



Marine and Coastal Science for Management
(MASMA) Programme

The Western Indian Ocean Marine Science Association (WIOMSA) through the Marine Science for Management (MASMA) programme is inviting full proposals for research on

Deadline for submission of proposals: 28 FEBRUARY 2016

1. BACKGROUND

The Western Indian Ocean Marine Science Association (WIOMSA) through the MASMA programme is announcing a call for research proposals inviting full proposals for conducting original and innovative research that contribute to improved understanding leading towards the creation of enabling conditions for coastal and marine management, as well as leading to behavioural and social/environmental changes for sustainable development and improved human wellbeing. In other words, the MASMA-funded research projects must deliver both excellent science and clear identification of how research leads to tangible outcomes to the target groups at levels of policy, technology, environment and wellbeing of coastal communities.

The MASMA Programme Committee has noted that most of the submitted proposals in recent calls were not selected for funding mainly because they were found to be rather large in scope to be implemented effectively with the human and financial resources involved and within the two-year timeframe. Applicants are urged to submit proposals that match the human and financial resource available and can be completed within two years.

WIOMSA is therefore inviting submission of suitable full project proposals on any of the priority research topics (Annex I).

SCOPE OF WORK

The over-riding principle governing selection of projects for funding is that the full proposals should both have high scientific merit and demonstrate that its results will provide clear identification of how research leads to tangible outcomes on coastal communities and their environment in a demonstrable manner. Proposals aiming at solving identified management and environmental problems as well as promoting sustainable exploitation of new opportunities from coastal and marine environment are also encouraged.

Proposals should display:

- **Quality science.** The proposals should be innovative, have scientific merit and have clearly defined research questions and hypotheses and have realistic workload. Further, they should add value to on-going work in the relevant scientific fields in terms of quality and relevance.
- **Demonstrable outcomes in coastal communities.** The proposed project should put research into use in interaction and collaboration with society (coastal communities, public actors, private actors, etc.) and thereby give outcomes which may contribute towards significant behavioural and social/environmental changes as well as influence or contribute to changes in regulatory frameworks at different levels. The proposed outcomes should be linked to identified long-term societal impacts that may reach the entire WIO region.

Further, this call is also targeting institutions rather than from team of individuals. For the purpose of the call, institutions includes: government departments, research and academic institutions, NGOs, CBOs, or private companies. Participation of management authorities and private sector or communities is mandatory. Multi-disciplinarity of project teams in terms of the relevant fields as well as realistic partnerships are also encouraged.

Additionally, proposals submitted should cover at least two countries in the region.

ELIGIBILITY CRITERIA

Suitable project proposals that encompass any of the priority research themes are invited for submission. The proposals should be submitted by an Institution, or a Consortium of Institutions. In the latter case, the lead Institution should submit the proposal on behalf of the Consortium. For the purposes of this Call, institutions are defined as government departments, research and academic institutions, NGOs, CBOs, and private companies. Members of the project team should meet the following eligibility criteria:

- i) The Principal Investigator/s should have attained an education level of at least MSc or MA degree in a discipline(s) related to or relevant to the focus of the proposal, and have a track record of previous project management experience.
- ii) The grant is specifically intended for Institutions from the WIO region. However, consortia of institutions may involve other institutions or researchers from outside the region as appropriate, and cover their costs from the grant funds applied for. The involvement/participation of the scientists from outside the region may not exceed three person-months annually.
- iii) The Principal Investigator/s should be a scientist from the WIO region and be employed by an institution based in the WIO region.
- iv) MSc and PhD students as well as postdoctoral scientists may participate in the approved projects; some of their expenses including stipends could be covered from the grants if found to be appropriate.

SIZE OF GRANTS

The size of the grant for this call is:

- US\$ 150 000 over a 2-year period, with a mandatory minimum of 20% contributed as matching funds by applicants.
- Matching funds can be provided either as cash, or as 'in kind' funding (e.g. costs of staff time). Projects with substantial matching funding in cash from different sources

including governments, partners and private sectors, will be given special consideration.

- The grant will enable institutions to support researchers and postgraduate students in their research work as well as to purchase equipment, expendable supplies, literature, etc.
- Institutions or Consortia are encouraged to submit one large project proposal, or several linked projects under the umbrella of a research Programme, which jointly address a common overall research question.

A number of factors will be taken into account when considering whether to award the maximum amount:

- i) Number of countries involved or the geographical scope of the project;
- ii) Number of students and postdoctoral scientists involved;
- iii) Number of field trips and facilitation meetings with stakeholders and communities planned;
- iv) The amount of matching funds;
- v) Multi-disciplinary teams; and
- vi) Scope of work (for instance, a high number of convincing work packages and deliverables, indicating value for money).

SUBMISSION OF APPLICATIONS

Only one proposal will be accepted from a particular institution, either on its own or as the lead institution of a Consortium¹. However, in cases where an institution is included as part of another proposal submitted from a Consortium (and where it is not the lead Institution), additional proposals will also be considered.

Full proposals should **strictly NOT EXCEED 24 A4 PAGES (excluding the cover page, budget and annexes)** prepared as a WORD Document, using Times New Roman 12 pts, and according to the format described in Annex II.

¹ Institutions could submit more than one proposal. However, an institution could be awarded more than one grant only if it is a large institution and its different departments or units, which have different financial and administrative autonomy, location, and specialist capacity, have submitted separate proposals. They should also have a different lead person and substantially different team members in each of the submitted proposal.

APPLICATION DEADLINE AND METHOD OF SUBMISSION

Full proposals should be submitted by email to reach WIOMSA by 28th February 2016. The MASMA Programme Committee will review the submitted full proposal and applicants will be informed of the Committee's decisions within a period of two months. Full proposals should be submitted online at <http://proposals.wiomsa.org/masma-proposals/>.

For further information on the priority research themes, reviewing process and other relevant information please visit the WIOMSA website, www.wiomsa.org or contact the Executive Secretary at the above address.

CHECKLIST

| Before submitting your Full Proposal, please check that each of the following conditions is met as any violation may result in disqualification of your proposal from this Call. | Yes | No |
|---|------------|-----------|
| Correct format of the full proposal has been used | | |
| Number of pages of the full proposals does not exceed 25 pages (excluding annexes) | | |
| Curriculum Vitae of the Principal Investigators and other senior team members are submitted as Annexes to the full proposal | | |
| Duration of the proposed project does not exceed 24 months | | |
| The maximum amount requested does not exceed US\$ 150 000 | | |
| The amount of Matching funds is indicated | | |

Annex I. Description of criteria

| Main criteria | Corresponding sections in the Guidelines | Description of the criteria |
|---|--|--|
| Scientific quality (30%) | Methodologies and Scientific track record of the researchers | Clear research focus, approach and methods, which clearly show the potential for innovation and is carried out by a research team with demonstrated capacity and track record. The proposal is integrated across countries, disciplines, sectors and scales. |
| Potential for impacts (30%) | Goals and Objectives; Outputs and outcomes; Applicability of the results in practice, and potential impacts; Detailed dissemination/ communication plans | Identified long-term <i>Impacts</i> that the project intends to address. Clear description of project <i>Outcomes</i> (expressed as changes and effects that the project will bring about in different parts of society) and how those Outcomes may contribute to the identified Impacts. Description of project <i>Outputs</i> (deliverables) and clear motivation how those outputs contribute towards the outcomes. Clear strategy and capacity for engaging with community, policy and practice in order to ensure the uptake of outputs and achievement of the identified outcomes.. Interaction with an appropriate mix of actors in ways that are relevant for the identified outcomes and outputs. |
| Relevance and value addition (20%) | Background and rationale for the proposed project; Gender Considerations | Relevance and/or value-addition of the proposed research to the needs and priorities of the region in terms of identified gap in policy, practice and research. |
| Feasibility and overall effectiveness (20%) | Project Activity Plans; Monitoring and Evaluation plan; Log frame for the project; Risk Analysis; Matching Funding Plan; and Budget and Budget Justification | Realistic work plan and an appropriate monitoring strategy. Explanation of how this research would represent good value for money, particularly the relationship between the investment and the potential for impact |

A note on Outputs, Outcomes and Impacts

The term “output” refers to what the project intends to produce and that can be described as a deliverable. Typical examples include, but are not limited to, documents (scientific publications, reports, policy briefs, etc.) , technologies, methods, data sets (survey results, interview data, etc.).

The term “outcome” refers to a significant effect brought about by the project. The effect is a change in a social, environmental or economical context. It can be a change of practice, a change in policy, a change in logics or beliefs, etc.

The term “impact” refers to changes in society with a reach that goes beyond what can reasonably be achieved within the project. The desired impacts are changes that the project contributes to through its outputs and outcomes.

The outputs, outcomes and impacts of a project must form a logical whole, in which outputs are designed to contribute towards outcomes, and outcomes are designed to contribute towards impacts.

Annex I: Thematic Areas of the MASMA Programme

A major concern for the future prosperity of WIO countries is ensuring the wellbeing of human populations through the maintenance of biological diversity and the ecological function of coastal and marine environments. Concomitantly, this is also key to the development of strategies to resolve conflicts and address threats to resources and the environment in general.

Recognizing the above, and based on wide consultation, a number of priority research themes and cross-cutting activities have been identified as priority areas for calls for research proposals in the new MASMA Programme.

1. Vulnerability, Resilience & Adaptation

The WIO Region is among the most vulnerable regions in the world to on-going and future change and variability. The region's coastal and marine resources and the communities that depend on these resources for food, water, and livelihoods are particularly sensitive to global change impacts. Impacts due to population pressure, climate change, and globalization often act in synergy, compounding one another, with possible abrupt changes across scales. Impacts include those on aspects such as biogeochemical cycles, ecological dynamics, climatic effects, food security, water scarcity and quality. These all have social and economic consequences requiring innovative social, political, economic and political responses. It is also important to recognize the interconnectedness between ecological, social, economic and political processes and the way that these impact on each other. There is a need to understand resilience, to improve the ability to respond to global changes, and build the social and ecological adaptive capacity from community to national levels.

WIOMSA's support for research in the area of Climate Change has previously focused on the impacts of climate change on coral reefs, mangroves and fisheries. Climate change impacts such as increasing air and surface sea temperature, precipitation changes, increasing frequency and severity of extreme weather events, and sea level rise are further compounded by concerns about ocean acidification due to elevated levels of atmospheric carbon dioxide.

The new Programme will place emphasis on research seeking to understand and increase resilience and reduce vulnerability to global change, while reducing poverty and supporting development. Proposed research projects under this theme might include amongst others:

- Increasing the understanding of current relationships between climate, interacting with other drivers, on fisheries productivity, population dynamics, migratory behaviour and catchability of fish stocks, and also how climate exacerbates environmental stressors and impacts ecological processes sustaining fish stocks.
- Understanding interactions between the combined impacts of global and local changes on marine biota, using an ecosystem and integrative approach to identify the key points for management interventions,
- Carbon sequestration – carbon cycle in the context of sequestration/climate change - assessments of carbon stocks and processes, drivers of variability in carbon storage and sequestration, threats, scaling up of carbon cycling data, ecosystem services, interactions between carbon and other elements (e.g. nitrogen).

- Carbon in the social and economic sphere—socioeconomic aspects of carbon sequestration, opportunity costs, benefit sharing, climate financing and mechanisms.
- Determine the combined effects of climate change, land-use practices (e.g. deforestation, coastal development that forms a barrier to mangrove landward migration), and other human impacts (e.g. pollution, eutrophication) on resilience and adaptive capacity.
- Understanding the future state of social-ecological systems. What happens with regime shifts from one state to another (thresholds, hysteresis), in terms of future services and management regimes. Can we identify and guide changing systems towards desirable states?
- How to build social-ecological resilience, and adaptive capacity to future change – identifying behavioural and social changes that are required, and mechanisms needed to encourage this
- Establish proof of concept study sites, looking at environment/ecosystem services and human system, to trial and model different interventions to build resilience/adaptation scenarios, scaling and interactions across study sites
- Determine costs associated with addressing the implications of climate change.
- Determine the role of economic policy instruments in achieving adaptation to future change, including climate compatible development under different climate/impact mitigation scenarios.

2. Coastal Livelihoods

Most coastal communities are very poor and located in marginal areas. They depend on natural resources for their livelihood and their economy depends mainly on subsistence farming, forestry, artisanal fishing, small-scale businesses and the informal sector. With population increase and migration, new ethnic compositions have emerged due to migration and competition from external actors, and coastal and marine resources have increasingly been put under pressure. Local management systems, where they exist, are often threatened and local people increasingly lose control over their coastal and marine resources. At the same time both human and financial capacity in environmental government agencies to support sustainable coastal livelihoods is often lacking or not seen as a priority by decision-makers. This has in some cases led to over exploitation of these resources and has narrowed the provisioning options at local levels and threatens food security and diminishes the potential for natural systems to deliver important ecosystem services. New livelihood opportunities have often not been developed locally and the coastal communities have increasingly been trapped in a vicious dependency cycle where poverty generates environmental problems, and vice versa.

Strategies to improve local use of coastal and marine resources and identify alternative livelihoods include the empowerment of local actors, especially women, who often have the least opportunities, enhancement of locally existing natural resource management systems, adoption of alternative/additional income generating activities, and increased environmental awareness. For example activities such as fish and/or mollusk farming have been proposed as additional or alternative livelihood options for coastal communities, which may have the

potential to reduce pressure on reefs and provide of employment and a reliable supply of cheap protein. Other suggested activities have included seaweed farming and tourism/eco-tourism related services.

However, introduction of these activities and strategies have encountered numerous and varied constraints that are not always well understood. Many such interventions have not been sustained or have had unintended negative outcomes. Some of these constraints include insufficient investment capital available, lack of suitable markets, poor infrastructure, political instability, uneven distribution of wealth between local actors, unforeseen environmental consequences, lack of expertise, inappropriate government policies and interventions, lack of research into suitability of proposed additional livelihoods (e.g. inappropriate culture species), gender inequality , among others.

The role of research institutions, government agencies, funders private sector and NGO's in identifying, promoting and supporting new and alternative livelihood opportunities for coastal communities has also been varied and inconsistent, and in some cases inappropriate. A particular problem is the identification of relevant recipients in coastal communities for such interventions and options, because the nature and dynamics within communities are not adequately understood and taken into account. cursory, albeit well-meaning, engagements with communities to offer opportunities to increase economic status and food security can have unintended social results, and have in many cases been diverted to serve middle-men or those who are influential or already have capacity and resources. This can result in the further marginalisation of the poorest most dependent sectors, and increase their vulnerability.

Proposed research projects under this theme might include amongst others:

- Understanding poverty dynamics, the pathways into and out of poverty, and how poverty influences the ways people use a range of ecosystem goods and services.
- Understanding communities' use of and dependence on ecosystem services for livelihoods, and the structure and social dynamics within the communities that define and influence access by different sectors of the community to resources, economic opportunities, and skills development.
- Interdisciplinary investigation of where feedbacks between social dynamics and ecological dynamics are occurring. For instance, understanding of functional ecology – e.g. how certain types of reef use promote or damage particular functional processes (for example, herbivory)
- Understanding dynamics of livelihood diversification. These are so poorly understood that many alternative livelihood projects have demonstrated very low levels of sustainability
- Investigation of the social, financial and environmental risks and benefits of additional and alternative livelihood strategies
- What are the main 'drivers', in particular with respect to macro-economics, which lead to unfair trade models?
- Understanding pressure and access to the coast and its resources, particularly in relation to private interests, tourism and urbanisation.

- Understanding local fisheries and food security in relation to local tourism and export of high value products with possible concurrent loss of local socio-economic opportunities.
- Understanding the relative roles and relationships between communities, management agencies and non-governmental organisations in establishing viable additional and alternative livelihood options, and the factors that mediate sustained success or failure

Notwithstanding the realities above, it is intended that this theme is broad enough to encompass the whole range of coastal livelihoods, including activities associated with sectors such as fisheries, tourism, mariculture, energy, agriculture and forestry, mining, as well as ports, shipping and marine transport.

3. Governance for the Future

Governance is defined as the process of informed decision making that enables trade-offs between competing users of a given resource so as to balance protection with beneficial use in such a way as to mitigate conflict, enhance equity, ensure sustainability and hold officials accountable (Turton *et al.*, 2007²). Governance thus entails the institutional capacity of public organizations (not limited to formal government) to furnish public and other goods and services to the citizens in an effective, transparent, impartial and accountable manner (subject to resource constraints), thus intertwining both political and economic governance (World Bank, 2000³; UNDP, 2003⁴). A clear understanding of governance also entails detailed analysis of existing power-relations and inequalities in their historical and political contexts.

Different management regimes have been adopted for managing coastal and marine resources in the countries of the region. These include traditional management systems, collaborative management arrangements and enforcement of policies and laws through various regulatory mechanisms. Frequently these management regimes have been designed for achievement of short social, economic or political goals, and do not take sustainable societal and environmental development into consideration.

There are several characteristics that are critical for the legitimacy and efficiency of governance systems. These include: clarity and transparency of national and local laws and regulations, involvement of concerned stakeholders in decision-making processes, capacity and resources of government agencies, mechanisms for optimal use of knowledge and science in decision-making processes, clear regulations addressing obligations and rights, including tenure rights to the resources, access rights, and rights of users to devise their own institutions (that take into consideration traditional knowledge and customary law). Equally important for the build-up of strong regimes is to find incentives and sanctions, improve openness of governance, and form appropriate structures for implementation.

² Turton, A.R., Hattingh, H.J., Maree, G.A., Roux, D.J., Claassen, M., Strydom, W.F. (eds.) 2007. Governance as a Dialogue: Government-Society-Science in Transition Series: Water Resources Development and Management, :354 pp.

³ World Bank, 2000. Can Africa claim the 21st Century? World Bank, Washington D.C

⁴ UNDP 2003. Poverty reduction and human rights. A practice note.

<http://www.hshr.org/hrpovertyresources.htm>

Research on management regimes and aspects related to them, is important for designing of systems capable of creating social and ecological sustainability.

Proposed research projects under this theme might include amongst others:

- An investigation of the importance of institutions in rural communities (democratically elected local government and traditional authorities) in ensuring sustainable and equitable resource use and how threats from outside may impact on these?
- Understanding the role of conservation agencies in coastal resource management in coastal rural communities by virtue of their proximity to communities
- Understanding the factors that constrain government agencies in providing appropriate governance that delivers healthy ecosystems and sustainable resource use, including organisational culture, lack of skills and capacity, lack of political support, lack of funding
- Investigation of mechanisms to ensure financial viability in MPA management
- Identifying workable mechanisms to strengthen fisheries management to meet both socio-economic and environmental conservation objectives through sustainable use of fish resources.
- Determining the influences of societal processes and dynamics such as governance, gender and food security, at local, national, regional and global levels, on coastal and marine ecosystems
- Assessing effectiveness, efficiency and accountability of policies and legislation of marine and coastal resources at all levels (village, municipal and national levels)
- Understanding society's use of natural resources and how this has changed with increased and changed consumption patterns, emerging production systems, technology development, and political actions
- Certification of fish and fish products: who gains, who loses, and what are these gains and losses? What are implications for local fishers in the region?
- What types of incentives should governments put in place to encourage green growth?

4. Cross-cutting

Ecosystem service research. Ecosystem services research has come a long way in the past decade; however key research gaps hinder the accuracy of policy recommendations derived from this research and limit the predictive ability of the findings; resulting in science and policy being reactive rather than proactive.

The majority of work into ecosystem services research to date has gone into quantifying, valuing and describing patterns of ecosystem service provision. Whilst this provides critical baseline information, there is a need to move beyond describing patterns to describing processes.

Such an approach is interdisciplinary in nature and seeks to identify non-linearities, feedbacks and critical thresholds between multiple services and between social and ecological components of a system. Three main areas where a process based approach is needed for ecosystem service research are:

- i) Understanding of the social and cultural processes underlying ecosystem service provision. This will increase the ability to predict social responses to policies. Such an approach would need an improved understanding of the drivers of human behaviour. This could be achieved through, for example, an investigation of how a propensity to cooperate with rules governing resource use is influenced by institutional and economic considerations, or alternatively, investigating the channels through which specific behaviour is developed and learnt.
- ii) Greater understanding of the underlying ecological processes and structures, and how these influence regulating and supporting services as well as provisioning services. This will increase the ability to predict ecological responses to policies. This would need a greater understanding of the influence on ecosystem service provision, and human well-being, and of marginal changes in ecological function. This could be followed up by developing models that identify non-linearities, feedbacks and critical thresholds which can be empirically tested across sites.
- iii) Understanding the interactions and feedbacks between multiple ecosystem services. This would allow for an understanding of the trade-offs involved in policy choices.

Further research is also needed on:

- i) Exploring the scale effect of ecosystem service research. Valuation studies are generally conducted at a specific scale. However benefits are received across scales. How can values obtained at one scale relate to values at a different scale? For example what influence should community values have on national policy, or national values on community action? This question would involve exploring the ethical frameworks policy recommendations that are based on how ecosystem services affect the well-being at a community level, and trade-offs and feedbacks on ecosystem services across scales.
- ii) Payments for Ecosystem Services. This is a rapidly growing area of research and potential source of revenue for conservation and community projects. There is a need to establish the risks as well as the benefits associated with these approaches to conservation particularly in the Western Indian Ocean marine context.