

MARINE SCIENCE FOR MANAGEMENT (MASMA) PROGRAMME

COMMISSIONED RESEARCH: INVITATION TO SUBMIT A FULL PROPOSAL ON

“Identification of the constraints to environmentally sound aquaculture development in the Western Indian Ocean region”

The Western Indian Ocean Marine Science Association (WIOMSA) through the Marine Science for Management (MASMA) programme has launched the “Commissioned” research grant programme to support priority research that is innovative, catalytic, and that provides information that could be used for management purposes.

MASMA was established in the light of the predominantly narrowly focused natural science research currently taken place in the Western Indian Ocean (WIO) region, which is characterized by limited emphasis on interdisciplinary research and limited attention to the critical links between science and the larger societal issues in the region. Consequently, MASMA seeks to strengthen **applied and interdisciplinary** research on both the **natural and social science aspects** of coastal environmental issues for the purpose of advancing knowledge that is directly **relevant to society and resource management**.

Under the “Commissioned” research grant programme, proposals are invited from experts from within and outside the region.

BACKGROUND

The contribution to world fish production of farmed aquatic foods has been increasing rapidly over the last 20 years, and now exceeds 30%. Aquaculture has thus frequently been recommended as a solution to overfishing and the declining availability of fish in sub-Saharan Africa, problems that are often cited as the most critical issues facing coastal communities in this region. However, although aquaculture has been tried in many places in the Western Indian Ocean (WIO), only a few species have been commercially farmed on a long-term basis.

The constraints to aquaculture development in sub-Saharan Africa are varied and not well understood. The 1998 FAO review of the state of world aquaculture identified the following causes:

- The poor macro-environment for development with insufficient investment capital;
- Limited financial resources;
- Differences in expectations between host countries and donor organizations;
- ‘Project dependent’ development;
- The novelty and low priority accorded to aquaculture;
- Frequent drought and water shortage;

- Lack of cohesive aquaculture development plans and inappropriate government policies;
- Inconsistency between aquaculture development strategies and local needs and circumstances; and
- Excessively ‘top down’ approaches to aquaculture development.

Other constraints that have been suggested in the literature include the lack of aquaculture traditions and technology, local political instability and economic uncertainties, lack of suitable markets and infrastructure, and lack of expertise and research into suitable local culture species. Coastal communities are often trapped by their lack of individual wealth and access to capital which constrains individual development, and in turn limits infrastructure and discourages investment from outside. There are also concerns arising from previous attempts that have either failed or that have had negative ecological consequences, as well as publicity about poorly managed and unsustainable practices in other parts the world. These have tended to discourage development and expansion of the industry, and WIO governments have sometimes adopted stringent policies and regulations that have stifled the potential for growth.

Despite this, there is considerable potential for the development of aquaculture in the marine and coastal regions of the WIO in a form that does not have a negative impact on biodiversity or ecological processes, and that provides a significant benefit to local communities. Aquaculture can be an important alternative to natural resource harvesting, and can potentially reduce pressure on wild stocks and provide employment and a reliable supply of cheap protein. In Tanzania, seaweed farming is now a well established economic activity, and in Madagascar, prawn farming has been carried out for many years with apparent success.

There is thus a need for a more in-depth understanding of the legal, policy, financial, and environmental constraints to development and/or enhancement of the industry in the WIO, with a more detailed understanding of existing and likely future environmental impacts. This will allow the development of more appropriate guidelines and mitigation measures to ensure minimal negative environmental impacts as the industry expands. The results of this research study will thus be of value to governments, NGOs, and donors as well as to the many international and regional organisations operating in the WIO concerned with coastal resource management.

SCOPE OF WORK

It is recommended that the proposal to be developed be centred on the aspects mentioned below. The planned study should aim at coming up with concrete suggestions of a few key aquaculture types that are especially suitable to develop in the region in order to satisfy protein demand and socio-economic development.

1. Preparation of an overview of the current state of coastal and marine aquaculture in the WIO; this would include:
 - Main species/taxonomic groups involved and type of aquaculture (intensive, extensive etc)
 - Environmental and socio-economic issues (benefits and costs) associated with each species/type of aquaculture that may result in a conflict of interest in relation to its development
 - Recognition of aquaculture in the national policies, including the food security-related policies

- Identification of other studies and programmes addressing, or related to, this issue (e.g. Aquaculture for Local Community Development Programme (ALCOM), Southwest Indian Ocean Fisheries project (SWIOPF); 1995 Southern African Development Community (SADC) 1995 survey of the status of mariculture in the southern African sub-region (Policy Study for Sustainable Mariculture Development); WIO-LaB; technical review of aquaculture carried out for NEPAD's *Fish for All Summit* in 2005)
2. For selected aquaculture activities, identified as a result of the overview carried out in (1), a more detailed analysis should be undertaken to identify constraints, challenges, and prospects for their development including relevant investment policies; the research should include market-value chain analyses, assessment of vertical integration, consideration of technology transfer issues, and identification of benefits to local people. Benefits at all levels including export incomes, farmer incomes and benefits to local communities should be evaluated along with sustainability, as well as environmental and socio-economic costs.
 3. Using the results of (1) and (2), draw lessons learned that can be used in the development of future policies to promote sustainable aquaculture in the region, and in the planning of capacity building activities and further research. Also identify a set of key barriers/constraints and recommendations on solutions, and where applicable, who should be addressing these.

Whereas the overview should address the entire region, the more detailed analyses could be limited to fewer countries, with a minimum of three countries covered, and should be undertaken in collaboration with relevant institutions in the region including national and regional fisheries agencies. It should contribute to building the capacity of students through involving them in different stages of the study. Consideration should be given to holding a workshop towards the end of the study to disseminate the results and ensure full sharing of information.

ELIGIBILITY

Principal Investigators and members of their teams should meet the following criteria:

- a. Demonstrable credibility and capacity to conduct research on the selected topic.
- b. Educational background: The Principal Investigator should have attained an education level of at least MSc or MA degree in a discipline related to marine sciences¹.
- c. The grant is specific for individuals and/or research teams from the WIO region. However, individuals and/or research teams may involve scientists 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 man-months² annually.
- d. The Principal Investigator should be from the WIO region and be employed by an institution (governmental or non-governmental) in the region. The institution is expected to provide salaries, working space and basic research facilities.
- e. Evidence of potential/existing collaboration with appropriate experts and institutions that are competent in the technical matters that the proposed project entails.

¹ Marine science here includes both the social, cultural, economic and natural sciences

² One man-month is defined as the working days on a month, which are 20 days.

DURATION AND FUNDING

The maximum duration for activities supported under “Commissioned” research grant programme is two (2) years. The total funds request should not exceed US\$ 150,000. However, proposals for less that amount are encouraged.

SUBMISSION DEADLINE

A full proposal based on the elaboration of the above-mentioned issues should be submitted by fax, email or ordinary mail by **31 July 2006**. The proposal should be prepared according to the format provided in Annex I.

The proposal and CVs of the members of the team should be submitted to:

Executive Secretary
Western Indian Ocean Marine Science Association (WIOMSA)
P O Box 3298 Zanzibar
TANZANIA
Tel: +255-24-2233472;
Fax: 255-24-2233852;
Email: secretary@wiomsa.org

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.

ANNEX I: FORMAT FOR PROPOSALS TO BE SUBMITTED

All pages should be single-spaced, typewritten (computer or typewriter) in at least a 12-point font, and printed on A4 (210 mm x 297 mm OR 8.5" x 11") paper. The entire proposal should not exceed 25 pages, including illustrative materials like tables, figures, charts etc. Applicant(s) should note that all the necessary information for reviewing the proposals should be included in the 25 pages, with only the reference letters and CV(s) allowed as annexes. Each proposal must include the following items; applicants should carefully read and understand the specified guidelines on each item. Proposals failing to meet the provided guidelines will not be considered for review.

1. Title Page

This should be a separate (cover) page, with the title of the research proposal and name(s) and contacts (address, telephone, fax, e-mail) of the applicant(s). The title should identify the project, be as short as possible, and be sufficiently descriptive to reflect the nature of the proposed work. In case of more than one applicant, the principle investigator (or contact person) should be clearly indicated.

2. Abstract

The abstract should not exceed 1 page. This is a very important part of the proposal, giving a summary of the entire work. It should present a precise description of the research being proposed, including objectives, methodology and expected results.

3. Background

In this section, the applicant(s) should give background information of the proposed research, which may include: i) current state of knowledge; ii) how the proposed work will impact on the theme in question; iii) justification of the proposed research (i.e., why conduct the research); iv) possible applications of the knowledge generated, expected institutional impact and other potential benefits of the project/workshop/training course.

4. Goals and Objectives

The applicant(s) should clearly state the main goal of the work, and give specific objectives to be achieved by conducting the proposed research. Furthermore, it should include a framework of analysis defining the conceptual framework, and theoretical frame of reference that will guide the research. Hypotheses, theories, and research tasks, etc. should be appropriately formulated.

5. Methodologies

In this section, the applicant needs to discuss how each of the proposed objectives will be achieved, and questions answered in the most rigorous way possible. This includes the materials and methodology; the timeframe for completion of the work; and the roles and responsibilities of each investigator.

6. Approvals

The applicant(s) should mention whether relevant national/local approvals and research permit have been sought or granted and by which agencies. The names and addresses of the agencies should also be given

7. Gender Considerations

State whether gender consideration constitute an important dimension of the project in defining the important relationships of the problem or in data collection. The applicant should show explicitly how the methodology will address gender issues.

8. Risk Analysis

Possible problems, difficulties, and/or factors that could prevent timely completion and/or implementation of the project/workshop/training course

9. In-Country Collaboration

The applicant(s) should identify and describe any collaborators and partners in-country who would be involved in the research and who could ensure the sustainability of the work and /or national/local stewardship as relevant. Other stakeholders should also be identified.

10. Results and Dissemination of Research Findings

Expected major outputs of the project/workshop/training course should be defined. The likely use of the results from the proposed activity, and beneficiaries of activity should be discussed. Furthermore, the means of communication of results to users and decision makers should be explained

11. Literature Cited

All literature materials cited in the text must be listed in this section.

12. Budget and Budget Justification

Annex IV should be completed as a summary of the budget. The budget to be included in the proposal should be clear, complete, and well explained such that the rationale for each figure is given in sufficient details and the roles and responsibilities of each investigator should be clearly defined. This will enable the reviewers to evaluate the relevant application of the funding requested.

13. Available Resources

It is important that the applicant provided information on financial and material support, for this proposal, from other sources. Applicant should specify the staff, facilities, equipment and supplies that will be available for the project, from the institution to which the applicant is affiliated. If relevant, specify the time schedule for research training involved in the project.

14. Curriculum Vitae

The CV for each investigator may not exceed two (4) pages. It should include peer-reviewed publications related to the subject of the proposed research.

REFeree'S FORM TO SUPPORT APPLICATION FOR A RESEARCH GRANT

Applicants should give this form to a referee to be completed as part of the grant application. This form will be treated as confidential and should be sent directly to the secretariat by the referees. The form should be type-written (computer or type-writer)

Please provide us comments on the: Applicant's general character; academic record; prospects and ability to conduct the proposed research; relevance of the proposed research; the duration you have known the applicant and under what capacity; and any other relevant information. *Please attach additional sheet if the need arises.*

Name	Signature
Institution	Date
Address	Tel:
.....	Fax.....
.....	E-mail

BUDGET FORMAT

An example of the format in which budget items should be submitted is as follows:

Research title	Country	Project No (WIOMSA)
Responsible for the accounts	Institution	Budget period

Local currency

Local currency code	Exchange rate/SEK (on budget date):
	Exchange rate/USD (on budget date):

Bank		Account No.	
Bank address		Title of account and name	
Payment date preferred	1 st :	2 nd :	Final:
Amount in local currency/USD			

Planned Expenditure

Account No (WIOMSA)	Expenditure (titles of Accounts at WIOMSA)	Total	Proposed Payment Schedule		
			1 st Install- ment	2 nd Install- ment	Final Payment
Total					

Signature of Project leader

Place and date:
Signature:
Name (capitals)

NOTE: If duration of project is greater than one year, please attach additional information (as above) on the budget items for subsequent years.