-drive, relevance, sustainability are key aspects, as much as the more usual evaluation of impacts. This follows recent recommendations from many organisations working in international cooperation. However, information on these dimension tend to remain qualitative. Other recent work suggests evaluations tend to be more effective when they were designed in participatory fashion between all actors.

The evaluation of the leadership development component is probably the most complex. At this point it appears quantitative information on its effectiveness cannot be obtained in any rigorous way. Nonetheless, feedback forms obtained during workshop provide good information on the appreciation of the participating directors. Visits to institutes and discussions with directors in the months that follow provide important qualitative and anecdotal information on the initiation change (or lack thereof) by the directors. It must be noted that the networking benefits from the workshops may be as important as the material taught and experience shared. These remarks are consistent with the conclusions drawn by several authors on the evaluation of leadership development programmes[1].

Evaluation of the bid-writing component hinges on funds actually raised, but should also consider ownership, participation, self-drive as well as how accurately activities reflect priorities in participating institutes' plans for growth. The bid-writing workshops and associated project development were designed to enhance these latter aspects (guidance from directors, etc.). We have found that degree of self-sponsorship to come to the bid-writing workshop to be a useful indicator of ownership and self-drive. E-mail traffic and contribution of institutes to project development following the workshops is a useful indication of participation. Although an essential task, it will be difficult to measure the enhancement of skills of participants to formulate their ideas into competitive proposals. This will most likely rely on obtaining qualitative information from participants.

The decision support tools, technical workshops and team-building component's key contributions should be in policy and scientific publications. Again, information on relevance, sustainability and other aspects would be best obtained from the recipient institutes and scientists. The impact on this component should be more traceable than for the others.

Final contribution to safety, livelihoods and sustainable resources utilisation in coastal areas will be the most difficult to evaluate, especially for the aspects relating to safety and livelihoods. Sustainable resources utilisation requires the use of decision support tools, and contributions here therefore may be more traceable (for instance, input into local decisions on coastal construction and economic development, pollutant and resources management) but will remain complex to quantify.
Diverse and representative project teams addressing national and regional priorites. Whilst the phase 1 workshops were focused on the scientific sector, many bids which involve human coastal and marine activities or management recommendations cannot be performed effectively from just within the scientific sphere. Consequently, the involvement of the NGO and community sector is of importance in both the proposal writing and project implementation phases. It is certainly the case that some funding is predicated on involvement of these sectors (for example involvement of "non-state actors" was a pre-requisite for the ReCoMaP funded project in Tanzania). This raises many further issues

[1] See for example Marton-Lefèvre, J. and G. Martin Mehers 2007: A look at the LEAD programme as a transformative experience. Futures 39, 619–624, and Blacknell, F. and A. Kennedy, 2004: The Design and Evaluation of a Leadership Programme for Experienced Chief Executives from the Public Sector. Management Learning Vol. 35(2): 181–203

related to suitable translation of scientific concepts and visualisation of data and trends into formats which can be understood by the non-scientific sector. The degree to which translation of information out from the scientific domain is effective is an important factor in developing a functional participatory approach; which is the generally globally accepted model for integrated management.

VII. Visibility: Actions implemented during reporting period

Activities for outreach and visibility to the general public

- Amongst these are included interviews with television and newspapers that were organised by the hosts of the workshops in Libreville (13-16 March 2007) and Accra (1-3 October).

- A short chapter on capacity development, outlining the present Sida-sponsored project, was prepared for the “The Full Picture”, a book published for the Ministerial Summit for the Group on Earth Observation in Cape Town (30 November 2007).

- A short summary of IOC self-driven capacity development was also prepared for the UNESCO General Conference exhibition, Oct 2007.

- Berque, J., E. Desa and G. Ogiogio 2007: Evaluating Effectiveness of Capacity Development in Marine Science Research. The International Journal of Island Affairs (Insula),Special Issue on Marine Protected Areas.Jan.2007,33-46

- Berque, J. and E. Desa, in press: Fifty Years of Building National Marine Skills. In: Troubled Waters; Edited by G. Holland and D. Pugh Ed., Cambridge University Press, 2010

Visibility with decision-makers and ministries

In this category were included the opening of the leadership workshop in Libreville by the Gabonese Minister of Foreign Affairs.

The “Full Picture”, released in Cape Town S Africa, has been distributed to many ministries and decision-makers around the world, and the work under this project was described in a chapter there titled “The Business of Capacity-development”. This publication should also contribute to visibility of this project with decision-makers.

In the lead up to the Climate Change Conference (COP15) the African Union Commission, with support of UNESCO/IOC and the network of marine institutions involved in the project undertook a number of preparatory activities. They highlighted to member states the increasing costs attributed to climate change impacts on the coastal zones. Presentations and discussions during consecutive AMCEN meetings in both Nairobi and Addis raised awareness on this topic, resulting in a request for support in preparation for COP15. Subsequently, support was provided to African ministers and negotiators in preparation for COP15 (December 7-18, 2009). This included expert advice and documents at meetings before the conference, and coordination of a team of African experts at COP15. The basic document was prepared by a contributing author to IPCC 7 report, Pamela Aboudha, a scientist formerly at Kenya Marine Fisheries Research Institute (KMFRI), Kenya. She prepared a report: ‘The African Science-Base for Coastal Adaptation: A Continental Approach. A report to the African Union Commission (AUC) at the United Nations Climate Change Conference in Copenhagen (7-18 December 2009). List of acronyms on Annex II.

All awareness raising workshop on modelling undertaken during the second phase of activities in East and West Africa, and each project-providing scientific information to decision makers, included an outreach or stakeholder interaction component as part of the workshops conducted. This involvement of stakeholders was considered as an important factor to include for a number of reasons. Firstly the stakeholder work provided a context to the modelling work by developing an appreciation of the uses and perceived problems of the area. Secondly, it provided a focus for the type of results which could be developed form the model in terms of actual problems in the area as identified from stakeholder consensus. Thirdly and finally, it provided an avenue by which modelling results could be discussed and visualised in a stakeholder forum and provide feedback on the style and detail of the model outputs.

At least 15 participants were involved at each of these training or project meetings totalling more than 135. They were:

- Modelling Awareness Workshop in Mozambique - hosted by INAHINA (11-22 February 2007);
- Modelling Awareness Workshop in Kenya - hosted by KEMFRI (23 February – 3 March 2007);
- Modelling Awareness Workshop in Tanzania - hosted by IMS/University of Dar es Salaam (5 March – 14 March 2007);
- Kenya: Malindi project - sea level rise and flooding (Kenya Meteorological Department - KMD), 2009;
- Kenya: Shimoni project - fisheries habitats (Kenya Marine and Fisheries Institutes – KMFRI), 2009;
- Mozambique: Bon Sinais project - water quality (University of Eduardo Mondlane School of Marine and Coastal Sciences - UEM/ National Institute for Hydrography and Navigation - INAHINA), 2009;
- Mozambique: Beira project - dredging and sediments (INAHINA/UEM), 2009;
- Seychelles project: Fisheries habitats (Seychelles Fisheries Authority – SFA), 2009;
- Stakeholder analysis and coastal futures workshop, Jambiani, Zanzibar, Tanzania, November 2009

In addition, the COASTMAP-IO project jointly undertook a modelling awareness raising activity with the CD programme in Oct/Nov 2008, held in INCOIS, Hyderabad, India. Five potential users of models attended the workshop which is included in Table 4.

Preliminary hydrodynamic models of the Bay of Maputo, Mombassa, and the Zanzibar channel were described at the WIOMSA Scientific Symposium in Durban, Oct 2007, with IMS demonstrating the use of the model to predict pollutant transport and erosion phenomena in the Zanzibar channel. The 6 projects in East Africa each have undertaken publishable research and each included a plan for scientific dissemination through peer reviewed journals.

Sida-sponsored IOC activities were presented in many meetings and discussions to colleagues working in international cooperation, Earth or marine observations and sciences, tsunami warning and mitigation systems.

VIII. Next phase

The excellent and enabling support from Sida allowed the IOC to launch the Capacity-development implementation program that was approved by the 23rd Assembly. Workshops' participants perceived the implementation as a sustainable approach to developing capacity in marine sciences research and observations. Unfortunately, the Phase 2 proposal, sent in mid-2009, has yet to be approved by Sida. Its implementation would have allowed science institutes to close the links to their decision makers and coastal communities.

In the interim too, IOC has not been able to maintain the human resources necessary to continue the Phase 2 implementation.

These two factors of funds and human resources make the prospects of assisting developing member states to meet their national priorities through robust science offered to decision makers and communities, fairly remote.

Capacity-development, without debate, requires long-term commitment, and termination of a process after 4 years may not be an optimum way of developing capacity in the very difficult conditions that institutes, their directors, and scientific staff operate in the developing world.

Yet we hope that the impact of our workshops will continue to resonate in the minds of the directors we had the honour of interacting with. Our hope too that the excitement that our Decision Support Tools generated in our science colleagues in developing regions will continue to stir that curiosity that is the hall-mark of true Self-drive.

IX. ANNEXES

Annex I: Project Outputs

LEADERSHIP DEVELOPMENT WORKSHOPS

II.2 Tabulation of Project Activities in reporting period

Place, date and workshop type	National Directors and scientists and institutes attending	Outcome
Kingston, Jamaica 12-15 September 2006 *First Leadership workshop*	**Directors from:** **Trinidad and Tobago:** Institute of Marine Affairs; and University of West Indies **Barbados:** Barbados-Caribbean Institute for Meteorology and Hydrology; Caribbean Conservation Association **Jamaica:** Discovery Bay Marine Lab; and National Environmental and Planning **Nigeria:** Institute for Oceanography and Marine Research **Scientists from:** Papua New Guinea -Department of Mining Portugal	Participants met with objective to nurture a network of highly influential leaders who can integrate regional and local initiatives in a manner that builds sustainable outcomes which deliver high impact; and to create an opportunity for personal learning and renewal
Zanzibar, Tanzania 25-28 October 2006 *Second Leadership Workshop*	**Directors from:** **South Africa:** Marine and Coastal Management **Tanzania:** Institute of Marine Science, University of Dar es Salaam **Institutions represented :** **Kenya:** Coast Development Authority **Mauritius:** Oceanographic Institute **Mozambique:** School of Marine Science Eduardo Mondlane University **Seychelles:** Centre for Marine Research and Technology and Marine Parks Authority (SCMRT-MP) **South Africa:** Marine and Coastal Management **Tanzania:** Institute of Marine Science, University of Dar es Salaam	Participants met together to consolidate and reinforce the leadership competence and proficiency acquired during Module One (Maputo, late 2005); to extend the learning by focusing on practical ways to improve performance, relevance and impact; and to provide new opportunities for personal growth and networking. One session was dedicated to formulating the groundwork for the Proposal Writing Workshop
Havana, Cuba 28 Nov-4 Dec 2006 *Second Leadership workshop*	**Directors from:** **Brazil:** UNESP Aquaculture Center (CAUNESP), São Paulo State University **Colombia:** Centro de Investigaciones oceanográficas et Hidrográficas (CIOH) **Cuba:** Ministerio de Ciencia, tecnología y Medio AmbienteCiudad de la Habana **Argentina :** Consejo Nacional de Investigaciones Cientificas y Tecnicas (CONICET) and Centro Austral de Investigaciones Ushuaia **Chile:** Universidad Católica del Norte **Peru:** Instituto del Mar del Peru (IMARPE) **Mexico:** CICESE (Centro de Investigacion Cientifica y de Educacion Superior de Ensenada **Scientist from:** Ecuador	Participants met together to agree on ways to carry forward the self-driven capacity development process. 2 sessions were also dedicated to formulating the groundwork for the Proposal Writing Workshop.

Place, date and workshop type	National Directors and scientists and institutes attending	Outcome
Bangkok, Thailand 28 Feb-03 March 2007 *First Advanced Leaders*	**Directors from:** **China:** Second Institute of Oceanography, SOA **Philippines:** Marine Science Institute of University of the Philippines; Council for Aquatic and Marine Research and Development **Timor-Leste:** Civil Protection Directorate, Ministry of Interior **Thailand:** Phuket Marine Biological Centre, Department of Marine and Coastal Resources **Institutions represented:** **Indonesia:** Research Centre for Oceanography of Indonesian Institute of Sciences (LIPI); Ocean Dynamics Program, Technology Center for Marine Survey Agency for Technology [BPPT] **Japan:** Asian Natural Environmental Science Center,University of Tokyo **Malaysia:** National Oceanography Directorate, Ministry of Science Technology &Innovation **Singapore:** Natural Sciences and Science Education (NIE7-03-88); National Institute of Education and Anyang Technological University **Scientists from:** Republic of Korea	Participants met for the first time in a forum dedicated for Capacity-development. The foundations of good leadership were discussed and provided opportunities for sharing and networking.
Libreville, Gabon 13-16 March 2007 *First Advanced Leaders*	**Directors from:** **Benin:** CRHOB (Centre de Recherche Halieutiques et Océanologiques du Benin) **Cameroun :** CERECOMA (Centre Spécialisé de Recherche sur les Ecosystèmes Marins) **Cote d'Ivoire :** Centre de Recherches Océanologiques **Ghana:** University of Ghana Legon,Marine Fisheries Research Division **Haiti :** Ministère de l'Environnement **Nigeria:** Institute for Oceanography and Marine Researches (NIOMR) **Institutions represented:** **Congo :** Laboratoire d'océanographie physique Centre IRD- DGRST **Gabon :** Ministre de l'environnement, de la protection de la nature et de la ville **Senegal :** Centre de Recherches Océanographiques de Dakar-Thiaroye **Togo :** Université de Lomé **Scientistes from :** Angola Guinea Namibia	As above

Place, date and workshop type	National Directors and scientists and institutes attending	Outcome
Accra, Ghana 1-3 October 2007 *Second Advanced Leaders*	**Directors from:** **Ghana:** Environmental Protection Agency; Centre for Scientific and Industrial Research-Water Research Institute **Benin :** Centre de Recherche Océanologiques du Benin **Cote d'Ivoire** : Centre de Recherches Océanologiques **Gabon :** Direction General du Droit de la MER **Nigeria:** Institute for Oceanographic and Marine Sciences Lagos **Senegal** : Centre de Researches Océanologiques de Dakar Thiaroye /ISRA **Scientist from :** Cameroun Guinea Portugal Togo	Participants met for the second time (or first time for some of them). Experience was shared on application of techniques from the first workshop and priorities in capacity development in the region agreed upon
Maputo, Mozambique 10-14 April 2008 *Third Advanced Leaders*	**Directors from:** **Cameroon:** Specialized Research Centre for Marine Ecosystems **China:** Second Institute of Oceanography; State Oceanic Administration **Comoros :** Centre National de Documentation & de Recherche Scientifique **Kenya:** School of Biological Sciences, University of Nairobi **Korea:** Ocean Research and Development Institute **Madagascar :** Centre National de Recherche sur l'Environnement **Mauritius :** Oceanography Institute (MOI) France Centre **Mozambique:** School of Marine and Coastal Sciences, Eduardo Mondlane **Nigeria:** Environmental Science Laboratory; Institute of Ecology & Environmental Studies **Tanzania**: Institute of Marine Sciences, University of Dar es Salaam **Scientist from:** Ghana	Workshop for Heads of Marine related institutions and senior role models for the WIO Region brought together 27 Heads of institutions and senior role models: to renew, update and extend leadership competences; to review plans for future development; to interact with and learning from peers, to strengthen institutional and regional networks.
Hyderabad, India 10-14 May 2008 *First Advanced Leaders*	**Directors from:** **Bangladesh:** Institute of Marine Sciences and Fisheries University of Chittagong **India:** National Centre for Ocean Information Services(INCOIS) **Malaysia:** Borneo Marine Research Institute; University of Malaysia Sabah **Maldives:** Department of Meteorology **Mauritius:** Hydrographic Unit **Thailand:**Hydrographic Department, Royal Thai	First workshop for directors of marine-related institutions in the central Indian Ocean region (IOCINDIO), with a focus on organisations related to the Indian Ocean Global Ocean Observing System (IOGOOS). The workshop focused on methods and best practices to work and grow directors'

Place, date and workshop type	National Directors and scientists and institutes attending	Outcome
	Navy **Oman:** Department of Marine Science and Fisheries **Scientists from:** Seychelles Sri Lanka United Arab Emirates	performance in leading their organisation.

PROPOSAL-WRITING WORKSHOPS

Place, date and workshop type	Countries attending	Outcome
Mombasa, Kenya 16–20 April 2007 *First Proposal-writing*	**Directors from:** NIL **Institutions represented:** **Kenya:** Marine & Fisheries Research Institute; Kenya Meteorological Department **Mauritius:** Oceanography Institute France Centre **Mozambique:** School of Marine and Coastal Sciences, Eduardo Mondlane University **Tanzania:** University of Dar Es Salaam, Institute of Marine Sciences **Scientist from:** Seychelles	Participant's activities focused on improving personal skills in bid writing to be applied within their own institutions. Workshop output was a framework for a regional proposal to external agencies. See relevant results sections for projects and fellowships following this.
Sabah, Malaysia 10-14 December 2008 *First Proposal-writing*	**Directors from:** **Malaysia:** NOD-MOSTI 62662 Putrajaya; Malaysian Meteorological Department ; Borneo Marine Research Institute **Bangladesh**: Institute of Marine Sciences and Fisheries University of Chittagong **Seychelles:** Hydrographic Brigade, Seychelles Coastguard **Vietnam:** Department of Integrated Research; Institution of Strategy and Policy on Natural Resources and Environment (ISPONRE) **Institutions represented:** **India:** School of Industrial Fisheries, Cochin University of Science & Technology, **Indonesia:** University of Borneo; Indonesia/ Borneo Marine Research Institute; UMS **Japan:** Kinki University; Japan/Borneo Marine Research Institute; UMS **Sri Lanka**: National Aquatic Resources Research &Development Agency (NARA) **Tanzania:** University of Dar es Salaam **Thailand**: Marine and Coastal Resources Research Center (Samutsakhon); and Department of Marine and Coastal Resources	Bid-writing workshop for IOCINDIO/WESTPAC region Malaysia) involving 10 countries, focused on developing competitive transboundary project proposals for the region.

Place, date and workshop type	Countries attending	Outcome
S. Paulo, Brazil 10-13 December 2007 *First Proposal-writing*	**Directors from:** **Brazil:**Instituto Oceanografico da USP **Cuba:**Instituto de Oceanologia(CEBIMAR);Centro Investigaciones Pesqueras **Institutions represented:** **Chile:** Universidad Católica del Norte **Colombia:** Comision Colombiano del Oceano **Cuba:**Instituto de Oceanologia,CEBIMAR Centro Investigaciones Pesqueras. Ciudad Habana. Cuba **Scientists from :** Argentina Mexico	Participant's activities focused on improving personal skills in bid writing to be applied within their own institutions. Workshop output was a framework for a regional proposal to external agencies.

TEAM-BUILDING WORKSHOPS

Place, date and workshop type	Countries attending	Outcome
Accra, Ghana 26-28 September 2007 *First Team-building*	**Directors from:** **Ghana** **Institutions represented:** Ghana -MLGRDE, MDPI, EPA-Teams.	This workshop focussed on Ghanaian institutes that dealt with environmental issues in the coastal zone. Participants received hands-on practical exercises to address challenges of team building – an important aspect if the environment is to be addressed holistically.
Durban, South Africa 28–31 October 2007 *First Team-building*	**Directors from:** **NIL** **Institutions represented:** **South Africa**: Institute for Aquatic Biodiversity **Kenya:** Fisheries Department, Coast and Marine. **Mauritius:** Oceanographic Institute **Mozambique:** INAHINA; School of Marine and Coastal Sciences **Seychelles:** Seychelles Fishing Authority **Tanzania:** University of Dar Es Salaam, Institute of Marine Sciences; TIFIRI; and WIOMSA	Participants from the region trained on hands-on practical exercises to address challenges of team building. The draft regional proposal developed earlier in Mombasa was used as a case study.
S. Paulo, Brazil 5-8 December 2007 *First Team-building*	**Directors from:** **Brazil:** Instituto Oceanográfico da USP **Cuba:**Instituto de Oceanologia; Aquario Nacional Cuba; CEBIMAR and Centro Investigaciones Pesqueras.	As above

Place, date and workshop type	Countries attending	Outcome
	Institutions represented: **Chile:** Universidad Católica del Norte **Colombia:** Comision Colombiano del Oceano **Scientists from:** Argentina, and Mexico	

PHASE II: DECISION SUPPORT TOOLS ADDRESSING NATIONAL PRIORITIES

Place, date and workshop type	Countries attending	Outcome
Maputo, Mozambique 11-22 February 2007 *Training in modelling*	**Institutions represented**: **Mozambique**[1] : Instituto Nacional de Hidrografia e Navegação (INAHINA); School of Marine and Coastal Sciences, Eduardo Mondlane University; and INAMAR	As above
Mombasa, Kenya 23 February-03 March 2007 *Training in modelling*	**Institutions represented**: **Kenya**[1] : National Environmental Management Authority; Coastal Development Authority; CORDIO East Africa ; KIMFRI; University of Dar es Salaam ; and University of Nairobi	Expert visit show-cased possibilities offered by coastal modelling tools as Decision Support Tools and ran case studies chosen by institutes.
Zanzibar, Tanzania 5-14 March 2007 *Training in modelling*	**Institutions represented**: **Tanzania**[2] : University of Dar es Salaam; Institute of Marine Sciences; Tanzania Fisheries Research Institute; National Environment Management Council(NEMC);Tanzania Meteorological Agency; and WIOMSA	As above
Pointe Noire, Congo 06-10 October 2008 *Raising awareness for regional actions on marine issues*	**Directors from:** **Cameroun:** Specialized Researches Centre for Marine Ecosystems (MINRESI-IRAD Centre spécialisé de Recherche sur les écosystèmes marins) **Gabon:** CENAREST/MRDT ; Laboratoire de Gestion des Risques et des Espaces Humides; and Centre National des Données et l'Information Océanographiques (CNDIO) **Congo**: Centre DGRST/IRD **Scientists from :** Cote d'Ivoire ; Ghana ; Congo RDC	A high-profile meeting in Loango, Congo, brought together coastal dwellers and community representatives, traditional chiefs, ministry representatives and 2 Ministers, as well as regional and international scientists to map the way forward for a regionally coordinated approach to managing coastal erosion in Central Africa.

Place, date and workshop type	Countries attending	Outcome
Nairobi, Kenya 24 Nov-05 Dec 2008 *Training in modelling*	**Institutions represented**: **Kenya:** KIMFRI ; Kenya Meteorological Department **Madagascar:** Centre National de Recherches sur l'Environnement (CNRE) **Mozambique:** Instituto Nacional de Hidrografia e Navegaçao (INAHINA) **Seychelles:** Fisheries Oceanographer and Seychelles Fishing Authority **Tanzania:** Institute of Marine Sciences, University of Dar es Salaam, **Scientist from:** Rwanda	Decision Support Tools (DST) workshop - 17 participants from 6 countries were trained as trainers on hydrodynamic modeling. Draft models developed for 8 pilot sites in the 6 countries, with identified management issues to be addressed. This included collation of data required for modelling at all sites.
Cartagena, Columbia 18-21 November 2008 *Raising awareness for regional actions on marine issues*	**Directors from:** NIL **Institutions represented:** **Argentina :** Centro de Geología de Costas Facultad de Ciencias Exactas y Naturales Universidad Nacional del Mar del Plata **Chile:** Departamento de Ingeniería Hidráulica y Ambiental Pontificia Universidad Católica de Chile **Cuba:** Instituto d'Oceanología de Cuba **Ecuador**: Ministerio del Ambiente Edificio Ministerio de Agricultural **Mexico :** Universidad Nacional Autónoma de México **Panama :** Autoridad Marítima de Panamá Oceanografo en Ingeniero en Economía del Transporte Marítimo **Peru:** Agregado Naval del Peru **Spain :** Laboratori d'Enginyeria Marítima, ETSECCPB Universitat Politècnica de Catalunya **Scientist from:** Colombia	Scientific seminar and project development workshop on the science-base for regionally coordinated actions on managing coastal erosion in the context of environmental changes. 12 coastal erosion experts from 9 countries met to exchange experience and identify avenues for regional collaboration.
Hyderabad, India 27 Oct– 07 Nov 2008 *Training in modelling*[3]	**Directors from:** **India:** Hydrographic Data Management, INCOIS **Myanmar:** Department of Meteorology and Hydrology Ministry of Transport	Workshop on Remote Sensing for participants from the Indian Ocean GOOS region. These participants were trained in remote sensing for coast-line mapping and ocean colour that would be used in developing proposals for pilot projects in Coastal Keystone

Place, date and workshop type	Countries attending	Outcome
	Institutions represented: **Bangladesh:**Hydrographic Directorate of Bangladesh Navy **Comoros:** CDNO/CNDRS National Agency of Oceanographical Data **Maldives:** Department of Meteorology Hulhule' **Myanmar:** Department of Meteorology and Hydrology Ministry of Transport **Seychelles:** Centre for GIS Seychelles **Sri Lanka:** National Hydrographic Office **Tanzania:** Tanzania Meteorological Agency and University of Dar es Salaam **Thailand:** Hydrographic Department Royal Thai Navy **Scientists from:** Madagascar; Malaysia; Mauritius	Ecosystems, Coastal Shoreline Changes and Chlorophyll-a Mapping.
Quelimane, Mozambique 31 Aug-05 Sept 2009 *Training in modelling*	**Directors from:** **Mozambique:** Universidad Eduardo Mondlane, School of Coasts and Marine Sciences; and Instituto Nacional de Hidrografie Navegacao (INAHINA)	Workshop on hydrodynamic modelling for stakeholders of the WIO Region, 1st workshop - development of projects from Mozambique. Implementation of hydrodynamic modeling projects addressing stakeholder needs, in Mozambique (2). Results thus far include: Data collected, initial model developed and scientific report prepared on hydrodynamics modeling projects for stakeholders at sites. Training of 13 participants from Mozambique. Analysis of stakeholder needs and presentation of results to stakeholders (5+institutions/organizations at each site) in each country.
Mombasa, Kenya 07-12 September 2009 *Training in modelling*	**Directors from:** NIL **Institutions represented:** **Kenya:** Kenyan Marine and Fisheries Research Institute (KMFRI) **Seychelles:** Seychelles Fisheries Authority (SFA)	Workshop on hydrodynamic modelling for stakeholders of the WIO Region, 2nd workshop - development of projects from Kenya and Seychelles. Implementation of hydrodynamic modeling projects addressing stakeholder needs, in Kenya (2), and Seychelles (1). Results thus far include: Data collected, initial model developed and scientific report prepared on

Place, date and workshop type	Countries attending	Outcome
		hydrodynamics modeling projects for stakeholders at sites. Training of participants from Kenya (7), and Seychelles (1). Analysis of stakeholder needs and presentation of results to stakeholders (5+institutions/organizations at each site) in each country.
Zanzibar, Tanzania 09-21 November, 2009 Modelling coastal change workshop *ReCoMaP project*[4]		First year of the ReCoMaP project: *Empowering NSAs in Tanzania to Plan for Sustainable Coastal Livelihood using Decision Support Tools*. Results thus far include: Data collected, model developed and scientific report prepared on hydrodynamics of Jambiani Coast, Zanzibar; Training of 10 participants involved in hydrodynamic modelling in Tanzania through workshop
Zanzibar, Tanzania 16-20 November, 2009 First Stakeholder workshop on Future coastal change *ReCoMaP project*[4]		First year of the ReCoMaP project: *Empowering NSAs in Tanzania to Plan for Sustainable Coastal Livelihood using Decision Support Tools*. Results thus far include: Stakeholders analysis and participatory management addressing issues in coastal liveli-hoods in Jambiani, Zanzibar; Training of 10 trainers for participatory management workshop on stakeholder analysis; 38 participants attended the workshop led by these trainers.
Kribi, Cameroon 23-27 November 2009 *Training in modelling*[5]	**Directors from:** **Angola:** National Institute for Fisheries Research (INIP) **Cameroun:** Institut National de Cartographie (INC) **Institution represented:** **Gabon:** Centre National des Données et de l'Information Océanographiques (CNDIO) **Scientists from :** Congo; and RDC	Awareness raising and data collection workshop in the IOCEA region with 13 participants from 5 countries trained in modelling. One portable tide gauge was installed in the port of Kribi and Cameroonian colleagues trained in its use. GPS-echo sounders were provided to Cameroon, Congo, and Gabon for use by Central African scientists to survey coastal bathymetry.

Place, date and workshop type	Countries attending	Outcome
Nairobi, Kenya; **Addis Ababa, Ethiopia; and** **Copenhagen, Denmark** April to Dec. 2009 Raising awareness of decision makers on impacts of Climate-change on Africa's coastal zones.	**Ministers involved:** The African Union Commission, Science and Technology Department, invited the IOC of UNESCO to present the case for science in the negotiating process on Climate-change. IOC invited and briefed an eminent African scientist/decision maker in each case to make a presentation to the African Ministers Conference on Environment. At two special sessions in Nairobi (and Addis Ababa invited of	
Note 1 In November and December 2007 two researchers from Mozambique and Kenya undertook fellowships at the National Institute of Oceanography (NIO), India to further develop hydrodynamic models for the harbours of Mombasa, Kenya and Maputo, Mozambique. Further fellowships in 2008 included researchers from Tanzania and Seychelles undertaking hydrodynamic modelling projects with NIO and with the Centre for Water Research, Australia. All fellows lead the Kenya regional training workshop through a "trainers of trainers" approach.		
Note2 From April 17 to July 22, 2007, a USA coastal modeller funded by NSF, USA, visited the Institute of Marine Science in Zanzibar. The goal of this visit was to continue training in hydrodynamic modelling: developing a model of circulation of the Zanzibar channel and training junior scientists in setting-up, running and applying this model. Extension of this collaboration has proceeded beyond 2008-2009.		
Note 3 With COAST-MAP-IO (Coastal Mapping in the Indian Ocean)		
Note 4 With ReCoMaP (2009-2010)		
Note 5 With FUST (Flanders-UNESCO Funds-in-Trust)		

Annex II: List of acronyms

AMCEN	The African Ministerial Conference on the Environment
COP 15	Climate Change Conference 15,Copenhagen 7-18 December 2009
CD Programme	Capacity Development Programme, IOC/UNESCO
DHI	Danish Hydrological Institute, Denmark
IOC/UNESCO	Intergovernmental Oceanographic Commission of United Nations Educational, Scientific and Cultural Organization
INAHINA-Mozambique	National Institute for Hydrology and Navigation-Mozambique
IMS-Tanzania	Institute of Marine Science, University of Dar-es Salaam, Tanzania
IPCC 7	Intergovernmental Panel on Climate Change 7
KEMFRI	Kenya Marine and Fisheries Research Institute
KMD	Kenya Meteorological Department
NEPAD COSMAR	The New Partnership for Africa's Development -Coastal and Marine Secretariat
ReCoMaP	Regional Coastal Management Programme of the Indian Ocean
SFA-Seychelles	Seychelles Fishing Authority
UEM-Mozambique	University of Eduardo Mondlane, School of Marine and Coastal Sciences
WAPMERR	World Agency of Planetary Monitoring and Earthquake Risk Reduction
WIOMSA	Western Indian Ocean Marine Science Association

Annex III: List of all reports and publications undertaken through the project

The reports for each of the workshops and projects, as well as published material, would make this document to large. All outputs are listed below as Annexes. Workshop reports can be obtained from the calendar on the IOC capacity development website, http://www.ioc-cd.org as well as downloaded through the website under the relevant page describing the activity. Any document can also be obtained from IOC directly upon request, and were made available through the previous progress reports.

2005

1. IOCWIO REGION: First Leadership Workshop, Maputo, Mozambique, 29 Oct to 1 Nov 2005; (conducted with IOC Regular Programme budget).

2006

2. IOCARIBE REGION: First Advanced Leadership Workshop, Kingston, Jamaica, 12 to 15 September 2006.
3. IOCWIO REGION: Second Advanced Leadership workshop, Zanzibar, United Republic of Tanzania, 25 to 28 October 2006.
4. IOCARIBE REGION: Second Advanced Leadership workshop, La Havana, Cuba, 28 Nov to 4 Dec 2006.

2007

5. IOCWIO REGION: UNESCO/IOC Western Indian Ocean Modelling Awareness Workshops: Mozambique - hosted by INAHINA (11-22 February 2007); Kenya - hosted by KEMFRI (23 February - 3 March 2007); Tanzania - hosted by IMS/University of Dar es Salaam (5 March – 14 March 2007).
6. IOCWIO REGION: Western Indian Ocean: Bid writing workshop - Part of the UNESCO / IOC Capacity Development Programme, Mombasa, 16-20th April 2007.
7. IOCWIO REGION: Durban 2007 Team Building Workshop for the Western Indian Ocean Region – (*information on webpage)*.
8. IOCEA REGION: Leadership Development Workshop and Discussion on Marine Action Planning, Libreville, Gabon, 13-16 March 2007.
9. IOCEA REGION: Second Leadership Workshop for the East Atlantic, Accra, Ghana, 1-3 October 2007.
10. IOCARIBE REGION: Latin America: Bid writing workshop - Part of the UNESCO/IOC Capacity Development Programme, Cananeia (Sao Paulo), Brazil, 10-13th December 2007.
11. WESTPAC REGION: Report on First IOC Capacity-development Leadership Programme for Directors and senior role players of marine science institutes in the WESTPAC region, Bangkok, Thailand, 28 February to 3 March 2007.
12. Over-view of Capacity-development Program of Work [Regional distribution].
13. Typical Estimates for Workshops.
14. Participation statistics, 2007 leadership workshops.
15. Self-sponsorship to 2007 workshops.
16. Brochure for final directors' workshop for the Western Indian Ocean region.
17. Desa, E., J. Berque and others 2007: The Business of Capacity Development. In The Full Picture,

18. Group on Earth Observations, Ed., Tudor Rose Pub., 243-245.

19. Berque, J. and E. Desa 2007: Building Capacity in Coastal States. Marine Scientist, 19, 2007, 24-26.

20. Berque,J E. Desa and G. Ogiogio 2007: Evaluating Effectiveness of Capacity Dev elopment in Evaluating Effectiveness of Capacity Development in Marine Science Research. The International Journal of Island Affairs (Insula), Special Issue on Marine Protected Areas. Jan. 2007, 33-46.

21. Fifth WIOMSA Scientific Symposium in Durban, 22-26 October 2007.

2008

22. IOCWIO REGION: Fourth Advanced Leadership workshop, Maputo, Mozambique, 10-14 April 2008.

23. IOCINDIO/WESTPAC REGION: First Advanced Leadership Workshop for Heads of Institutes, Hyderabad, India 10-14 May 2008.

24. IOCEA REGION: Rapport final de l'atelier sous regional sur l'erosion côtiere afrique centrale, République du Congo, Loango (Pointe-Noire), Congo, du 06 au 10 octobre 2008.

25. IOCARIBE REGION: Taller sobre la erosión costera en la regíon de américa latina y el caribe, Cartagena, Colombia, 18-21 de noviembre de 2008.

26. IOCINDIO/WESTPAC REGION: Training Programme on Tsunami Modeling, Inundation Mapping and Remote Sensing, Course Report, Hyderabad, India, October 27- November 07 2008.

27. IOCWIO REGION: Hydrodynamic Modelling in the IOCWIO Region, Nairobi, Kenya, 3-10 December 2008.

28. IOCINDIO/WESTPAC REGION: IOGOOS – SEA-GOOS: Bid writing workshop Part of the UNESCO/IOC Capacity Development Programme. Kota Kinabalu, Sabah, Malaysia, 10-14 December 2008.

2009

29. IOCEA REGION: Rapport de l'atelier COI/UNESCO-CERECOMA/IRAD/MINRESI sur le renforcement des capacités en modélisation et gestion du littoral, Kribi, Cameroun, 23 au 27 novembre 2009.

30. IOCWIO REGION: Report on modelling for Stakeholders 1, Quelimane, Mozambique, August-September 2009 and modelling for Stakeholders 2, Mombasa, Kenya, September 2009. This workshop supported the development of the following projects with separate reports available:
    - Kenya: Malindi - sea level rise and flooding (Kenya Meteorological Department - KMD)
    - Kenya: Shimoni - fisheries habitats (Kenya Marine and Fisheries Institutes – KMFRI)
    - Mozambique: Bon Sinais - water quality (University of Eduardo Mondlane School of Marine and Coastal Sciences - UEM/ National Institute for Hydrography and Navigation - INAHINA)
    - Mozambique: Beira - dredging and sediments (INAHINA/UEM)
    - Seychelles: Fisheries habitats (Seychelles Fisheries Authority – SFA).

31. IOCINDIO/WESTPAC REGION: COAST-MAP-IO workshop on drafting project Proposals to International Financial Agencies November 04-07, 2009.

32. IOCWIO REGION: Modelling erosion and shoreline changes along Jambiani coast, Zanzibar, Tanzania, November, 2009.

33. IOCWIO REGION: Report on stakeholder analysis and coastal futures workshop, Jambiani, Zanzibar, Tanzania, November 2009.

34. Berque, J. and E. Desa, in press: Fifty Years of Building National Marine Skills. In: Troubled Waters. G. Holland and D. Pugh Ed., Cambridge University Press.

35. Berque, J., and D. Travin 2009: COAST-MAP-IO: An IOC Project on Improving Emergency Response to Ocean-Based Extreme Events Through Coastal Mapping Capacity Building in the Indian Ocean, Hydro International, 13, 7.

36. Biennial Report on Activities undertaken by the IOCWIO office, 2008-2009.

Annex IV: Table of Self –Sponsorship to Workshops

SELF-SPONSORSHIP TO WORKSHOPS (IN %)

Number of out-of-country participants by country (column 2), whose travel was paid by their institute (columns 3 and 4), and whose travel was paid by another source than IOC or the participants' institute (column 4 and 5). See following tables for details and information on the other funding sources.

2006 Workshops

Workshop	**Number of Participants**	**Participants whose institute paid their travel**		**Participants whose travel was paid by other source**	
		Number	%	Number	%
Eastern Africa – Second leadership, Zanzibar	17	1	6%		
Latin America – First leadership, Kingston	15	6	40%	0	
Latin America – Second leadership, Havana	23	4	17%	0	
Total	**55**	**11**	**20%**	**0**	

2007 Workshops

Workshop	**Number of Participants**	**Participants whose institute paid their travel**		**Participants whose travel was paid by other source**	
		Number	%	Number	%
South-East Asia – First leadership, Bangkok	15	6	40%	0	0
Western Africa – First leadership, Libreville	19	0	0	4.5	24%
Western Africa – Second leadership, Accra	15	1.5	10%	0	0
Eastern Africa – Bid-writing, Mombasa	17	9	53%	8	47%
Eastern Africa – Team-building, Durban	13	7	54%	6	46%
Latin America – Team-building and bid-writing, Cananéia (Sao Paulo)	14	6	43%	1	43%
Total	**93**	**29.5**	**32%**	**19.5**	**21%**

2008 workshops

Workshop	**Number of Participants**	**Participants whose institute paid their travel**		**Participants whose travel was paid by other source**	
		Number	%	Number	%
Eastern Africa *Third Advanced leadership, Maputo*	24	6	25%	3	13%
South-East Asia / Indian Ocean – *First Advanced leadership, Hyderabad*	11	0		0	

Workshop	Number of Participants	Participants whose institute paid their travel		Participants whose travel was paid by other source	
		Number	%	Number	%
Western Africa – Raising awareness for regional actions on marine issues, Pointe Noire	9	0		0	
Eastern Africa Training in modelling, Nairobi	9	0		9	100%
Latin America – Raising awareness for regional actions on marine issues, Cartagena	8	0		0	
South-East Asia / Indian Ocean – Training in modelling, Hyderabad	16			13	81%
South-East Asia / Indian Ocean – First Proposal-writing, Sabah	17	5	29%	1,5	9%
Total	***108***	***11***	***11%***	***26,5***	***25%***

2009 Workshops

Workshop	Number of Participants	Participants whose institute paid their travel		Participants whose travel was paid by other source	
		Number	%	Number	%
Eastern Africa – Modelling coastal change workshop (ReCoMaP project), Zanzibar	*12 National participants*			*All national participants*	
Eastern Africa – First Stakeholder workshop on Future coastal change (ReCoMaP project), Zanzibar	*40 National participants*			*All national participants*	
Eastern Africa- Training in modelling, Quelimane	*13 National participants*	*All national participants*			
Eastern Africa – Training in modelling, Mombasa	*1*	*1*	*100%*		
Western Africa – Training in modelling, Kribi	*7*	*0*		*0*	
Total	***8***	***1***	***13%***		

SELF-SPONSORSHIP TO WORKSHOPS (IN %)

Year	Total out-of-country participants	Financed by Institutes + Other sources	%
2006	55	11	
2007	93	49	
2008	108	37,5	
2009	8	1	
	264	**98,5**	**37%**

Notes:

1- For all of the 2008 and 2009 workshops at least 50% of the ground costs were covered by the institutes as in-kind, whether that was subsidizing accommodation and food or providing facilities and meeting costs.

2- In 2009 – most workshops were conducted within a country with nationals attending.

SELF-SPONSORSHIP OF OUT-OF-COUNTRY PARTICIPANTS: TOTAL FIGURES FOR EACH WORKSHOP

2006 WORKSHOPS

Self-sponsorship of out-of-country participants: Second Leadership workshop, Zanzibar, Tanzania, 25-28 October 2006

Country	Number of Participants	Participants whose institute paid their travel	Participants whose travel was paid by other source
Kenya	5	1	
Mauritius	1		
Mozambique	3		
Seychelles	1		
South Africa	3		
Tanzania	4		
Total	**17**	**1**	**0**

Self-sponsorship of out-of-country participants: First Leadership workshop, Kingston, Jamaica, 12-15 September 2006

Country	Number of Participants	Participants whose institute paid their travel	Participants whose travel was paid by other source
Barbados	2		
Belize	1		
Jamaica	4		
Mexico	1	1	
Nigeria	1		
Papua New Guinea	1		
Portugal	1		
Trinidad and Tobago	3	3	
USA	1	1	
Total	**15**	**5**	**0**

Self-sponsorship of out-of-country participants: Second Leadership workshop, Havana, Cuba, 30 November – 4 December 2006

Country	Number of Participants	Participants whose institute paid their travel	Participants whose travel was paid by other source
Argentina	3		
Brazil	5	3	
Chile	1		
Colombia	1		
Cuba	7		
Ecuador	1		
Mexico	4	1	
Peru	1		
Total	**23**	**4**	**0**

2007 WORKSHOPS

Self-sponsorship of out-of-country participants: First Leadership workshop in South East Asia, Bangkok, 28 February-3 March 2007

Country	Number of Participants	Participants whose institute paid their travel	Participants whose travel was paid by other source
China	3	3	
Indonesia	2	1	
Japan	1	1	
Korea	1	1	
Malaysia	1		
Philippines	4		
Singapore	1		
Timor L'este	1		
Vietnam	1		
Total	**15**	**6**	**0**

Self-sponsorship of out-of-country participants: First Leadership workshop in Western Africa, Libreville 13-16 March 2007

Country	Number of Participants	Participants whose institute paid their travel	Participants whose travel was paid by other source
Angola	1		1[a]
Benin	2		0.5[b]
Cameroun	2		
Congo	2		0.5[b]
Cote d'Ivoire	2		0.5[b]
Ghana	3		
Guinea	1		
Haiti	1		
Namibia	1		1[a]
Nigeria	2		0.5[b]
Senegal	1		
Togo	1		0.5[b]
Total	**19**	**0**	**4.5**

Source of funding for the travel of out-of-country participants:
[a] sponsorship by the Beguile Current Large Marine Ecosystem Project (BCLME),
[b] half of travel cost offered by the Advisory Board of Experts on the Law of the Sea (ABE-LOS)

Self-sponsorship of out-of-country participants: Second Leadership workshop in Western Africa, Accra 1-3 October 2007

Country	Number of Participants	Participants whose institute paid their travel	Participants whose travel was paid by other source
Benin	3		
Cameroun	2		
Cote d'Ivoire	2		
Gabon	1	0.5*	
Guinea	1		
Nigeria	3	1	
Portugal	1		
Senegal	1		
Togo	1		
Total	**15**	**1.5**	**0**

Source of funding for the travel of out-of-country participants:
* 500 USD of this participant's plane ticket was sponsored by IOC approximately half of travel cost.

Self-sponsorship of out-of-country participants: Bid writing workshop for WIO region Africa
Mombasa, Kenya, 16-25 April 2007

Country	Number of Participants	Participants whose institute paid their travel	Participants whose travel was paid by other source
Mauritius	1		1 [a]
Mozambique	5	3	2[a]
Seychelles	1		1[a]
Tanzania	5	1	4[a]
Regional organizations	5	5	
Total	**17**	**9**	**8**

Source of funding for the travel of out-of-country participants:
[a] sponsorship by WIOMSA based on a request by individuals for travel grants

Self-sponsorship of out-of-country participants: Team building workshop for WIO region Africa, Durban, South Africa, 28-31 October 2007

Country	Number of Participants	Participants whose institute paid their travel	Participants whose travel was paid by other source
Kenya	5	4	1[a]
Mauritius	1		1[a]
Mozambique	2		2[a]
Seychelles	1	1	
Tanzania	2		2[ab]
Regional organizations	2	2	
Total	**13**	**7**	**6**

Source of funding for the travel of out-of-country participants:
[a] sponsorship by WIOMSA based on a request by individuals for travel grants
[b] sponsorship by UNEP through joint holding of events

Self-sponsorship of out-of-country participants: Team-building and bid-writing workshops in Latin America and Caribbean, Cananéia (Sao Paulo), Brazil, 5-8 and 10-13 December 2007

Country	Number of Participants	Participants whose institute paid their travel	Participants whose travel was paid by other source
Argentina	2		1[a]
Chile	2	1	
Colombia	2	1	
Cuba	6	2	
Mexico	2	2	
Total	**14**	**6**	**1**

Source of funding for the travel of out-of-country participants:
[a] participant attended on personal funds

2008 WORKSHOPS

Self-sponsorship of out-of-country participants: Third Advanced Leadership workshop in Maputo, Mozambique, 10-14 April 2008

Country	Number of participants per country	Participants whose institute paid their travel	Participants whose travel was paid by other source
Comoros	1		
Kenya	8	4	
Madagascar	1		
Mauritius	1		
Tanzania	4		
Cameroon	1		
China	1	1	
Ghana	1		
Nigeria	1		
Korea	1	1	
USA	1		
SBF	1		1
UNEP	1		1
WIOMSA	1		1
Total	**24**	**6**	**3**

Self-sponsorship of out-of-country participants: First Advanced Leaders workshop, Hyderabad, India, 10-14 May 2008

Country	Number of participants per country	Participants whose institute paid their travel	Participants whose travel was paid by other source
Bangladesh	2		
Malaysia	2		
Maldives	1		
Mauritius	1		
Oman	1		
Seychelles	1		
Sri Lanka	1		
Thailand	1		
United Arab Emirates	1		
Total	**11**	**0**	**0**

Self-sponsorship of out-of-country participants: Raising Awareness for Regional Actions on Marine Issues workshop, Pointe Noire, Congo, 6-10 October 2008

Country	Number of participants per country	Participants whose institute paid their travel	Participants whose travel was paid by other source
Cote D'ivoire	1		
Ghana	1		
Cameroun	1		
Gabon	3		
RDC	3		
Total	**9**	**0**	**0**

Self-sponsorship of out-of-country participants: Training in modelling workshop, Nairobi, Kenya, 24 Nov-05 Dec 2008

Country	Number of participants per country	Participants whose institute paid their travel	Participants whose travel was paid by other source
Madagascar	1		1
Mozambique	2		2
Rwanda	1		1
Seychelles	2		2
Tanzania	3		3
Total	**9**		**9**

Self-sponsorship of out-of-country participants: Raising Awareness for Regional Actions on Marine Issues Workshop, Cartagena, Columbia, 18-21 November 2008

Country	Number of participants per country	Participants whose institute paid their travel	Participants whose travel was paid by other source
Argentina	1		
Chile	1		
Cuba	1		
Ecuador	1		
Mexico	1		
Panama	1		
Peru	1		
Spain	1		
Total	**8**	**0**	**0**

Self-sponsorship of out-of-country participants: Training in Modeling Workshop, Hyderabad, India, 27 October – 7 November 2008

Country	Number of participants per country	Participants whose institute paid their travel	Participants whose travel was paid by other source
Bangladesh	2		1[a]
Comoros	1		1[a]
India	1		1[a]
Madagascar	1		1[a]
Malaysia	1		1[b]
Maldives	1		1[a]
Mauritius	1		1[a]
Myanmar	2		2[a]
Seychelles	1		1[a]
Sri Lanka	2		1[a]
Tanzania	2		1[a]
Thailand	1		1[a]
Total	**16**		**13**

Source of funding for the travel of out-of-country participants:
[a] sponsorship by COAST-MAP-IO project through joint holding of events
[b] participant self-financed his travel

Self-sponsorship of out-of-country participants: First Proposal-Writing workshop, Sabah, Malaysia, 10-14 December 2008

Country	Number of participants per country	Participants whose institute paid their travel	Participants whose travel was paid by other source
Bangladesh	2		
Bangladesh			
India	5	2	
Indonesia	2	2	
Japan	1	1	
Seychelles	1		
Sri Lanka	2		1[a]
Tanzania	1		0,5 [a]
Thailand	2		
Vietnam	1		
Total	**17**	**5**	**1,5**

Source of funding for the travel of out-of-country participants:
[a] 50% of travel costs of 2 participants from Sri Lanka and 1 participant from Tanzania were covered by the IOGOOS Secretariat.

2009 WORKSHOPS

Self-sponsorship of out-of-country participants: Training in Modelling workshop, Mombasa, Kenya, 7-12 September 2009

Country	Number of participants per country	Participants whose institute paid their travel	Participants whose travel was paid by other source
Seychelles	1	1	
Total	**1**	**1**	

Self-sponsorship of out-of-country participants: Training in Modelling workshop, Kribi, Cameroon, 23-27 November 2009

Country	Number of participants per country	Participants whose institute paid their travel	Participants whose travel was paid by other source
Angola	1		
Congo	3		(3)[b]
Gabon	2		
RDC	1		
Total	**7**		**(3)**

Source of funding for the travel of out-of-country participants:
[b] financed from IOC budget

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