Open call for institutions to undertake marine litter monitoring programmes in the WIO Region

The Western Indian Ocean Marine Science Association (WIOMSA) in partnership with the African Marine Waste Network (AMWN), is inviting proposals from WIO countries to undertake a marine litter monitoring programme

Proposal submission deadline: 12 October 2018

Context

Marine litter is today recognized as a global challenge. This problem is affecting not only countries with inadequate waste management systems but, due to waste deposited by ocean currents, even those with good waste management systems are struggling to cope. The United Nations 2030 Agenda for Sustainable Development addresses marine debris and pollution through Sustainable Development Goal (SDG) 14 (target 14.1), with a particular focus on sources from land-based activities. Similarly, goals 6, 11 and 12 target untreated wastewater (6.3), municipal and other waste management (11.6), environmentally sound management of chemicals and wastes throughout their life cycle (12.4), and overall waste reduction (12.5).

The major coastal cities and towns found in the Western Indian Ocean (WIO) region generate significant amounts of solid waste, some of which reaches the sea to contribute to the marine litter problem. This is exacerbated though the transporting of solid waste/debris via river discharges from urban areas located further inland in their watersheds. At least four major cities on the mainland coast of Eastern Africa; namely Mombasa, Dar es Salaam, Beira and Maputo, are located on the coast.

Despite marine litter being recognized as a global challenge, its impacts are felt locally and these impacts vary across populations and ecosystems. Currently, base-line data upon which to build strategies to better manage waste are not available in the WIO Region and much of the rest of Africa. This is due to a lack of awareness, training, resources and adequate technical equipment. A dedicated effort to build human and technical capacities to establish marine litter observation systems in the region is required. Monitoring systems for marine litter will be initiated in at least five sites in different countries in the WIO region to set baselines for relevant targets as required in the SDG 14.

Scope of work

Waste monitoring programmes are critically important as they provide the first steps in establishing baselines against which to measure change, particularly in establishing the degree of success of mitigation strategies. Such monitoring simultaneously sets priority targets for interventions necessary to ensure that countries track their progress toward fulfilling their SDGs for the 2030 Agenda for Sustainable Development.

Project proposals should address marine litter data gaps in their country by collecting data as part of a marine litter monitoring programme to build a baseline. Globally it is estimated that about 80% of marine debris originates on land, the remainder coming from sea-based sources (Jambeck *et a*l., 2015). Rivers are major conduits for carrying litter from land to the sea; therefore, proposals may include surveys of the sources of marine litter, its transport from land-based sources via waterways, as well as in coastal environments (e.g. beaches and rocky shores, and if appropriate, in the nearshore seas).

One contract will be awarded to the successful bidder in one of the five countries of the WIO region. The research proposals should be designed to contribute to building a litter baseline by

collecting data on marine, riverine, estuarine and/or point source litter in coastal areas, including quantification and identification of litter. Proposals could contribute to any one, or several, of the following objectives:

- Identifying and quantifying litter sources and hotspots on land.
- Tracking and monitoring plastic litter as it is transported from source to sea, including quantification and identification of litter in coastal areas.
- Quantifying and monitoring changes to macro-, meso-, or micro- litter and plastics. (Note: It is not required for institutions to have capacity to process and analyse microplastics).

Institutions must submit no more than a 10-page (excluding cover page, budget and annexes) proposal containing the following:

1. Title page
2. Background and rationale for the project
3. Goals and objectives
4. Marine litter monitoring method(s)
5. Selection of one or more monitoring sites
6. Project action plan
7. Risk analysis
8. Evaluation plan
9. Literature cited
10. Budget and budget justification
11. Annexes (description of applying institution and CVs of project team)

For a full description of the requirements for each section see Annex 1. In the preparation of the proposals, it is highly recommended these publications be consulted:

i) Guideline to Marine Litter Monitoring. This includes description of: methods and protocols; process and criteria for selection of participating institutions; process for selection of monitoring sites in the participating countries and capacity building strategy for the participating institutions

ii) Marine Litter Monitoring Manual. This lists the equipment needed and recommended instructions for undertaking marine litter monitoring in beach and estuarine environments.

Grant details

This is a competitive bid. Only one institution (research group) from each of the five countries will be selected. The maximum budget per institution to support the research activities of the proposed project is 75 000 USD, including equipment, consumables, training and travel expenses for a three-year project (i.e. 25,000 USD per annum). Selected institutions will also participate in a marine litter monitoring training session.

It is expected that the institutions will meet the costs of their own personnel, so salaries are not included in this grant.

Evaluation & Selection process

The assessment of research proposals will consider local needs, existing capacities, project aims, how each of the selected applicants will benefit from technical and knowledge transfer such as the provision of equipment and appropriate training. The selection of institutions will be made by a specially-convened committee. The main selection criteria will be:

a. Relevance and technical quality of the proposed research project including methods and merits of the selected study sites.
b. Proximity to or ease of access to study sites to facilitate regular field monitoring.
c. Capacity to undertake and interpret research:
    i. Exhibiting sufficient understanding of the marine litter problem and current global research into marine litter.
    ii. Capacity to mobilise sufficient, appropriately qualified personnel to lead and undertake monitoring tasks over a three-year period, including:
        - At least one senior person possessing a Master's Degree in Science or higher.
        - At least one technician.
        - At least one member of staff must be proficient in engaging and mobilising public involvement.
    iii. Personnel should have skills necessary (or willingness to be trained) to undertake monitoring research. Proven ability would be required in:
        - Research
        - Scientific method
        - Data collection, management and interpretation
        - Writing project reports
        - Strategic planning
        - Teaching, education and awareness (including the ability to inspire the public and local communities)

    The following skills are valuable:
        - Numerical methods and statistics
        - GIS and mapping
        - Predictive modelling
        - Chemistry, with a strength in water analysis, specifically for microplastics and their associated toxins and biofilms
    iv. The institutional infrastructure to properly conduct monitoring and research including but not limited to:
        - Access to appropriate and adequate road transport and watercraft
        - Internet connectivity
        - Ready access to physical or online libraries

Additional beneficial infrastructure could include:

- Laboratory space and facilities (e.g. wet lab, storage for samples)

- Appropriate equipment including microscopes and balances

v. Solid track record of report writing and delivery on contractual obligations.
vi. Plans and capacity to maintain monitoring programmes beyond the initial three-year period. Such plans might include a fund-raising strategy if additional funds are necessary.

d. Realistic budget.
e. Potential for collaboration and partnerships with other institutions in the region and internationally.
f. Ability and plans to involve local education and awareness initiatives in the monitoring programme.

Application Deadline and Method of Submission

Proposals should be submitted to the Executive Secretary, Email: secretary@wiomsa.org, with the subject title 'Marine Litter Observation System' by **12 October 2018**.

Annex 1: Guidelines for preparation of full proposals

The entire application should not exceed 10 pages (excluding the cover page, budget and annexes) prepared as a WORD Document, using Times New Roman 12 pt, single spacing, normal margins (2.54 cm for top, bottom, left and right margins), portrait orientation.

1. Title page

This should be a separate (cover) page, with the title of the research proposal and names, positions and contacts (address, telephone, e-mail) of the proposed marine litter monitoring team (principal investigator(s), technical staff etc.). The title should identify the project, be as short as possible, and be sufficiently descriptive to reflect the nature of the proposed monitoring system.

2. Background and rational for proposed project

This section should present the reasons why the proposed project is necessary and should specify how the project will address the main challenges identified. A review of existing information clearly showing the current knowledge and data gaps as well as value-addition that the project proposes to address through this approach should be included. This should include:

a) An overview of the current knowledge in and history of work on marine litter in your country.
b) Information on any on-going monitoring programmes on marine litter or other pollution within your institution.
c) A paragraph indicating knowledge of global and in-country monitoring programmes on marine litter.
d) An explanation of why your country needs a marine litter monitoring programme.

3. Goals and objectives

The proposal should clearly state the main goal of the work, and give specific objectives to be achieved and against which the progress of the project could be assessed. Objectives should be specific, measurable, achievable, realistic and time bound. It is important to clearly demonstrate that it is feasible to address the identified challenges on budget and within the project timeframe. Research questions, research tasks and theories should be appropriately formulated as well as expected outcomes.

4. Marine litter monitoring method(s)

In this section, the proposed method(s) to monitor marine litter need to be described and justified as to why the particular method(s) has been selected. In addition, this section should include equipment and material lists, identification and justification of sampling schedule, litter quantification, identification and categorisation and how data will be collected and managed. Plans to potentially involve local education and awareness initiatives in the monitoring programme should also be discussed. This method section should link directly with the project action plan.

5. Site(s) Selection

Identify and justify priority site(s) selected for monitoring in your country. Number and type of site(s) are to be determined at your discretion with an explanation. Considerations may be based on social, demographic, economic or environmental importance of site(s) as well as the strength of the site(s) to act as a national indicator of the litter problem. Proximity and ease of access are important considerations.

6. Project action plan

The proposal should include an action plan outlining the work to be undertaken by each team member, and timelines for the implementation of project activities over the 3-year project period, with a detailed plan to undertake monitoring in the first year, and less detailed plans for the second and third year. The plan should include objectives and activities of the project and should correspond with those outlined in the goals and objectives section as well as plans to continue monitoring after the initial three-year period (e.g. suggestions on how to maintain research through commitment to sustain funds for consumables, etc., or efforts to obtain new and/or complementary funds).

7. Risk analysis

Possible problems, difficulties, and/or factors that could prevent timely completion and/or successful implementation of project activities should be clearly identified, and mitigation measures explained. Additionally, a self-assessment should accompany this; detail what is currently missing to establish/implement long-term marine litter monitoring or laboratory research (specific items to describe: expertise/training, and equipment needs detailed) and a statement of the techniques that personnel will require to undertake monitoring.

8. Evaluation plan

The proposal should include an evaluation plan, including a results-based management framework with indicators of success, for monitoring progress of the proposed project towards results. A description of how data quality will be checked should be included.

9. Literature cited

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

10. Budget and budget justification

The proposal should have a clear and detailed budget for all activities including costs for training, equipment, consumables and travel for each year. (Note: Equipment will be centrally bought, but funding does not cover staff salaries, although it may be used to pay student assistants or casual labour).

11. Annexes

A. Details of the institution: A brief description of the institution submitting the proposal should be provided, including a motivation outlining the capacity of the institution to

carry out the proposed work, and to manage the research activities from a logistic and financial perspective.

B. Two-page curriculum vitae (CVs) for the Principal Investigator (PI), technicians, and other senior project team members should be included, with all CVs in one file.