WIOMSA would like to thank the following people for their contribution to the Annual report:

Jérôme Bourjea, IFREMER, Délégation de la Réunion, France
Peter Chadwick, Conservationist and Wildlife & Conservation Photographer, Cape Town, South Africa
Lola Massé, Research Institute for Development (IRD), La Réunion, France
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Mathieu Séré, Agence pour la Recherche et la Valorisation Marine (ARVAM), La Réunion, France
Nirmal Shah, Nature Seychelles, Seychelles
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Cover Photo:
The WIOMSA sponsored Boat at the Zanzibar International Film Festival Dhow Race, Stone Town, Zanzibar © Lilian Omolo

Printing
Printed By: Jamana Printers, Dar es Salaam, Tanzania
Editing: Lilian Omolo
Layout & Design: Conrad Samanya, Brand Partners, Nairobi
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Change making organisations are those that have vision and that pull out all stops to achieve it. I think you will agree with me that WIOMSA is such an organisation. With the help of our members and partners we crafted a vision which would establish a common regional platform by 2017 to advance and apply science for the sustainable development of marine and coastal environments, bringing together governments, institutions, the private sector and community stakeholders for joint actions, and ensuring that a financially sustainable WIOMSA plays a key role in this process. This is not just talk. I am proud to inform you that in 2012 we started to make some impressive steps in this direction. Implementation will continue through the new Marine and Coastal Management for Science (MASMA) Programme over the next five years.

In my message in the 2011 annual report, I focused on the work that had been done that year by the WIOMSA Board and the Secretariat in collaboration with partners to prepare an ambitious MASMA proposal for funding of 101.5 million Swedish Kroner (SEK). The proposal was presented the Government of Sweden, represented by Sida, and other donors. I am delighted to report that we signed an agreement with Sida in June 2012 to fund 88.5 SEK for the period 2012-2017 and the program formally begun on 1 July 2012. In this report, we offer a glimpse of the framework that we established in 2012 to ensure that the new program’s goal and objectives are met.

But WIOMSA like many NGOs is grappling with the issue of achieving institutional financial sustainability to sustain its core costs. While in its 20 odd years of existence there has been a quantitative increase in funds, there hasn’t been a similar rise in the number of funding sources. We have been lucky to enjoy the support of a primary donor but given how tight budgets are and how priorities are changing around the world, donors now have more stringent requirements and demands.

With the new MASMA program WIOMSA has taken bold strides in the road to achieving sustainability. After intensive research and discussions with financial experts, we launched the WIOMSA Trust in Mauritius in March 2012 and the intention is that by 2017, the trust should cover 30% of the Association’s core costs. Through much ground work, we gained agreement from Sida that it would put in an annual contribution into the fund in the new agreement. I am personally very satisfied to have overseen the establishment of the trust, which is a first for marine science in the region. We hope that in time it will provide a reliable and sustainable source of funding to support research activities in the western Indian Ocean region and to support the Association’s core activities.

The key focus for WIOMSA in this new program is to find a way to strengthen interactions between itself and research institutions & management authorities, and also between research institutions and management authorities. To achieve this we have made a paradigm shift towards ensuring that results of the research we are funding are taken up by management authorities in their decision making processes. This is being done through projects that show a proof of concept approach as well as working more with institutions than before.

Further, we as an Association have started conducting a series of targeted organizational assessments of WIOMSA to identify specific areas in which the organization needs to improve to become even more efficient, effective and relevant to its vision, as well as financially viable. These organisational assessments are conducted in recognition that the future of WIOMSA depends on changing the organisation to ensure both organisational and financial sustainability. It is my sincere belief that the organizational assessment will provide a solid foundation for the road to organizational sustainability as well as providing the framework for a strategically formulated, time-linked exit strategy for Sweden as the primary donor.

I hope everyone who reads this report is just as excited as I am to see what the future holds for WIOMSA and appreciates the work we have put in over the past 20 years to get WIOMSA to this level. WIOMSA’s success in attaining new funding is a reason to celebrate the achievements that come with having the right vision, combined with strong leadership at the Board level, hard work by the Secretariat, generous aid from our donors and partners and good will by members. Having been with the WIOMSA Board right from the beginning I believe I can legitimately promise that this organization is able and willing to be innovative and reinvent itself to remain relevant in the face of the demands of the region.
2012 was another busy year for WIOMSA as we had our hands full of exciting and challenging activities. WIOMSA on its own or in collaboration with its partners implemented a number of new activities, initiated new partnerships; and more importantly started the implementation of the new five-year Programme.

In 2012, WIOMSA successfully completed the implementation of the Phase III of Sida support to WIOMSA and launched the implementation of new and challenging five-year programme (2012-2017). The emphasis of the new programme is on supporting research activities that may contribute to impacts on coastal communities and their environment. This new shift in focus is not a coincidence but it builds on the successes and challenges of previous phases and the need to mobilize capacity built over the years to address priority policy, social and economic issues currently facing coastal communities in the region. It is only through such efforts that WIOMSA can continue to make itself relevant to governments, coastal communities and their environment. The development of the new Programme provided WIOMSA with an opportunity to reflect on where the Association should be in ten or twenty years’ time, as well as to assess what strategies/approaches have worked well and which ones have not.

Another major milestone achieved by the Association was the establishment of the WIOMSA Trust (WIT) in March 2012. WIOMSA commissioned two technical studies to explore the idea in detail before the Board formally approved the trust’s establishment and registration in Mauritius. The Trust when fully operational will provide a reliable and sustainable source of funding to support research activities in the WIO region and WIOMSA’s core activities.

Partnership building is one aspect where significant progress was made in 2012. In 2012, WIOMSA forged several new key partnerships and strengthened ties with existing partners to implement projects. Examples of such partnerships include, the partnership with the IGAD Climate Prediction and Applications Centre (ICPAC) and the Intergovernmental Oceanographic Commission of UNESCO’s Sub Commission for Africa and the Adjacent Island States (IOC-AFRICA) for improvement of climate outlooks for the short and long rain seasons in the Greater Horn of Africa region, through inclusion of information on oceanic processes; with the Food and Agriculture Organization (FAO) for enhancement of management of sea cucumber fisheries; and with the Nairobi Convention on oil and gas as well as the green economy. WIOMSA also facilitated the establishment of the new WIO Mangrove Network, whose main aim is to facilitate experience-sharing and reciprocal support in terms of expertise in research and management of mangroves in the region.

WIOMSA also played an important role in policy development at the regional level. WIOMSA in collaboration with the Nairobi Convention Secretariat coordinated the preparation of three key background documents: oil and gas exploration; green economy in a blue world; and adaptation to climate change. These documents were presented at the Science for Policy Workshop and the Seventh Meeting of Contracting Parties to the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean (Nairobi Convention). These documents resulted in five decisions being adopted during the Ministerial Meeting at the convention.

In recognition of WIOMSA’s work in climate change, WIOMSA was invited by the Africa Union to write a chapter on impacts of climate change on Coastal and Marine Resources for the Comprehensive African Strategy on climate change.

HIGHLIGHTS FROM THE SECRETARIAT

WIOMSA has become the second African institution, the other being South African National Biodiversity Institute (SANBI), to join the Consortium of Scientific Partners on Biodiversity.
We signed two important Memoranda of Understanding with key organizations: the Indian Ocean Commission (COI) and the Convention of the Biological Diversity. The COI and WIOMSA have agreed to consult each other on matters of common interest to both with a view to ensuring maximum coordination of their work and activities, exchange information and keep each other informed of projected activities and programmes of work in fields of common interest.

WIOMSA has become the second African institution, the other being South African National Biodiversity Institute (SANBI), to join the Consortium of Scientific Partners on Biodiversity as the twenty-first member. The Consortium was established in March 2006 through a Memorandum of Understanding between CBD and interested institutions from different parts of the world. The purpose of the MOU is to leverage the expertise and experience of the partnering institutions in order to implement education and training activities to support developing countries that are building scientific, technical and policy skills in the area of biodiversity.

We at the Secretariat are very happy with our overall performance in 2012. We successfully implemented most of our planned activities; we reached out to new partners and established the WIOMSA Trust, an important cornerstone in building a foundation for the long-term financial sustainability of the Association. We wish to thank everyone who contributed in one way or another in making 2012 another special year for the Association.
The New WIOMSA Program identified two key questions that are the building blocks or foundation needed to ensure that the organisation remains relevant and able to achieve expected outcomes in both the medium and long term: how to ensure WIOMSA becomes a more efficient, effective, relevant and financially viable organization; how to strengthen interactions between WIOMSA and research institutions/management authorities and between research institutions and management authorities on a regional basis.

While it is evident that research continues to be the core of WIOMSA’s activities, in the new Programme, the kind of research supported will contribute towards the creation of enabling conditions for coastal management, as well as leading to behavioural and social/environmental changes. This is only possible through the existence of a financially viable WIOMSA. Therefore, promoting behavioural and social/environmental changes, as well as strengthening the financial viability of the Association, are the key aspects of the new MASMA Programme. This section describes the new program and how it was launched in 2012.
NEW WIOMSA PROGRAMME: CONSOLIDATING THE GAINS

2012 marked the beginning of the new five-year programme, “Support to WIOMSA for the implementation of the Marine and Coastal Management for Science (MASMA) Programme”. This programme funded by the Government of Sweden through Sida is part of a large five-year programme, parts of which are already funded by other donors such as USAID and proposals for the remaining components have been put forward to other donors. The signing ceremony of the agreement for the new Programme was held in Zanzibar on 28 June 2012, with Dr. Gity Behravan, the Senior Research Advisor Sida signing on behalf of the Government of Sweden and Dr Julius Francis, the Executive Secretary, on behalf of WIOMSA. The implementation of the Programme began formally on 1 July 2012.

The development of the new Programme took about one year and was widely participatory involving not only WIOMSA core constituents but also partners in the region. A series of review processes including the End of the Phase Evaluation of the Programme, were carried out to assess the performance of previous phases of MASMA in order to identify and refine the priority focus areas for the new Programme. These processes showed that, while many projects have provided information that is necessary for creating enabling conditions that make it possible to plan and implement marine and coastal management Programmes, fewer projects have led to changes that have increased the wellbeing of coastal people and concomitant positive environmental change. This suggested that the new Programme should, in addition to contributing towards the creation of enabling conditions for coastal and marine management, focus on mechanisms to contribute to lasting behavioural and social/environmental changes.

Recognizing that the problems facing the region are long-term and that funds will always be limited, WIOMSA has adopted a programmatic approach. The overall goal of the new Programme is “to establish a common regional platform by 2017 to advance and apply science for the sustainable development of marine and coastal areas.”
coastal environments, bringing together governments, institutions, the private sector and community stakeholders for joint actions, and ensuring that a financially sustainable WIOMSA plays a key role in this process”.

The goal of the new Programme will be achieved by implementing a results-focused and highly integrated set of specific objectives. These objectives are: i) To undertake organizational change to improve the financial and organizational sustainability of WIOMSA; ii) To develop institutional capacity to identify and define problems/ issues, and to conduct quality research that is relevant and critical for technology transfer and the promotion of behavioural and social/ environmental change; iii) To strengthen existing partnerships, and develop new ones with the intention of working together towards achieving behavioural and social/environmental change and iv) To develop and implement an effective communication strategy that allows the work of WIOMSA and its partners to be used to influence behavioural and social/environmental change.

Based on these objectives, the Programme is divided into four specific components namely: the Organizational Change of WIOMSA; Institutional Research Capacity and Technology Transfer; Partnerships; and Information Dissemination and Communication. There is also a cross-cutting component which is comprised mainly of capacity development activities.

There are a number of new aspects and new approaches that are part of the new Programme. These include: increasing the size and duration of grants (the size of the MASMA competitive research grants from US$ 200 000 to US$ 600 000 per grant and extending the duration of the funded projects to four years with the fourth year dedicated to dissemination and publication of the results and closure of the projects; the introduction of mandatory matching funds and targeting institutions as the main recipients of the research grants. Granting criteria have been re-structured to include co-funding of 20% of the project costs from other sources, mandatory participation of either management authorities or private sector or communities, and projects should show clearly how their planned activities will lead to behavioural and social/environmental changes - in other words, activities that lead to real changes that impact on coastal communities and their environment). Other new aspects are the organizational assessment of WIOMSA and capitalization of the WIOMSA Trust. The new program came with the realisation that if WIOMSA is to play a significant role in catalysing regional events and processes that will contribute to achieving the region’s Vision, as well as its own Vision, then the Association itself will need to change.

One of the main recommendations of the end of phase evaluation report carried out in 2011, was the “adoption of a broader change process line of thinking and particularly initiating steps such as more effective use of the WIOMSA vision to better define where WIOMSA is now, based on its work to date, where is it going via a stronger articulation of what kind of organization might WIOMSA aim to become and then what support is needed to get there.” Targeted organizational assessments of WIOMSA will be conducted in the new Programme to identify specific areas in which WIOMSA needs to improve under the current situation to become even more efficient, effective and relevant to its vision, as well as financially viable. Resource Mobilization has been given the highest priority in the new Programme with several activities and strategies proposed to ensure long term sustainability of WIOMSA and its programmes. Following the establishment and registration of WIOMSA Trust (WIT) in Mauritius in March 2012, Sida has agreed to contribute funds towards the capital of the Trust.

As reflected in its title “Consolidating the Gains” and its goal, the new programme, while building on the achievements and lessons learnt from the previous phases of the MASMA Programme, has introduced several new and innovative aspects, which if implemented successfully, will not only lay a foundation for the Association’s long-term sustainability but will also, act as a catalyst for attracting more funding to WIOMSA and the region as a whole and contribute to behavioural and social/environmental changes.
On 24th and 25th September 2012, WIOMSA organized an Inception and Partnership Building Meeting at the Sarova White Sands Resort and Spa in Mombasa, Kenya. The meeting brought together key existing and potential partners to launch the new 5-year Programme, to explain details of the new programme as well as to investigate areas of common interest where collaborative efforts might be possible to assist in achieving the goal of the programme, which aims “to establish a common regional platform by 2017 to advance and apply science for the sustainable development of marine and coastal environments, bringing together governments, institutions, the private sector and community stakeholders for joint actions, and ensuring that a financially sustainable WIOMSA plays a key role in this process.” The workshop was held with the realization that for the ambitious program goal to be attained, an all-inclusive process, with closely linked activities involving different partners, has to be formulated with inputs from new and existing partners. The workshop provided a good opportunity to explore how this process could be developed.
An important aspect of the inception and partnership building meeting was to engage stakeholders in planning and improving the new programme. In order to do this in an inclusive manner, three sessions were devoted to group discussions on several key areas. The first group session - focused on validating the proposed priority research themes of Vulnerability, Resilience and Adaptation, Coastal Livelihoods, Governance for the Future, and Cross-cutting and Emerging issues which included valuation of ecosystem services, urbanization and port development in the region with the groups being asked to critically review and improve the proposed priority areas to contribute to a fully comprehensive and updated call for proposals for research in these fields.

The next session was designed to determine whether the proposed activities under each objectives of the new programme adequately addressed the objective. Key objectives included those related to the development of institutional capacity to conduct quality research that would promote behavioural and social/ environmental change, to strengthen and develop partnerships for rolling out the new programme, implementation of an effective communication strategy, and capacity development at multiple levels to support achievement of the 2020 regional vision. Part of this group discussion included identifying on-going or planned activities by partners and the timeframes of these initiatives, as well as interrogating mechanisms and opportunities for collaboration under each objective.

The last group session dealt with partnership building around specific key activities. The activities included - the development of a Regional Marine and Coastal Monitoring Framework (issues discussed here were the identification of the main areas requiring monitoring, areas for joint funding - and an implementation framework); the feasibility of organizing special sessions during the WIOMSA Symposium to make it attractive for other (non-scientific) stakeholders to attend; and - capacity building of marine and coastal management authorities in the region to enhance the effectiveness of management interventions. (the key issued here was developing the Terms of Reference for a consultancy on this subject, identifying the most important areas for capacity building of management authorities in relation to the identification and definition of issues, as well as the utilization of research results in the management and decision-making process).

The - meeting was concluded with statements from the various organisations that were present with regard to potential future collaboration within the context of WIOMSA's new programme. Statements of support were made by senior members of several organisations including CORDIO, WCS, the Nairobi Convention Secretariat, The Indian Ocean Com- mission, the IOC of UNESCO, WWF and Blue Ventures.

Main outcomes of the Meeting
- Participants were provided with a detailed description of the new Programme and its objectives - and discussions held on mechanisms/opportunities for collaboration.
- The program's priority - research themes were reviewed and updated.«
- Potential joint projects and initiatives were identified including regular organization of science to policy fora; production of educational and awareness materials targeting different audiences; organization of workshops/training courses and production of report cards on topical issues.
- A change in the structure of - the WIOMSA Scientific Symposium was recommended to provide a platform for effective interactions between scientists and decision- and policy-makers.
- Key aspects for consideration in the development of the terms of reference for an assessment of the capacity building needs of management authorities were defined.

The inception meeting was the start of an on-going process of closer collaboration among organisations in the region that will serve to strengthen our efforts to address the challenges faced in the marine and coastal environment. The workshop also served to rekindle existing partnerships and provided the building blocks for exciting new opportunities for the future with existing as well as new partners.

“Today is a day for celebration as this workshop could be regarded as a formal start of the new Programme funded by the Government of Sweden! This support is part of a larger five-year programme, aspects of which are funded by other donors such as USAID, and potentially others in the future. It is no small achievement to be where we are today particularly as it reflects how far WIOMSA has come since October last year working closely with Sida. It has been a special journey, a journey marked by many lessons and challenges as both WIOMSA and Sida have been working hard to find common ground to continue this long and special relationship!”

Dr Gity Behravan, Government of Sweden.
Eleven of the twelve research projects funded under the Sida-funded Programme on “Climate Change in coastal and marine environment of the Western Indian Ocean region: Assessment of Impacts and Adaptation Options”, were completed in 2012. These projects covered different aspects ranging from impacts of climate change on key ecosystems such as coral reefs and mangroves to preparedness of the countries for climate change in terms of having appropriate policies in place. Other projects focused on developing short and long-term predictions of regional environmental impacts and ecological responses to climate change.

Apart from generating new information on different topics, these projects contributed to increased awareness amongst different stakeholder groups and increased capacity of countries and communities to plan and implement adaptation measures. Further, other achievements by these projects included: development or updating of a model to predict species’ occurrences at different time periods (to estimate the potential impacts of future climate change) and a coral reef simulation model (Coral-Algae-Fish-Fisheries Ecosystem Energetics, CAFEE) to run scenarios testing the effects of coral bleaching and mortality on the ecology and fisheries production of coral reefs; twelve PhD and twenty-six MSc students registered at universities within and outside the region were supported through these projects.
CONTRIBUTING TO THE NEW KNOWLEDGE BASE ON IMPACTS OF CLIMATE CHANGE ON THE COASTAL AND MARINE ENVIRONMENT

Three of the eleven climate change projects completed in 2012 are summarized below. Each summary describes the main goal of the project and the main scientific results.

The Feasibility of Mangrove REDD+ Projects in the Western Indian Ocean: Linking Mangrove Conservation and Climate Change Adaptation to the Global Carbon Markets

By Blue Ventures and Kenya Marine and Fisheries Research Institute

This project, whose main goal was to quantify the net CO2 sequestered in an extensive mangrove forests that is experiencing deforestation, specifically with the objective of providing the science necessary for mangrove REDD projects, made significant progress in many areas in the course of its implementation. This project was implemented by Blue Ventures and the Kenya Marine and Fisheries Research Institute (KMFRI). Through the project, a national analysis of mangrove deforestation was carried out in Madagascar. The analysis also included an identification of areas of high potential for mangrove REDD+. Focusing on the key areas of interest identified in the national analysis, the project conducted comprehensive historical and contemporary mapping and produced the first localized map of mangroves and surrounding land-cover categories for Ambanja/Ambaro bays in Madagascar.

Mapping also allowed the project to adapt and test mangrove stratification techniques which proved to be ecologically meaningful and represented statistically distinct carbon stocks. To acquire the necessary measurements, the project invested in equipment, training and scientific collaborations; the result being that within Madagascar the skills now exist to undertake mangrove carbon measurements in keeping with international protocols. These field measurements have resulted in accurate carbon stock estimations for a range of mangrove types within Madagascar. Through concurrent socio-economic analyses, the project has also established the historical dynamics of
two of Madagascar’s largest mangrove ecosystems (Mahajamba and Ambanja-Ambaro). The project began piloting the application of a VCS approved REDD methodology (i.e. VM0009), which is the first application of a VCS methodology to mangroves. In addition, the project has submitted its results to the Office National pour l’Environnement (ONE) and the national Monitoring Reporting and Verification effort, helping to ensure that blue carbon is given prominence in national REDD+ policy. The project has contributed information on mangrove carbon stock measurements and historical forest dynamics in the development of a national reference scenario. Despite its many successes, the project encountered numerous challenges. For example, given a need for detailed and accurate characterization of the agents, drivers and underlying causes of degradation and deforestation, the project’s socio-economic team was typically stretched far too thin and required the expansion of the team to include a socio-economic sub-team in order to complete the needed contextual research. Secondly, while mapping deforestation proved possible using existing methods and available remotely sensed data, accurately detecting degradation remains extremely vexing. To best characterize subtle mangrove modification in addition to conversion, finer detail and alternative (e.g., radar, LiDAR) data-sets and alternative image classification approaches (e.g., sub-pixel analysis) must be explored. Further, while thus far measurements and subsequent calculations have focused on standing mangrove carbon stocks, it is clear that that project needed to shift focus to the measurement of GHG emissions and reductions at a landscape level, including the accretion of organic soil carbon and taking into full account the wetland functioning of mangroves. Through overcoming challenges such as those listed through collaboration with other researchers in the WIO, as well as world-leaders in accounting methodologies, the project would be better positioned to overcome what still remains perhaps the single most important barrier to mangrove blue carbon projects – an approved methodology for conservation of intact mangrove wetlands.

The results of this research collectively provide the information required to work towards developing an actual pilot mangrove REDD project that could finance conservation, restoration and sustainable use in Ambaro-Ambanja bay. Further, the Project’s work in the mangroves of Ambondrolava in Madagascar’s southwest coast, in partnership with the Belgium-based NGO Honko Mangrove Conservation and Education is on track to fully develop the world’s second Plan Vivo project for mangroves, following the work that has been achieved by the project partners, KMFRI, in Gazi Bay, Kenya.

It was agreed that for the WIO region, adaptation remains the top priority; that for tackling the impacts of climate change and variability, there is no single approach which fits all future challenges posed; and that adaptation responses will need to come from a range of approaches and practices, selected and combined to fit unique situations.

**Effects of Global Warming on Coral Disease Outbreaks in the Western Indian Ocean**

This study by ARVAM, Oceanographic Research Institute (ORI) and the L'Institut de Recherche pour le Développement (IRD), aimed at providing data on the epizooLOGY of coral diseases (their prevalence and variability at local, regional and temporal scales, factors involved in their occurrence and spread, and their effect on host populations) with an emphasis on causes and effects on three target reef ecosystems: South African, Mayotte and Reunion coral reefs. Additionally, this study focused on the identification and characterization of the agents of the pathogens using field observation combined with techniques from microbiology. Understanding the relationship between the emergence of coral diseases and climate change in the WIO coral reefs is difficult because of the lack of investigation into the identification, prevalence and etiology of coral disease.

This study is the first coral disease assessment conducted in the WIO region. It provided baseline information compiling qualitative and quantitative data on three WIO countries. Surveys, conducted on 22 sites represent-
ing 348 belt transects (covering 7920 m²), revealed the presence of seven coral disease “categories”: white syndromes (WS), black band disease (BBD), skeleton eroding band (SEB), pink line syndrome (PLS), growth anomaly (GA), necrosis (Nec), with a newly identified disease, Porites white patch syndrome (PWPS). Except for PWPS, diseases recorded during this study seemed to be similar to those previously reported from other regions across the Indian Ocean, including Chagos, Republic of Maldives, and South India.

Disease susceptibility
Compiling results obtained for three studied regions (Reunion, South Africa and Mayotte), both Acropora and Porites taxa, were generally found to be the most vulnerable genera to disease. Acropora, mainly represented by the species Acropora muricata, showed symptoms of four syndromes including WS, SEB, GA and Nec.

Disease Prevalence
Global disease prevalence calculated at Reunion between 2010 and 2012 (8.1 - 9.0%) were higher than those found in both South Africa (2.6-4.9%) and Mayotte (2.6%). Disease levels found in the island were also higher than what has been reported for other Indian Ocean reefs, such as Ningaloo reef, Australia, Chagos or Maldives reefs. However, values obtained for Reunion were similar to the prevalence calculated at Mandapam reefs, South India but were substantially lower than value recorded at Palk Bay, South India. This relatively high disease impact may be explained by the fact that fringing reefs in Reunion are young and adjacent to areas (~ 500 m wide) of high coastal development and are more subjected to stressors such as poor water quality caused by anthropogenic activities (urbanization and agriculture across watershed, waste water, sedimentation, over-exploitation and over-frequency of reefs).

Spatial and seasonal variability in disease prevalence
Spatial variability was also detected in several coral diseases in both Reunion and South Africa. BBD observed on Porites in Reunion seemed to be depth dependent with more diseased cases observed in shallow than deep habitats. Same trends were found in South Africa for colonies of Acropora sp. and Pocillopora sp. infected by WS. This pattern found on shallow reefs, suggests that prevalence of both WS and BBD could be dictated by human activities. Same results were found in coral reefs in Republic of Maldives and South India with both WS
and BBS more abundant in shallow sites than deeper. However, in Mayotte no spatial variations were detected despite that fringing reefs are subjected to increasing anthropogenic pressures compared to barrier reefs.

Of the diseases found on shallow reefs in Reunion, BBD seemed to demonstrate a particular seasonal pattern related to warm temperatures. For instance, BBD recorded on massive Porites, first appeared during the summer 2010, decreased significantly during the winter 2011 and then re-increased significantly the next summer. Same trends were found in PWPS on both reef slope and reef flat but no statistical differences were detected. In South Africa, warmer water temperatures seemed also to be linked to higher disease prevalence during the first year, between summer and winter 2011. This is the case for PWPS, BBD on Hydnophora sp., and WS infected Acropora sp., Astreopora sp. and Pocillopora sp. However, no variations were observed for the same syndromes between summer and winter 2012. Therefore, the seawater temperatures may not be cold enough to enable a significant regression of those diseases. Nevertheless surveys should be expanded to confirm this observation.

**Microbial analysis of PWPS**

During this project, the scleractinian coral Porites lutea, an important reef building coral on Western Indian Ocean reefs, was affected by a newly reported disease condition; the Porites white Patch syndrome (PWPS).

In conclusion, the project results suggest that some coral genera are more susceptible to disease. In addition, seasonal patterns recorded for several coral diseases during this project suggest that warm temperature may impair coral immunity making them more vulnerable to pathogens. The predicted increasing temperatures associated with rainfall and storminess in the WIO from climate change is likely to enhance coral diseases. The project came up with several recommendations including integration of coral diseases monitoring in all coral reef monitoring programs as important health indicators.
In the context of climate change, coral reproduction and recruitment are key processes which can ensure the renewal and recovery of reefs. Yet the effects of climate change and global warming on these processes is poorly known and may vary with latitude. This project, by the Oceanographic Research Institute (ORI) and the L'institut de Recherche pour le Développement (IRD), aimed at comparing the sexual reproduction and recruitment of two reef-building corals along a latitudinal gradient in Reunion and South Africa to ascertain how fecundity, larval survival and recruitment rate varied for similar species depending on latitude and environmental conditions. It involved the sampling of coral using scuba-diving, histology analyses, the collection of recruitment tile and aquarium experiments.

The coral reproductive features showed little variation between Reunion and South Africa in the two studied species. This consistency in coral reproduction suggests that slight difference in the environmental parameters does not affect the coral reproductive capacity. It may also indicate that some corals may have limited capacity to adapt their reproductive traits in different environments. Fecundity in Acropora austera was lower in Reunion (6.9±0.3 oocyte per polyp) than in South Africa (9.9±0.3 oocyte per polyp). It may be due to the occurrence of more stressful environmental conditions at Reunion (water pollution, breakage) that may affect the coral reproductive output. Despite being a slow-growing coral, Platygyra daedaelea invested a high amount of energy into reproduction and produced up to 60 oocytes per polyp. Its fecundity, in addition with its stress-tolerant capacity, may enhance its change of survival in face of climate change.

Recruitment rate was high in South Africa (1054 recruit m-2 year-2) and close to the value observed on the Great Barrier Reef. In Reunion, the average recruitment rate (279 recruit m-2 year-2) ranged between values observed on other tropical fringing reefs. The South African reefs seemed therefore to be suitable for coral settlement despite being at the limit of coral environmental threshold. Apart from Pocilloporids, Acroporids were the most abundant in South Africa while it was Poritids in Reunion. The recruit composition on tile seemed to reflect the taxonomic composition of adult assemblage.

The pattern suggests that the recruitment on these reefs may rely mainly on the local larval input and/or that the post-settlement mortality is high in recruit not adapted to the local conditions on reef. The reef might therefore show low recovery following the mortality of adult colony; this analysis is under progress. No clear pattern in coral recruitment rate or diversity was visible between the No-Take Areas and exploited reefs of Reunion. This could be due to the young age of the MPA (proclaimed in 2007) and/or the limited size of the NTA (5% of the total MPA surface) that may have limited influence on coral recruitment rate. Recruitment rate was the lowest of all study sites in the northern NTA site (SAT) where degradation and sign of eutrophication have been reported since the 1980s. Other sites outside the NTAs showed high recruitment rate, they may be therefore a need to re-evaluate the position of NTA within the MPA.

Gametogenesis in the two studied species was strongly correlated with change in seawater temperature in Reunion and South Africa. Variation in temperature may therefore affect the synchronicity and timing of reproduction in coral and have major consequences on fertilisation and reproductive success. In addition, increased seawater temperature strongly affected the coral development in aquarium by reducing the larval pre-competency period. A shorten benthic phase may therefore favour localised recruitment and lead to greater reef isolation. This may have serious consequence for reef recovery following damage.

This project will continue through the research program developed by the Observatory of the Universe Sciences. It involved the long-term survey of coral recruitment in Reunion and the training of the eco-guards for the tile collection and analysis.
WIOMSA takes a broad definition of capacity development to encompass much more than training. We consider that capacity building is conducted at different levels (individual, institutional) and that it could also entail the creation of an enabling environment. Capacity building encapsulates all the phases of knowledge generation and the knowledge translation cycle (from setting the research agenda and research design through to research use and communication). WIOMSA through its different activities provides different opportunities for strengthening research and management capacities.

In 2012, different approaches were used for capacity development, including the MARG grants (allowing MSc and PhD students to either visit laboratories outside their countries for data analysis, or attend conferences to present results of their theses); the certification of MPA professionals based on their skills and experience in MPA management; and development and implementation of change projects (in which participants in the training course on Integrated Sustainable Coastal Development are required to initiate Change Processes in their work places based on skills and knowledge acquired from training).

Four capacity development events were organized during the period under review: focusing on improvement of climate outlooks for the short and long rain seasons in the Greater Horn of Africa region, through inclusion of information of oceanic processes - GHACOF 32- (discussed in the partnership section); development of management plans for sea cucumber fisheries-SCEAM Indian Ocean- (discussed in the science to policy section); certification of Level 3 and Level 1 MPA staff; a workshop for MPA Managers on climate change impacts on Marine Protected Areas and two training courses on Integrated Sustainable Coastal Development. A total of 85 individuals from nine countries of the region (with the exception of Somalia) were trained in the capacity development events held in 2012.
STRENGTHENING THE MANAGEMENT OF MPAS

WIO-COMPAS PROGRAMME HIGHLIGHTS

Thanks to our partners, donors, endorsers and supporters and through their continued commitment, investment and collaboration, the WIO-COMPAS Program continues to grow and make an impact in the professional lives of Marine Protected Area Professionals in the Western Indian Ocean region. Here are just a few of our many highlights from 2012.

Building a critical Mass of MPA PROS

WIO-COMPAS Certifies First Level 3 MPA PROs:

WIO-COMPAS successfully conducted the first Level 3: Policy, Planning and Strategy Certification Assessment in May, 2012, marking the successful completion of all three certification levels offered through the program. Following the call for applications early in the year, nine applicants were accepted as candidates for Level 3, with six of these attending the Level 3 Assessment Event (L301) that was held in Johannesburg, South Africa from the 21-25 May 2012.

Five candidates were certified as MPA PROs and one’s status is pending, subject to the provision of additional information. WIO-COMPAS is delighted to announce that Mr. Arthur Tuda and Dr. Mohamed Omar from Kenya and Dr. Kerry Sink, Mr. Peter Chadwick and Dr. Ané Oosthuizen of South Africa have been certified in the first lot of Level 3 MPA PROs! Visit the MPA PRO Profiles page on the wio-compas website www.wiomsa.net/wiocompas to view all of the outstanding MPA PROs - leaders of the WIO region!

Level 1, Mafia:

WIO-COMPAS, in conjunction with The Marine Parks and Reserves Unit Tanzania (Mafia Island Marine Park) held the 4th Level 1 (L104), certification assessment event resulting in 6 experts in Marine Field Operations from Kenya and Tanzania being certified as MPA PRO Level 1 and two candidates whose certification is pending their provision of further evidence of competence. The event was held at the Mafia Island Marine Park from the 13-18 November 2012. 13 applications were received for this certification offering with 9 candidates being accepted and enrolling for the assessment event and eight of these attending the Mafia event.

The certification of Mwanahamisi Haodo and Willys Osore both from Malindi Marine Park, Kenya; Mwandungo Mwinyi of Mombasa Marine Park, Kenya; Munezero Kanyangemu, Albert Makalla and Mussa Ally Hamisi from Mafia Island Marine Park brings the total number of certified MPA PROs in the WIO region to 48. To read all about the new MPA PROs, click on the MPA PROs profiles tab on the WIO-COMPAS website.

STRENGTHENING RESEARCH CAPACITY

Postgraduate students supported

In 2012, a total of 25 MARG II and III grants were issued, which benefitted 11 MSc and 7 PhD students. The grants enabled them to visit laboratories outside their countries for data analysis (MARG II) and to attend conferences to present results of their theses (MARG III).
Developing a Core Team of Assessors

WIO-COMPAS Assessors Formalize their Training in South Africa

At the request of the WIO-COMPAS Program, Meg Pahad and Melissa King from Qalanet Consultants conducted a training course for assessors in February 2012 in Johannesburg whose purpose was to formalize the experience and the status of WIO-COMPAS assessors through improving their expertise in the theory and practice of assessment. The training involved 11 assessors from Kenya, Madagascar, South Africa and Tanzania and it targeted Level 1 and 2 assessors.

One of the strategic goals of WIO-COMPAS is to achieve greater national, regional and international credibility and for certification to be recognised as a method of professionalising the field of marine protection. The assessment model adapted by the WIO-COMPAS program is one of the key ways of ensuring that this credibility is maintained.

The Qalanet consultants worked together with the workshop participants to develop a model Assessor Training programme for Apprentice Assessors that will be replicated in the future in order to increase the pool of qualified assessors for the programme. The model includes procedures for assessor apprenticeship and a training program outline for apprentice assessors. They also sought to refine a good-practice Quality Assurance system for the WIO-COMPAS programme; and to define those elements and aspects of the WIO-COMPAS certification programme which give it a stamp of high quality, in support of advocacy and marketability.

New Assessors for WIO-COMPAS

WIO-COMPAS has been systematically increasing the number of assessors in the region based on two criteria: the program demands and the selection of assessors with on the ground operational experience coupled with knowledge of the regional and local context. In 2012, WIO-COMPAS brought into the team of assessors, a panel of assessors who worked together in the certification of Level 3 candidates in May 2012 (L301). At Level 3, the assessment process is conducted by a panel of assessors rather than individual assessors being assigned to a candidate. This is done in consideration of the very wide range of high-level competences required by candidates at
that Level 3. The panel for L301 comprised 3 assessors and a moderator: Mr. Lawrence Sisitka (Rhodes University and the WIO-COMPAS lead assessor), Ms. Meg Pahad (Qalanet Consultants and the moderator), Dr. Nyawira Muthiga (Wildlife Conservation Society) and Prof. George Owiti (the Principal, Kenya Wildlife Training Institute). The 4 working together brought to the table high level specialist knowledge and experience in the assessment of professionals, in marine science, coastal and marine conservation, in global/regional coastal and marine policy and planning frameworks and in WIO-COMPAS assessment processes. WIO-COMPAS also conscripted 2 apprentice assessors - Domoina Rakotomalala from WWF Madagascar and Heritiana Rahagalala from the Wildlife Conservation Society in Madagascar. The 2 attended the Level 1 assessment event in Mafia in November 2013, as part of their training as assessors for the Level 1 Certification for French speakers in Madagascar scheduled for early in the year in 2013.

Raising awareness on WIO-COMPAS

For the purpose of raising awareness on the Programme and mobilizing new support for the WIO-COMPAS, the Programme was presented in two major events in 2012. In September 2012, the Programme was presented in a special session “Shaping the Future of IUCN’s Protected Area Capacity Development Programme” held during the World Conservation Congress, that took place in Jeju Island, South Korea. The Programme was presented in the Seventh World Ranger’s Congress.
WIO-COMPAS at the Seventh World Ranger’s Congress

One of WIO-COMPAS’ champions and an MPA PRO, Arthur Tuda from Kenya Wildlife Service attended the Seventh World Rangers Congress was held in Arusha, Tanzania from 4-9 November 2012 and delivered a presentation in the capacity building sub-theme entitled ‘Enhancing the career paths of protected area staff: certification of marine protected area professionals’.

Tuda’s presentation which attracted over 50 delegates, aimed at creating awareness about the existence of a marine protected areas professional certification programme; sharing experiences from the Western Indian Ocean region on capacity building initiative for Marine Protected Areas and demonstrating the importance of professional certification for improved protected area management.

The presentation drew much interest with participants from Parks Canada and Australian Parks indicating that they would get in touch with WIOMSA to discuss more about the programme. Proposals were also made that the WIOCOMPAS team contribute to the IUCN capacity building initiative. The Arusha congress was themed ‘Healthy Parks, Hungry people’ and aimed at raising the profile of protected areas rangers and to offer support, encouragement and capacity building to ensure the effective management of the natural assets under their care.

The congress was to play an important part as a step forward in the longer term process of better supporting rangers and protected areas in East Africa.

Other regions are now interested in learning and modeling the success of WIO-COMPAS. The IUCN WCPA Capacity Building Program has established a working group to develop a model certification program for other countries to adopt. They are looking at all international examples with WIO-COMPAS as the most developed experience to learn from. The unique feature is that this program will be for all protected areas - terrestrial and marine. This is a major expansion from the marine sector which WIO-COMPAS is focused on servicing.

In West Africa the WIO-COMPAS model will be highlighted and used to conduct a rapid capacity building assessment for Senegal. Here the focus is on building the competencies of younger staff. WIO-COMPAS was developed from the start as a model for others to follow. This now seems to be taking root at the global scale.

Looking Ahead: The WIO-COMPAS Learning Workshop

In the past year, WIO-COMPAS program celebrated the completion of the first generation of the program by holding a learning workshop in Nairobi, Kenya on the 18-19 of September 2012.

The goal of the Learning Workshop was to reflect upon and refine the entire WIO-COMPAS program from its inception in the year 2005, to the program’s development phase from the first certification assessment event in 2008 to the seventh certification assessment event that was held in May 2012. The workshop also sought to define a path for the next generation of the program including up scaling through continued certification events, the institutionalization of the programme in the western Indian Ocean WIO Countries and the provision of services to MPA PROs.

The workshop was attended by 25 participants amongst them MPA PROs, WIO-COMPAS assessors, key institutional partners and the program secretariat from WIOMSA and the CRC. The workshop discussions were informed and guided by two key background papers: “WIO-COMPAS First Generation Review (2005-2012)” - a draft green paper reviewing the entire WIO-COMPAS experience and lessons learnt; and the paper titled “Assessment of The Impacts of the WIO-COMPAS Programme.

The two papers were currently being finalized with comments and input from the Learning Workshop participants and other partners and will official be launched in 2013.
Western Indian Ocean Climate Change Workshop for Coastal and Marine Protected Areas
An Adaptation Partnership Workshop

Thirty nine participants from 9 Western Indian Ocean (WIO) countries and the United States were brought together by the Adaptation Partnership to identify climate change capacity building needs for coastal and marine protected areas in the WIO region in Cape Town South Africa in February 2012. The workshop was organized by the United States Agency for International Development (USAID), the United States Department of State (DOS), the National Oceanic and Atmospheric Administration (NOAA) and WIOMSA.

The purpose of the workshop was to identify the capacity requirements for managers of Marine Protected Areas (MPAs) within the WIO region to conduct vulnerability assessments and build adaptive responses to climate change impacts within their management frameworks.

The workshop kicked off with presentations from each country on Climate Change and MPAs grouped according to three capacity building categories: information, tools and experiential learning. During the workshop, participants were split into 5 separate groups which identified climate and non-climate stressors to key MPA resources (corals, fisheries, mangroves, sea turtles, seagrasses). The groups then identified some of the impacts of these stressors and management actions to address these, before categorizing and prioritizing capacity building needs to address these impacts.

From each of the five groups came a common thread of capacity building needs that are priorities for better management of climate stressors and protection of resources in MPAs. The following were the top five needs that were identified:

Understanding Climate Change
While MPA managers were confident with the knowledge and tools needed to address non-climate stressors, their confidence decreased when it came to climate stressors. It is important that there be a better understanding of the relationship between human activities and climate change impacts on communities, natural resources, and natural processes as well as ways to analyze and assess these impacts and adaptive responses. MPA managers need to have a better understanding of the impacts of climate change so that they can communicate this to community members and decision makers. This can be approached as Climate Change 101 training and/or Climate Change Adaptation training.

Improved Data and Information
All five resource groups identified the need for improved data and information tools to understand the impacts of climate change on resources. This could include tools to collect baseline data and to monitor the health of ecosystems and changes in the climate. Monitoring of climate change impacts is important but expensive, and sufficient and sustained resources are not available. It would be helpful to have standardized monitoring methodologies within the region.

Education and Awareness
A need for education, awareness, and communication programs and tools targeted at MPA managers, policy makers, and community members was an important need across the resources groups. This includes education about the impacts of climate change on MPA resources and tools for raising awareness among policy makers and community groups. It also includes training for MPA managers on how to engage policy makers.
makers and communities in order to generate political will for the creation of new MPAs and to support the management of existing MPAs, including the enforcement of MPA protection measures.

Communication capacity building activities should focus on both internal and external communication. For external communication, managers need communication tools and training on how to use communication materials as education tools. New materials should focus on climate change and target decision makers.

Internal communication and sharing knowledge needs to be improved across MPAs in the region. Communication within the MPA community will require a unique set of tools so that information sharing can take place more easily and with greater regularity. A discussion forum for continued dialogue with MPA managers and others working with MPAs and marine resources in the WIO can serve as a place for sharing best practices, lessons learned, and information tools and bringing concerns or problems for a collaborative discussion about solutions.

Vulnerability assessment
There was specific mention by the groups of the need for improved capacity to conduct vulnerability assessments, including training and assessment tools.

Alternative Livelihoods
Participants also identified a need to improve the types of alternative livelihoods available to communities in and around MPAs. This could include improved education opportunities, training, and incentives to reinforce the adoption of alternative livelihoods.

Developments since the workshop
WIOMSA, NOAA and USAID have been working with regional representatives and stakeholders to identify the most appropriate follow-on activities to this workshop, with the goal of improving the ability of MPA managers to better assess and adapt to the impacts of climate change. A proposal for a 3-5 year programme supporting this initiative has been developed and funding for two follow-up training activities has been secured for 2013 through USAID. Included in this Capacity Building programme are some of the following activities:

- Climate Change Communication – training and tools
- Climate Change 101 and/or Adaptation - training
- Vulnerability Assessment – training and tools for standardization across the WIO region
- Data Collection and Monitoring – training and tools for standardizing across the WIO region

Other longer-term capacity building activities may include:

- Provide more specific climate change focus in WIOMSA’s WIO-COMPAS trainings.
- Develop communication tools for managers, including enhancing report writing and presentation skills.
- Produce a manual (in four languages: English, French, Portuguese, Kiswahili) for climate change and related issues for use by MPA managers. This could be produced through a regional body like WIOMSA, which has good experience in supporting this kind of publication.
- Develop protocols for local level monitoring of climate-linked issues that could be undertaken by MPA staff and fed into a central regional network for access by managers from other parts of the region. This could be linked to the online platform for MPA managers discussed above.

A strong working relationship has been developed with NOAA and USAID (through the International Resources Group [IRG]) and WIOMSA looks forward to developing this partnership further during the planned long-term Programme. Other partners that could be involved in aspects of this Programme include the Agulhas and Somali Currents Large Marine Ecosystem (ASCLME) Project and the Reef Resilience Network of the The Nature Conservancy (TNC).
Since the year 2011, the Swedish consultancy firm NIRAS Natura AB and the School of Global Studies at the University of Gothenburg and WIOMSA have jointly organized 3 international training courses on “Integrated Sustainable Coastal Management” (ISCD) receiving 314 applications for the course and 79 participants from Bangladesh, Cambodia, China, DPR Korea, Indonesia, Kenya, Liberia, Tanzania and Vietnam being accepted and enrolled to attend the ISCD training program.

The programme targets decision and policy makers in coastal management and development; key persons with the ability to initiate and drive a process of change; subject-matter specialists with responsibilities related to planning and use of coastal zones and other professionals with key positions in organizations involved in integrated coastal development. In 2012, the ISCD program ran 2 courses, in October and December, with WIOMSA hosting the regional component of the course in Zanzibar with the ISCD Group A course of 27 participants running from the 8-19 Oct and the B Group training with 23 participants running from the 3-14 December 2012. The program’s organizers also conducted an analysis of the program’s achievements thus far and a few of the findings are discussed below.

According to a survey filled out by the program’s participants, about 90% feel that the ISCD program has met its specific objectives. By attending the program, participants have indicated that they have increased understanding of the importance and benefits of an integrated sustainable coastal planning and management for socio-economic development with respect to environmental impact, poverty alleviation and equality. They also have increased knowledge about the planning process for an integrated sustainable coastal development with 96% of course participants considering the course content to be relevant to the conditions in their places of work and 82 % being able to directly apply the new knowledge and experience from the training programme to their present employment.

The ISCD program has been successful in having participants initiate change processes in their home organizations. The participants have been able to link what they have learnt during the training course to their own work context and define relevant change idea based on the needs and opportunities in their organization. One such successful case is a participant from the National Environment Management Authority, Kenya (NEMA), James Kamula who has been working to strengthen the capacity of the Integrated Coastal Zone Management (ICZM) Steering Committee to coordinate coastal zone management and development in Kenya. Through training, creation and strengthening of linkages between the relevant bodies and stakeholders, the participant’s change process has enhanced the capacity of the ICZM committee to steer the implementation of Kenya’s ICZM Action Plan.

Through his intervention, composition of the steering committee has been expanded to include environmental NGOs, Government Agencies (The Ministry of Planning) and CBOs. The linkage between the ICZM Committee, District Development Committees (DDCs) and District Environmental Committees (DECs) have been strengthened by cross-participation in meetings organized by the respective Committees. DECs and DDCs have also adopted the ICZM action plan as a key guide in planning and implementing activities at the grass root level in the coastal zone. Modalities for information sharing between scientists and managers have been discussed and a workshop agreed to be held. This is an example of a participant working with the very core issues of the training programme, as responsible for the implementation of the national ICZM Action Plan. Through participation in the programme a stronger emphasis has been put on stakeholder participation and sector integration and the project will most probably have a positive long term impact well in line with programme objective.

Results from the survey also indicate the formation of national and regional networks and increased collaboration between participants particularly in the implementation of their change processes for example in Tanzania where a participant from the Marine Parks and Reserve Unit has successfully collaborated with a participant from an umbrella CBO representing local fishermen in Mtwarra to integrate the fishermen in the co-management of the marine park. Similarly, working together, through the networking opportunities afforded by the ISCD training program, one participant replicated an ongoing project in Lamu, Kenya in Mtwarra region, Tanzania and successfully sought funding for the project, launching it in August 2012.

The course participants have given the ISCD organizers valuable feedback that has been used to sharpen the focus and
the delivery of the program. Based on the experience from the first year of implementation the work with the Change Project has been evaluated and gradually updated. One of the main challenges that the program has had has been to make the participants understand what we mean by organisational change. A common misunderstanding has been that the Change Project should be “yet another implementation project” requiring external financial backing and demanding a clear start and stop date. To avoid this thinking and to clarify the idea of an internal change process the program has gradually shifted from the term change “project” and rather used “process” and “idea” depending on the stage and issue. There has also been a clarification of the linkage between the SWOT analysis and the selection of a suitable change idea resulting in participants having a sharper and relevant focus while selecting change ideas within their association. With these changes in place, there is already positive feedback from the change process. There is generally a high level of acceptance and enthusiasm for the Change Process.

When comparing the evaluations of 2011 and 2012 there is a clear development in the attitude towards the change project. In 2011 the most common experienced difficulty was lack of funding while in 2012 the participants were more worried about how to make their organisation understand ISCD and accept to change.

Next Steps
The course participants have expressed the feeling that the program has been well worth it and that more should be done to raise the profile of the ISCD program. Suggested activities include a shorter training program is designed for high level representatives from their organizations that highlights the core issues of ISCD with special focus on governance issues. There is a large interest for alumni meetings and supported network activities among the participants.

The ISCD program is sponsored by the Swedish International Development Corporation Agency (Sida) and will run for 5 years. Visit the NIRAS website www.niras.com to learn more about the program.
Bird watching at dusk, Sunday’s Estuary, Addo Elephant National Park, Algoa Bay, South Africa
© P Chadwick
WIOMSA recognizes that due to the complexity of coastal and marine issues, the need for dialogue involving different stakeholders such as scientists, practitioners, managers and decision-makers, as well as representatives of the private sector and communities, cannot be over-emphasized. Such dialogue, which have been through different types of fora have proven to be effective platforms for engagement and for debating issues of priority among these different groups. More importantly dialogue has been used to build partnerships and influence decision-making processes and policy formulation and revision. In 2012, WIOMSA in collaboration with partners organized three such events.
In line with WIOMSA’s ambitions to strengthen science-policy interaction and to support the application of research for improved management, the Association in collaboration with FAO under the FAO/EU Smart Fish project of the Indian Ocean Commission, organized the Sea Cucumber Fisheries: an Ecosystem Approach to Management in the Indian Ocean (SCEAM Indian Ocean) workshop which was held in Zanzibar, Tanzania from 12-15 November 2012.

The workshop, which was attended by senior fisheries officers (selected based on their position and ability to influence changes in management of sea cucumber fisheries in their countries), had a regional focus with participants from fifteen countries in the Western Indian Ocean (continental countries and islands), the Red Sea, western and eastern Arabian Sea, eastern Indian Ocean (India and Sri Lanka). The Zanzibar workshop followed the format of a similar workshop (SCEAM Pacific) held in Fiji Islands in 2011.

At the workshop, the participants were exposed to up-to-date research on sea cucumber ecology and fisheries management. This information was then applied by participants in workgroup sessions to define the status of their fisheries using a “manager’s toolbox” manual developed by the Australian Centre for International Agricultural Research (ACIAR). Once each participant had defined the status of the fishery in his or her country, manuals developed by FAO2, 3 were then used to identify relevant regulatory measures and management actions to improve fishery sustainability. These manuals assisted the participants by providing “roadmaps”, but the workshop emphasized the diversity of fishing activities and institutional systems in the region and that the roadmap is a starting point to be modified for each fishery circumstances.

An important and appreciated component of the workshop was the field day, which was arranged by Dr. Narriman Jiddawi from the Institute of Marine Science (IMS) in Zanzibar. That morning, Prof. Chantal Conand presented updated information about taxonomy and Indian Ocean commercial sea cucumber species identification. This was later put into practice when the participants walked through the intertidal areas near Fumba village and went snorkeling around Kwale Island. The day finished at a processor’s facility in Mtoni where processing was explained and participants could view sea cucumber products (bêche de mer). In the post-workshop satisfaction forms, all of the participants responded that the activity had been useful for them– emphasizing that the workshop format helped to guide fishery managers through existing publications and connecting science with policy.

The workshop was organized with financial contribution from Sida through the MASMA Programme, FAO under the FAO/EU Smart Fish project of the Indian Ocean Commission, ACIAR and the Sultanate of Oman through the Fishery Support Unit within the Indian Ocean Rim Association for Regional Cooperation (IOR-ARC).
Since attending the Second Conference of Parties (COP) to the Nairobi Convention in Mauritius in 1999, WIOMSA has participated in all subsequent COPs recognizing the value of the COPs as an important regional platform for strengthening partnerships for actions at the regional level, creating dialogue on important regional issues and enhancing the linkages between the scientific community and decision-makers.

In the COP7, held in Maputo, Mozambique from the 12-14 of December 2012, WIOMSA acting both independently and as the Secretariat of both Consortium for the Conservation of the Marine and Coastal ecosystems (WIO-C) and the Forum of Heads of Academic and Research Institutes (FARI), played a key role in the organization phase through preparing background documents for the meeting and in drafting and sponsoring some of the decisions. Some of these decisions, included: establishment or strengthening of national and regional networks of experts (Decision CP7/6(4)); Environment Management for Oil and Gas Exploration (Decision CP7/8); Climate Change Adaptation and Mitigation (Decision CP7/9); Green Economy (Decision CP7/14); and Science to Policy Engagements (Decision CP7/17).
Promoting green economy

In line with the outcomes of the United Nations Conference on Sustainable Development (Rio+20) held in Rio de Janeiro, June 2012 and the 14th session of the African Ministerial Conference on Environment held in Arusha, September 2012 (regarding green economy), the Nairobi Convention urged the Contracting Parties to develop and implement green economy policies in accordance with national sustainable development plans, strategies and priorities. They also asked them to take into consideration the contribution of the natural blue capital and to share information on best practices on green economy strategies, tools and methodologies that relate to marine and coastal resources. A study on green economy tools and methodologies applicable for the Western Indian Ocean region was recommended to be undertaken by the Secretariat in collaboration with partners.

Climate change on the agenda

Building on the report on “Climate Change Impacts in Coastal and Marine Areas of the Western Indian Ocean Region: An Assessment of Problems, Solutions, and Strategic Options for Promoting Climate Resilient Development in the WIO Region”, the decisions on climate change called on the Contracting Parties to take urgent adaptation and mitigation measures to address the adverse effects of climate change on marine and coastal areas, to mainstream climate change into national programmes and policies and to develop a project on the integration of climatic variability and change into national strategies for implementation of integrated coastal management programmes in the Western Indian Ocean region.

The Convention urged the Nairobi Convention Secretariat in collaboration with partners to facilitate the finalization of the regional strategy on climate change impacts, adaptation and mitigation in the marine and coastal environment of the Western Indian Ocean region and to develop regional projects on climate change adaptation and mitigation.

Science to Policy partnerships strengthened

The Science for Policy Workshop, which was held from 10-11 December 2012, provided the basis for the majority of the decisions adopted during the COP 7. In recognition to the role played by the workshop in the successful conclusion of the COP 7, the Parties to the Convention urged the Secretariat to hold and encourage partners to support regular science to policy dialogues to provide continuous interaction between the scientists, civil society, private sector, policy and decision makers.

Role of WIO-C recognized

The role played by the WIO-C in preparing technical papers for discussions and in the development and implementation of the work of the Convention and in the protection of the marine and coastal environment of the West Indian Ocean region was acknowledged in the adopted decisions of the COP 7. This was also stressed by Mr. Ali Kaka, the Chair of the WIO-C in his remarks “WIO-C has contributed substantially to the programme of work of the Convention and has maintained a consistent source of expertise to countries in the region as well as emerging initiatives in the region.
Towards the end of 2012, WIOMSA played an important role in the organization of the Science for Policy meeting which was held on 10th and 11th December 2012, directly before the meetings of the Heads of Delegation at the Conference of Parties. The meeting attended by over 85 participants (about 40 of whom were policy experts from national institutions of the ten Contracting Parties to the Convention and the rest were from partner organizations including national and regional NGOs, UN Agencies, and research and academic institutions). The workshop provided the basis for the majority of the decisions adopted during the meeting of the Contracting Parties.

The purpose of the workshop was to discuss current and emerging issues in the marine and coastal environment of the WIO to inform decisions to be taken at the COP7 meeting. The workshop format allowed for a number of thematic areas to be presented by experts followed by extensive discussion and debate to come out with agreed upon recommendations that could be taken forward for consideration by the policy makers.

In keeping with the Memorandum of Understanding between WIOMSA and the Nairobi Convention, which officially recognizes WIOMSA as an important provider of technical support to the Convention, the Association was contracted to develop several key background papers for discussion and consideration before and during the COP 7 meeting. The following papers were produced by WIOMSA with the assistance of partner organisations:

- Oil and gas exploration in the WIO region in collaboration with WWF, IMO and IOC
- Adaptation to climate change in collaboration with the African Union, SADC, IUCN and WWF.
- Green economy in a blue world, including lessons for the WIO region.
- Assessment of the marine and coastal environment in the WIO region in collaboration with FARI national research institutions.

In addition, WIOMSA was tasked with preparing a draft new Action Strategy for the Convention which was presented at the Science for Policy meeting. This process involved a comprehensive review of the Action Plan for the Eastern African Region of 1985, taking into account the recently adopted Amended Nairobi Convention, LBSA Protocol, and the WIO-Lab Strategic Action Programme. This request from countries emanated from concerns about the continued deterioration in the biological diversity and productive capacity of our oceans, and the changing context within which stakeholders in the WIO region need to act to address these challenges, and potential opportunities associated with these changes. This Strategy continues to be developed and will be completed after an extensive stakeholder consultation process for presentation at the next COP in 2014.

A total of 18 thematic areas were covered over the two days of the Science for Policy meeting. The issues that were discussed included Ecosystem Based Management (EBM) of the marine and coastal areas of the WIO; the Convention for Biological Diversity’s (CBD) process of assessing ecologically or biologically significant areas (EBSAs) in the WIO; the Food and Agriculture Organisation of the UN (FAO) process of identifying Vulnerable Marine Areas (VMEs) in the Convention area; efforts to manage areas beyond national jurisdiction (ABNJ); potential Marine World Heritage Sites in the WIO; a potential conservation area in the northern Mozambique Channel (NMCCA); potential uses of an Ocean Health Index (OHI) in the WIO countries; and the Seychelles led WIO Coastal Challenge initiative (WIO-CC).

Also discussed during the meeting were the reports on progress with the draft ICZM Policy for the Nairobi Convention; the Coral Reef Task Force which is hosted by the Convention; current status of seagrasses and mangroves in the region and management requirements; the need to move towards greening the marine sector (ie. the Green Economy for a Blue World initiative of UNEP; a draft Climate Change Strategy for the WIO; emerging issues within the Oil and Gas sector; the importance of birds as ecosystem level indicators in marine areas; a Mangroves for the Future programme for the WIO aligned with the ongoing initiative in south east Asia; and finally an update on the important issue of shark conservation in the WIO.

One of the main outcomes of the meeting is ensuring contributions from a wide range of stakeholders were considered by the countries, and that a set of inclusive and transparently developed recommendations were considered in drafting decisions for COP7. The decisions
adopted during the COP included many of the recommendations coming out of the Science for Policy meeting, indicating the importance and relevance of these discussions prior to the decision making process.

Discussion with delegates at the meeting suggested that the initiative of bringing scientists and policy-makers together at a regional level, prior to finalizing decisions, was a good idea, and one that should be supported into the future. This is an area where partners such as WIOMSA could play an important supporting role to the Nairobi Convention Secretariat and the sentiment expressed by many at the meeting was that they would like to see similar gatherings being held more regularly in the region.
The main goal of the WIOMSA Resource Mobilization strategy is to ensure WIOMSA’s financial future through securing long term sustainable financing for the Association’s core activities, broadening its donor base, developing new sources of funding while maintaining and enhancing support from WIOMSA’s traditional donors and strengthening the Secretariat to support ongoing fundraising activities. For realization of this goal, WIOMSA is exploring and in some cases implementing different innovative ways to ensure resource mobilization efforts provide sufficient funds to enable the Association start covering its core costs from its own sources. The current main sources of WIOMSA’s funds are sale of publications, membership fees, rental fees from the WIOMSA building and management fees from projects implemented by the Association. In 2012, a new source of funds for the Association, the trust fund was established.
After a long period of assessing various options for an investment fund for WIOMSA, the 17th March 2012 marked an important day in WIOMSA's history. The WIOMSA Trust was launched in Mauritius, where the trust is registered. This is an exciting milestone for WIOMSA which few believed would be achieved so soon in the history of the Association. This milestone was marked by the signing of the WIOMSA Charitable Trust Deed by - founding Trustees of the Trust, Dr. Magnus Ngoile from Tanzania, Dr. Pascale Chabanet from Reunion, and Prof. Lena Gippert from Sweden, and the representative of the Mauritius-based Loita Management Services Limited. Dr. Salomao Bandeira, the WIOMSA Vice President also signed the Deed as required by Law.

The WIOMSA Trust fund was officially launched by Dr. Bandeira, at La Plantation Hotel in Mauritius at a reception that was hosted jointly by WIOMSA and the Mauritius Oceanography Institute (MOI) and was attended by members of the WIOMSA Board, the trustees of the Trust as well as invited partners representing different organizations in Mauritius. Other speakers at the event, who lauded the move to establish the trust, included the founding trustees, Dr. Daniel Marie who represented the Officer in Charge of MOI, Rezah Badal, and Susanna Dalais from Loita Management Services Limited. Speaking on behalf of the WIOMSA President, Dr. Bandeira told invited guests that the launch of the trust marked the culmination of an extensive and well thought out process that started with the approval of the WIOMSA Resource Mobilization Strategy in the Fourth WIOMSA General Assembly in 2009 in Reunion.

The process had involved the effort, time and commitment of the Board of Trustees, the Secretariat, consultants and partners to set up an important financing tool that would channel funds towards supporting the achievement of agreed priorities and goals for WIOMSA and the region within the framework of the Association's strategic plan.

Dr Bandeira gave the background of the establishment of the trust saying that it was one of the key components of the WIOMSA Resource Mobilization strategy. WIOMSA has received generous support from the international community since inception, notably from the Swedish Government.

As a maturing organisation, realising that the sustainability of the organisation relies on expanding its funding base and diversity of funding streams, the Association investigated several options to further strengthen its position in the region. The establishment of the trust is a first for marine science in the region as it follows models generally used in the terrestrial conservation sector. The WIOMSA Trust aims at providing a reliable and sustainable source of funding to support research activities in the Western Indian Ocean region and to support WIOMSA’s core activities. Initial contributions to the trust have come from the Swedish Government and from income generated by WIOMSA through several service provision activities. It is anticipated that these modest initial contributions will encourage other organisations from within and outside of the region to add their support to the fund for the continued benefit of regional marine science and improved management of the region’s rich marine and coastal resources.

The founding trustees are prominent individuals in their own right, and together with the Loita Management Services Ltd, are tasked with the primary responsibility to guide the Trust through the initial stages of establishment. They will also use their considerable combined influence together with the WIOMSA Board of Trustees and the WIOMSA Secretariat, to leverage resources and support to capitalise the trust over the next five years. The success of the Trust depends on continued commitment and support, par-
particularly from friends of WIOMSA, members through payment of annual subscription fees, partners through either executing joint projects and/or requesting WIOMSA’s services, and donors, funders and the private sector through providing direct funding to the trust, or as interest-free loans. While annual targets for capitalization of the Trust were achieved in 2012, it will remain an ongoing challenge to ensure that returns from investment of the capital portion are sufficient to meaningfully contribute to covering the core costs of the Association. This will require considerable funds to be added to the Trust and wise investments to be made under difficult global financial conditions. Recognising these challenges, the Secretariat, WIOMSA Board and the Trustees of the Trust have identified several opportunities and will continue to work hard at ensuring that this innovative approach to organizational sustainability is a success in the longer term.

In order to ensure its future sustainability, the Association in its Fourth WIOMSA General Assembly held in Reunion in August 2009, approved two key initiatives from the Resource Mobilization Strategy.
Ship wreck on the rugged Agulhas Coastline, Agulhas National Park, South Africa

© P Chadwick
Under the Information Dissemination and Communication program, WIOMSA focuses on creating an issue-driven dialogue between policy-makers, the scientific community and other relevant stakeholders, around key issues, with the intention of positively influencing outcomes. In support of this a number of activities were implemented in 2012 including the organization of science to policy dialogues and the production of the Western Indian Ocean Journal of Marine Science (WIOJMS), WIOMSA Newsbriefs, the WIOMSA Magazine and other publications including a policy brief, two field guides and two books.
NEW PUBLICATIONS IN 2012

Preparing for Climate Change in the Western Indian Ocean: Identifying Climate Refugia, Biodiversity Responses and Preferred Management

This Book, part of the WIOMSA Book Series and stems from the WIOMSA Funded Climate Change Project “Preparing for climate change by identifying effective coral reef fisheries and protected area management options in the Western Indian Ocean”. The research presented in the book develops a synoptic view of the biodiversity and resilience of coral reefs to climate change in the western Indian Ocean. The study investigated the ecology of coral reefs in the context of climate change disturbances and their expected continued influences on reef ecology. The study had three major foci: the ecology of coral reefs, the ecology of algal symbionts in corals and an evaluation of the types of management restrictions that coral reef stakeholders in the region prefer and are likely to support and thus might be the most easily achieved in the region and in specific communities. The book makes key recommendations that will be useful in planning adaptation that will improve the chances for the persistence of reefs and communities that depend on them.

WIO-COMPAS Program Handbook

This handbook provides a detailed description of the Western Indian Ocean Certification of Marine Protected Area Professionals (WIO-COMPAS) Program elements, processes, rules and policies. It is a resource to help marine protected area (MPA) professionals, MPA management authorities, donors and potential applicants understand how the Program is structured and how to engage in this unique offering. It is also a guide to assessors and members of the certifying bodies to ensure transparency and accountability to rules.

The 2nd Edition of Poissons de l’océan Indien et de la mer Rouge

This second edition contains an additional 340 species and about 600 new photos, all these the result of 4 years of research work in the Indian Ocean by Alain Diringer. This edition was edited by Alain Diringer and Marc Taquet. The editors have partnered with Elsevier to produce the digital English version of the new book. WIOMSA has partially supported the production of both French and English versions of the book. The first Edition of the Poissons de l’océan Indien et de la mer Rouge, which was partially funded by WIOMSA, was published in 2007. The first edition of the guide was launched during the Fifth WIOMSA Symposium which was held in Durban in October 2007.

Field Identification Guide to the Living Marine Resources of Kenya

This field guide, edited by Rashid Anam of Kenya Marine and Fisheries Research Institute (KMFRI) and Edoardo Mostarda of FAO Fisheries Department, covers the major resource groups likely to be encountered in the fisheries of Kenya. These includes shrimps, lobsters, crabs, bivalves, gastropods, cephalopods, sea cucumbers, sharks, batoid fishes, bony fishes, and sea turtles. Each resource group is introduced by a general section on technical terms and measurements pertinent to that group and an illustrated guide to orders and families of the group. The more important species are described in a subsequent guide that includes scientific nomenclature, FAO names in English and French (where available), local names used in Kenya, diagnostic features, one or more illustrations, maximum size, and notes on fisheries and habitat. Colour plates for a large number of the species are included. The guide is fully indexed and a list of further literature is appended. The Foreword of the Guide has been written by Prof M. J. Ntiba, the Permanent Secretary in the Ministry of Fisheries Development in Kenya and member of WIOMSA Board of Trustees.
Policy Brief: Promoting collaborative management of small-scale fisheries in the tropics

This Policy brief is based on the results from a comprehensive empirical study on fisheries co-management from Africa, Asia, and the Pacific, provide important policy directions on: making co-management work for people’s livelihoods; fostering the conditions for high compliance, and sustaining fisheries. The Brief, which was edited by Josh Cinner and Tim McClanahan, is based on research works conducted across 42 co-management arrangements in Kenya, Tanzania, Madagascar, Indonesia, and Papua New Guinea, aimed at assessing the social and institutional conditions that can lead to better livelihood outcomes, higher compliance, and healthier fisheries. The work undertaken in the WIO region was part of the MASMA-funded project on “The effectiveness of community-based organizations in managing coastal resources in the Western Indian Ocean”.

Volume 10(2) of the WIO Journal of Marine Science

Volume 10 No. 2 of the Western Indian Ocean Journal of Marine Science consists of the following nine papers:

i. Wind Patterns of Coastal Tanzania: Their Variability and Trends – S.B. Mahongo, J. Francis and S.E. Osima
ii. Dissolved Nutrients from Submarine Groundwater Discharge in Flic en Flac Lagoon, Mauritius – Roshan T. Ramessur, Kishore Boodhoo, Janita Balgobin, Pavel Povinec2 and W.C. Burnett
iii. Effect of the Presence of Seagrass and Nutrients on Growth Rates of Farmed Kappaphycus alvarezii and Eucheuma denticulatum (Rhodophyta) – Flower E. Msuya and Dotto Salum
iv. The Ophiocomiidae species (Ophiuroida: Ophiocomidae) of South Africa – Jennifer M. Olbers and Yves Samyn
vi. Status of Coral Reef Fish Communities within the Mombasa Marine Protected Area, Kenya, more than a Decade after Establishment – Cosmas N. Munga, Mohamed O.S. Mohamed, Nassir Amiyo, Farid Dahdouh-Guebas3, David O. Oubara and Ann Vanreusel
viii. Bird Density and Distribution Patterns in Relation to Anthropogenic Habitat Modification around an East African estuary – Nickson E. Otieno, Helida Oyieke, Maurice Ogoma and John Kochey
ix. Abundance and Distribution of Indo-Pacific Humpback Dolphins (Sousa Chinensis) in the Shimoni Archipelago, Kenya – Samuel V. Meyler, Hugo Felix and Rachel Crouthers

Annual Report for 2011

Every year WIOMSA publishes an annual report with articles highlighting the Association’s key projects and achievements, presenting its financial statements and results and profiling selected work from WIOMSA and its partners over the previous year. The 2011 Annual Report adapted a new reader friendly format. Some of the changes include the Highlights from the Secretariat which reviews and summarizes the Association operations over the year and the grouping of articles into thematic areas that illustrate WIOMSA’s programmatic areas: Planning for the Future, Marine Science for Management; Capacity Building; Information Dissemination and Communication; Resource Mobilization and Partnerships; Recognizing the best; and Member’s Corner.

theWIOMSA MAGAZINE

The theme of the issue is Community Based Marine Conservation and Management Initiatives. The articles describe the processes different countries have gone through in setting up their collaborative arrangements detailing what has worked or not worked so well. The articles include those detailing community based management areas in Kenya and Madagascar and associations of resource users such as the Kuruwitu Conservation and Welfare Association in Kenya, the Watamu Turtle Watch of Kenya and the Coastal Conservation Association of Mozambique. A small but potentially influential trend to watch is collaboration with businesses and the article on “Sharing Benefits from the Coast”, describes the effectiveness of benefit sharing arrangements between local communities and the private sector.
Aerial View of a section of the Whale Trail with Vaalkrans Hut in the Frame, De Hoop Nature Reserve and Marine Protected Area © P. Chadwick
Partnership building is one aspect where WIOMSA has made significant progress in terms of the number, nature and diversity of new collaborative partnerships/networks established. Three new partnerships were established in 2012: with the IGAD Climate Prediction and Applications Centre (ICPAC) and the Intergovernmental Oceanographic Commission of UNESCO’s Sub Commission for Africa and the Adjacent Island States (IOC-AFRICA) for improvement of climate outlooks for the short and long rain seasons in the Greater Horn of Africa region, through inclusion of information on oceanic processes; and lastly with the Food and Agriculture Organization (FAO) for enhancement of management of sea cucumber fisheries; and with the Nairobi Convention on oil and gas as well as the green economy.

WIOMSA also facilitated the establishment of the new WIO Mangrove Network, whose main aim is to facilitate experience-sharing and reciprocal support in terms of expertise in research and management of mangroves in the region. This section also looks at the work of the Consortium for the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean (WIO-C) in 2012.
A new partnership has been developed with the IGAD Climate Prediction and Applications Centre (ICPAC) and the Intergovernmental Oceanographic Commission of UNESCO’s Sub Commission for Africa and the Adjacent Island States (IOC-AFRICA), to produce regional consensus climate outlooks for the short and long rain seasons in the Greater Horn of Africa region. Through this partnership selected oceanographers from the region were brought together to identify oceanic processes that drive climate in the region. These experts provided ocean data and products that are required by the regional Climate Outlook Forum to improve their forecasts.

In August 2012, ICPAC in collaboration with the IOC-AFRICA, WIOMSA, the Institute of Marine Science (IMS), World Meteorological Organization (WMO), Tanzania Meteorological Agency (TMA), and other partners organized the Thirty Second Greater Horn of Africa Climate Outlook Forum (GHACOF 32) in Zanzibar, Tanzania “to provide regional consensus climate outlook for the September to December 2012 rainfall season as well to address challenges associated with integrating information on the Indian ocean systems for improved early warning of climate extremes over the Greater Horn of Africa (GHA)”.

The forum was held within the framework of the Intergovernmental Authority on Development (IGAD) regional strategy for mainstreaming climate information in key socio-economic sectors for disaster risk reduction and sustainable development, through CLIMDEV project funded by the African Development Bank (ADB). The forum brought together oceanographers, climate experts from national Meteorological and Hydrological Services (NMHS), and other scientists from the GHA region and renowned centres worldwide as well as users from various sectors and decision-makers. It provided a regional interaction platform where participants were able to review lessons / experiences from the use of the products provided in the previous regional climate outlook forums.

Oceanographers involved in the forum are in the process of developing a system that will be used to produce marine forecasts that will feed into climate outlooks. A team of ocean experts has been put in place with task to develop regional ocean models that can be used during capacity building workshops conducted for GHA countries as well as in the operational long range forecasts, in collaboration with operational and research centers within the GHA region and abroad.
The WIO Mangrove Network, whose main aim is to facilitate experience sharing and reciprocal support in terms of expertise in research and management of mangroves in the region, was established in 2011 during the WIOMSA-sponsored Western Indian Regional Workshop on Vulnerability Assessment of Mangroves to Climate Change and Related Anthropogenic Pressures held in Mombasa in October 2011.

The main objectives of the Network are to facilitate: expertise sharing/capacity development in mangrove research and management across the region; standardization of methodologies in conducting assessments and management practices; production of regional publications and policy briefs on mangrove research and management and ensuring dissemination of such outputs; raising the profile of mangroves as a critically important ecosystem supporting many livelihoods in the region; and Development and delivery of community based training programs on sustainable mangrove management and conservation.

In its short period of existence, the Network has started to implement activities and get recognition by regional bodies. During the Seventh Conference of Parties to the Nairobi Convention held in Mozambique in December 2012, the Network was formally recognized by the Nairobi Convention.

With support from WIOMSA, the Network is working on the production of a multi-authored, peer reviewed mangrove management book for the region based on country case studies that will be titled “Mangrove Status and Management in the WIO Region: A Regional Book Based on Country Case Studies”.

This will be the first ever regional book on mangroves that will comprehensively address interdisciplinary regional issues of ecology, socio-economics, and conservation built from country specific cases in one volume. Where appropriate, case specific and interesting aspects such as the ancient WIO region-Arab tie in mangrove trade, rice farming, use of mangroves as shrines, etc. will be presented in referred boxes. The book will also explain the actual management institutions and regulations of the resource at country-level. The book will have six country chapters covering Mozambique, Madagascar, Tanzania, Kenya, South Africa, and combined representative chapter for Seychelles, Comoros, and Mauritius.

In October 2012, the Network and the United States Forest Service (USFS) in collaboration with other regional partners organized the Western Indian Ocean (WIO) Mangroves and Carbon Workshop in Maputo, Mozambique. The meeting brought together global practitioners in mangrove carbon assessments comprising of scientists, managers and policy makers to share regional and global experiences in carbon stock assessments in mangrove ecosystems including associated methodologies in the context of an emerging interest in mangroves as critical carbon sinks for climate change mitigation.
Since its establishment in 2007, 2012 was the most active year for the Consortium for the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean (WIO-C). The Consortium met twice, provided technical support to the Western Indian Ocean Coastal Challenge (WIO-CC) and organized its first side event during the IUCN World Conservation Congress held in Jeju, South Korea in September 2012. WIO-C, whose main objective is to align, harmonize, and move forward marine and coastal management activities within the context of a regional and country level framework, is currently hosted by WIOMSA. The main activities of the WIO-C are intended to focus on networking, coordination, lobbying, decision support, resource mobilisation, and programme development and implementation.

Meetings of the WIO-C

In 2012, the WIO met in August and December 2012 in Maputo, Mozambique. The August meeting discussed amongst others guidelines for new members; operational modalities particularly in relation to planning and implementation of joint activities and code of conduct; drafts of the technical reports to be submitted to the Seventh meeting of the Contracting Parties to the Nairobi Convention; formalization of the technical support to WIO Coastal Challenge (WIO-CC) and WIO-C participation to the World Conservation Congress, South Korea. One of the major outcome of the meeting was the appointment of WCS-Madagascar and WWF-Madagascar as the focal institutions for WIO-C in the WIO-CC.

In other words, WCS and WWF will be providing technical support to the WIO-CC on behalf of the Consortium. The December meeting focused on WIO-C inputs to the COP7, as the Consortium members not only prepared most of the background documents, but also sponsored a number of decisions. During the COP7, the Consortium succeeded to establish itself as a key partner of the Nairobi Convention.
Provision of Technical Support to the WIO-Coastal Challenge

WIOMSA and WWF-Madagascar facilitated the first Regional Technical Workshop of the WIO-CC Platform, which was held in Seychelles in March 2012. The second workshop, which was facilitated by WCS and WWF, was held in September. Discussions on formalization of the technical support provided by WIO-C to WIO-CC are in advanced stage and an agreement between these two organizations will be signed in 2013.

A side event during the IUCN World Conservation Congress

WIO-C organized a Knowledge Café on “Uniting for action in the Western Indian Ocean: climate resilience, food security and biodiversity conservation”, on 7th September 2012 during the 2012 IUCN World Conservation Congress held in Jeju, South Korea from the 6-15 September 2012.

The Café was attended by representatives from civil society organizations working in the WIO Region from South Africa, Mozambique, Tanzania, Kenya, Mauritius, Seychelles, Madagascar, as well as regional and international groups. These participants met to discuss the imperative and challenges of building a partnership for addressing the growing impacts of climate change on coastal communities, biodiversity and economies throughout the region. Lessons learned were shared from on the ground efforts in Madagascar and other regional efforts from the Caribbean to the Congo Basin to Micronesia.

As a group, the organizations represented in the Café recognized that the building blocks for more long term collaboration exist in the region and need to be better coordinated for more efficient and successful outcomes on the ground. They also acknowledged that climate change, which represents one of the region’s greatest challenges, is also an opportunity for coalescing efforts by different actors and sectors to organize and collaborate in a manner not before realized. The role of existing civil society networks already functioning in the region at various scales were recognized as the essential catalysts for future action in partnership with governments and regional bodies.

Report on Climate Change in the Western Indian Ocean: A Situation Assessment and Policy Considerations

WCS with funding from the Africa Biodiversity Collaborative Group (ABCG) and on behalf of WIO-C produced a report on “Climate Change in the Western Indian Ocean: A Situation Assessment and Policy Considerations”. The report assessed climate change in the Western Indian Ocean and summarized regional, national and WIO-C member interventions in the field of adaptation of climate change. The report undertook to review existing national and regional climate change strategies prepared by countries; reviewed existing climate change strategies and plans of the WIO-C members; prepared an inventory of ongoing national and regional Climate Change programs in the region; identifying important gaps in regional climate change programs.
Male fiddler crabs, Uca chorophtalmus, on the mangrove back-flat on Inhaca Island, Mozambique © P. Moksnes
This corner summarizes stories of WIOMSA Board members and individual members who have made news! This section also introduces new members as well as highlights main activities undertaken by different organs of the Association.
Retired Oceanographic Research Institute Director feted in style

On the 6th of June 2012, a collection of Prof. Rudy van der Elst’s peers, friends and colleagues gathered together at an official function held in the aquarium at uShaka Sea World to celebrate Rudy’s 42 years of distinguished service to the Oceanographic Research Institute (ORI), KwaZulu-Natal and South African marine science, and to wish him well for the future. During a brief ceremony hosted by Dr Mark Penning, outgoing CEO of the South African Association for Marine Biological Research (SAAMBR), Prof. van der Elst was presented with the Megladon Award by the Chairman of SAAMBR, Mr. Chris Rudham, and Mr Barry Rebeck, the Association’s President.

The Megladon Award is the Association’s highest accolade, and has only been bestowed on three other recipients in SAAMBR’s 60 year history. Prof van der Elst was also presented with a coffee-table book containing photographs from his long career, and messages from his ORI colleagues and friends over the years. In addition, the new director of ORI Dr. Larry Oellermann, presented Prof van der Elst with the flag that used to fly above ORI’s research vessel the “RV David Davies” during the 1960’s, so that, “He would always be able to work under the ORI banner, wherever the future may take him”. Prof van der Elst and his wife Lynn have retired to Mossel Bay and he continues to play a role at ORI as a research associate and as a member of the WIOMSA Board of Trustees.

WIO Scientist on the move

By Peter Pissierssens of IOC-UNESCO

On 2 April 2012 our colleague Mika Odido moved to Nairobi, Kenya to take up a new IOC position. The secretariat for the IOC Sub Commission for Africa and the Adjacent Island States based at the UNESCO Regional Office for Science in Africa, Nairobi, Kenya begun operations in March 2012, headed by Mr. Odi do, who was appointed the first IOC Coordinator for Africa. Mr. Odido continues to manage the ODINAFRICA-IV project, as part of his new

WIOMSA Wins Tax Award

WIOMSA was awarded the Certificate of Merit as the Second Winner in the Medium Taxpayers Category in Zanzibar, by the Tanzania Revenue Authority (TRA) in recognition of the Association’s outstanding tax compliance (including the timely and voluntary payment of tax) during 2011/2012 financial year. WIOMSA was one of 12 award recipients in the 6th annual taxpayers awards ceremony presided over by the Minister in the President’s Office for Finance, Economy and Development Planning, Hon. Mr. Omar Yusuf held at the Zanzibar Beach Resort on the 7 November 2012. WIOMSA is the first non-governmental organization in Zanzibar to win such an award. We are delighted with the recognition that WIOMSA, as a not-for-profit organization has out-competed commercial entities in tax compliance.

Strengthening the role of WIOMSA Country Coordinators

7 of WIOMSA’s Country Coordinators (CCs) met on 26th September 2012 in Mombasa, Kenya to review activities of the CCs in 2011-2012, including the status of WIOMSA membership in each country and a discussion on the paper on ‘Strengthening the role of Coordinators’ that was completed by an external consultant. The objective of discussing the paper was to determine if its recommendations were useful and which of those should be followed up as well developing suggestions on improving the effectiveness of the CC system in the region. The CC’s meeting followed in the wake of the inception of the new MASMA programme, highlighting the importance for discussing future roles of CCs in achieving some specific objectives of the program.

Report back on activities in South Africa (Michael Schleyer), Mozambique (Almeida
Guissamulo), Tanzania (Charles Lugomela), Kenya (Jacqueline Uku), Zanzibar (Nariman Jiddawi), Madagascar (Harifidy Ralison), Mauritius (Daniel Marie) and Reunion (Lionel Bigot) included discussions of successes and challenges in each country, updates on membership issues, and recommendations for improved country level operations. It was apparent that each country was unique in the manner in which CCs operated and that this diversity needs to be embraced and solutions to particular situations sought to improve the impact that this group of dedicated individuals can have at a local level.

The recommendations from the paper on ‘Strengthening the role of Coordinators’ were agreed to in principal by the participants with emphasis being placed on several points including the structure of the CC network; the relationship between CCs and the Secretariat; induction of new CCs; recognition of the role that CCS play both nationally and regionally; issues associated with networking among CCs; workplans, budgets and reporting; communications; ideas for new activities at a national level; and technical issues that would enhance support to CCs.

The CCs also made other key suggestions for consideration and action such as: the need for formal recognition through letters of appointment to institutions and employers following the election of CCs; improved communication with the WIOMSA secretariat particularly in relation to the recruitment of new members and the need for a focal point in the Secretariat to interface with CCs, a calendar of in-country WIOMSA activities and accessibility to the WIOMSA website; and the recruitment of CCs for Comoros and Seychelles. The Country Coordinators also discussed the role that they could play in enhancing the efficiency and efficacy of the processing speed for manuscripts submitted to WIOMSA’s Western Indian Ocean Journal of Marine Science (WIOJMS) and made recommendations on the MARG 1 Grants system in relation to Grant size and eligibility to apply.

The CC meeting was held in a frank yet congenial spirit with the CC’s urging for acknowledgement and recognition of the work that they do in enhancing the goals of WIOMSA in general. The role of the WIOMSA Secretariat as an enabler rather than a director of CCs activities was unanimously adopted as the philosophy going forward. The CCs also resolved to meet more regularly.

The detailed outputs from the meeting are currently being considered by the WIOMSA Board of Trustees and plans are being laid to address some of areas which can be improved upon. The commitment of the CCs to their roles and responsibilities was reinforced through the meeting and it was apparent that the new programme provides a great opportunity to prioritise and support the activities of CCs for the long term benefit of WIOMSA as a whole.

**New Institutional Members 2012**

The institutional category of WIOMSA membership has gained popularity in the WIO region and beyond with a number of institutions signing up in 2012. WIOMSA has been striving to offer the best benefits to its institutional members and introduced an additional perk for this valued membership category in 2012. When an institution pays for membership fees, they get free membership for 2 people- the head of the institution and one additional member are automatically accepted as members enjoying the full benefits for paid members. We are pleased to announce...
that we added the following institutions to our membership in 2012:

» Blue Ventures Conservation, Madagascar
» Pwani University, Kenya
» The State University of Zanzibar, United Republic of Tanzania
» WWF Coastal East Africa Network, Tanzania
» The Department of Aquatic Sciences and Fisheries of the University of Dar es Salaam
» Flanders Marine Institute, Belgium

Institutional Members of WIOMSA enjoy a wealth of benefits from the Association including free copies of WIOMSA publication (Annual Reports, the WIOMSA Magazine, Western Indian Ocean Journal of Marine Science, and Book Series), 10% discount off on WIOMSA books on Sale, 10% discount on advertisement rates in the WIOMSA Magazine; eligibility of members covered by the institution to be elected to and/or vote in the WIOMSA Board and Country Coordinator elections, subsidized registration fees for WIOMSA symposium; recognition in the WIOMSA website as paid Institutional Members, use of WIOMSA logo subject to WIOMSA rules and regulations, free announcements on the WIOMSA blog and website, dedicated access by listed members to the members’ only site on the website (www.wiomsa.org- Membership Services) and regular updates on WIOMSA activities through being included in the Association’s mailing list.

Institutional Membership Fee structure

Institutions are able to nominate individual members from their staff, depending on the amount of fees paid. Nominated members are considered regular individual members who do not have to pay fees.

» Institutions paying for 10 members US $ 500 (Can nominate 2 free additional members including the head of institution)
» Institutions paying for 11-20 members US $ 1000 (Can nominate 2 free additional members including the head of institution)
» Institutions paying for between 21-25 members US $ 1500 (Can nominate 2 free additional members including the head of institution)

Sign up today and enjoy these benefits by contacting secretary@wiomsa.org

WIOMSA appoints a Coordinator of Research Programmes

Mr. Innocent Ngao Wanyonyi has been appointed the Coordinator, Research Programmes for WIOMSA. He worked as the Principal Coordinator of the SocMon programme in the WIO until 2011. He has been undertaking his doctoral research in Environmental Sciences and Artisanal Fisheries Management at Linnaeus University from September 2008. Mr. Ngao has an interdisciplinary academic background, with a Masters degree in Tropical Coastal Management and over 12 years experience in tropical coastal fisheries, socioeconomic research and project management. In his previous assignments he worked across the Western Indian Ocean region and interacted with research and academics institutions, government agencies, non-governmental agencies as well as communities implementing projects at various levels from local to regional.

Mr. Ngao joins WIOMSA at a time when our priority is to enhance the delivery of the information from our past and present initiatives to better inform the policy-making processes at all levels. In his new role, he looks forward to fostering closer partnerships with individual scientists, projects, programmes and institutions involved in coastal and marine research and management in the region, and outside the region. Your continued active participation is key to the sustainability of WIOMSA initiatives. Innocent is keen to work with grantees, partners and the entire WIOMSA fraternity towards further strengthening the quality of research for the wider good of the WIO community.
Adaptation Partnership Workshop: Sylvana Anta, (Seychelles National Park Authority) presents a poster on Seychelles MPAs, February 2012

WIO-COMPAS Assessors Training Course: Level 1 and 2 Assessors in Group Photo, February 2012

Regional expert meeting on the project: Regional comparative assessment of potential areas with Outstanding Universal Value in the Western Indian Ocean, February 2012

WIOMSA Board Members, Secretariat and Trust Consultant at the Launch of the WIOMSA Trust, March 2012
WIOMSA Trust Launch: Trustees and the WIOMSA Vice President sign the WIOMSA Trust Document, March 2012

Prof. Rudy van der Elst receiving the Megladon Award from the Chairman of SAAMBR, Mr. Chris Rudham. Looking on are Dr. Mark Penning and Mr Barry Rebeck, from SAAMBR, June 2012

WIO-COMPASS Level 3 Assessment Event: Candidates, Assessors and Observers in Group Photo, May 2012

New WIOMSA Program - Consolidating the Gains: Signing the Program Agreement, June 2013
NOTES TO THE FINANCIAL STATEMENTS
For the year ended 31st December 2011

PRINCIPAL ACCOUNTING POLICIES
This Financial Statement has been prepared based on the following policies

1) BASIS OF ACCOUNTING
   i) Transactions are recorded on cash basis i.e. Income and expenditure are recognized when is received or paid respectively.
   ii) Financial statement is prepared on the historical cost basis of accounting and records are kept on historical cost.

2) DEPRECIATION
   All purchases except purchase of fixed assets are expensed during the period of procurement.

3) FOREIGN EXCHANGE TRANSLATION
   Transactions denominated in other currencies are recorded and reported into the reporting currency at the rate ruling on the transaction date and closing balances at the closing rate.
WESTERN INDIAN OCEAN MARINE SCIENCE ASSOCIATION
CONSOLIDATED BALANCE SHEET
as at 31st December 2012

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>Note</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building</td>
<td></td>
<td>315,268</td>
<td>315,268</td>
</tr>
<tr>
<td>Furniture</td>
<td></td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Cash and Bank</td>
<td>4</td>
<td>898,479</td>
<td>1,856,704</td>
</tr>
<tr>
<td>Advance Payments</td>
<td>5</td>
<td>130,276</td>
<td>75,776</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td>1,349,023</td>
<td>2,252,747</td>
</tr>
<tr>
<td>Less Projects balances</td>
<td>7</td>
<td>500,799</td>
<td>1,841,059</td>
</tr>
<tr>
<td><strong>Total net Assets</strong></td>
<td></td>
<td>848,224</td>
<td>411,688</td>
</tr>
</tbody>
</table>

**Financed by**

- Accumulated Funds
  - 10
  - 331,302
  - 332,979
- Trust Fund
  - 9
  - 58,991
  - 78,709
- Endowment Fund
  - 457,931
  - -

**TOTAL**

- 848,224
- 411,688

4) **ADVANCE PAYMENTS.**
These constitute of overdrawn projects of which their subsequent or final tranches are expected soon.

5) **PROJECT BALANCES.**
These constitute of on-going projects/activities with credit balances.

**SOURCES OF FUNDS**
WIOMSA is mainly funded by SIDA under MASMA program; other donors normally contribute or finance specific activity(s) and lasts when the financed project or activity is completed. Other sources include sale of WIOMSA products such as journals, membership fees and registration fees from WIOMSA Symposium.
WIOMSA’s Vision

By 2020, WIOMSA will be widely recognized as a leader in promoting the development of marine and coastal science professionals, advancing marine and coastal science and promoting the conservation and sustainable development of coastal and marine environment.

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SEYCHELLES

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About WIOMSA
Western Indian Ocean Marine Sciences Association promotes the educational, scientific and technological development of all aspects of marine sciences throughout the Western Indian Ocean region with a view towards sustaining the use and conservation of its marine resources.

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