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INDIVIDUAL CONSULTANT PROCUREMENT NOTICE

Date: **23th December 2019**

TITLE OF CONSULTANT: Individual Consultant (IC) to undertake a robust data collection exercise for the re-modelling of the management and operational practices of the Kasane Landfill.

COUNTRY: BOTSWANA

DESCRIPTION OF ASSIGNMENT: The purpose of the consultancy is to ultimately

- improve the aesthetics of the landfill, given that it is located in a tourist destination.
- Assess and minimize the landfill impacts on the environment.
- develop long term sustainable operational practices within the landfill.
- determine the remaining operational life of the landfill.

PROJECT NAME: Environment and Climate Change Response

PROJECT NUMBER: 00102700

SUPERVISION: Programme Specialist - Environment

Proposals with reference should be submitted in a sealed envelope clearly labelled, “
Individual Consultant (IC) to undertake a robust data collection exercise for the re-modelling of the management and operational practices of the Kasane Landfill.
”

Should be submitted at the following address no later than **13th January 2020 at 12:00pm (Botswana Time)**

to:

*The Resident Representative
United Nations Development Programme
P.O. Box 54
Gaborone*

or by email to: procurement.bw@undp.org

Any request for clarification must be sent in writing, or by standard electronic communication to the address or e-mailed to enquiries.bw@undp.org UNDP Botswana will respond in writing or by standard electronic mail and will send written copies of the response, including an explanation of the query without identifying the source of the inquiry to all prospective facilitators.

NOTE: Consultancy firms/companies interested in applying for this assignment are free to do so provided they submit a CV of only one qualified consultant and present its bid in a manner that would allow for evaluation of the bid in accordance with the evaluation criteria specified in these solicitation documents. That is, the experience required is that of the individual whose CV would have been submitted by the company rather than that of the company. Further, if the submitted bid wins, the ensuing contract will be between the UNDP and the company/firm, not the individual.

1. BACKGROUND

1.1. Introduction:

The Kasane Landfill is located along the Upper Road, A33, the main road from the Kasane International Airport going through to Kazungula. The landfill can be viewed clearly from the road which is at approximately 200m from the landfill. It sits at 700m from the Chobe River and 200m from the Nyungwe Irrigation Scheme Park. The location of the landfill, in relation to the Chobe river as well as other places such as the main road, shopping malls, bird breeding centre and the airport, poses economic, environmental as well as challenges to public acceptance among others. In order for the landfill to be better managed, and effectively run, and possibly relocated, certain data needs to be collected and analysed for the purposes of developing a strategy that will be utilized for the Kasane Landfill. This data collection will be undertaken over a period of 6 months to take into regard seasonal variations, waste type variations, and other operational and management practices of the landfill. Such data collection will also serve to inform management strategies for waste in other regions in Botswana.

The purpose of this Terms of Reference (ToRs) is to define the objectives, scope of service and the deliverables (duties and responsibilities) of the personnel providing the service of data collection at the Kasane Landfill. It is intended that the methodologies developed under this consultancy will have relevance and applicability to the management of landfills in the rest of Botswana.

2. SCOPE OF WORK & RESPONSIBILITIES

The Consultant shall work in close coordination with the Principal Waste Management Officer of Department of Waste Management and Pollution Control and will be responsible for the following:

1. RESEARCH AND DATA COLLECTION
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a) Undertake hydrological monitoring at the Kasane Landfill

The consultant will be required to undertake the following activities;

- i. Extensive literature review on geophysical applications for landfill monitoring as well as the geology of the project area, its waste disposal history and groundwater quality monitoring and any other relevant data, with the view to determine appropriate geophysical methods for the exercise.
- ii. Reconnaissance survey to appreciate site conditions and prepare for fieldwork
- iii. Geophysical profiling of the site using five (5) or more geophysical methods to determine the waste volume, establish pockets of gas and leachate in the waste pile, identify possible leachate pathways in the lining material at the tip face and in the leachate pond and determine the source and extent of pollution around the landfill borehole. Suggested geophysical methods may include but not limited to electrical, electromagnetic and seismic methods.
- iv. Process and interpret all data using applicable software and produce maps and sections showing the distribution of measured parameters.
- v. Produce a report indicating the processes followed during data collection, challenges encountered, findings of the investigation and recommendations for future exercises of this nature.

b) Undertake groundwater and surface water monitoring

The Consultant will be required to undertake the following activities:

- i. Borehole survey, to include location, depths and water levels, in the area within one kilometre around the landfill.
- ii. In the light of the results of the geophysical survey, drill and install new groundwater monitoring boreholes, two upgradient and two down gradient of the landfill as needed. Install groundwater level monitoring logging instruments
- iii. Review of existing groundwater and surface water quality data.
- iv. Collect water samples from ground water monitoring boreholes over a period of 6 months, using the groundwater sampling programme developed and record the data on a monthly basis.
- v. Development of groundwater sampling programme based on standard *BOS ISO 5667-11:2009* which is entitled *Water Quality Sampling Part 11: Guidance on Sampling of GroundWaters*.

c) Undertake air quality monitoring

The Consultant will be required to undertake the following activities:

- i. Drilling/boring/installation of a number of gas sampling tube wells in the waste for extraction and sampling of gas. The number and positions of the wells will be determined by a qualified geologist or engineer with relevant experience in landfill gas monitoring.
- ii. Procurement of portable gas sampling equipment and dust monitors. Gas sampling will need Kevlar bags and a peristaltic pump and ambient air sampling will need cumulative

sample tubes to be mounted at strategic locations over the duration of the contract. Analysis to be done in an appropriate contracted laboratory.

- iii. Deployment of dust samplers (3) around the site taking account of prevailing wind direction. Samples to be collected weekly for weighing and recording. Sampling will also be done at the wells, at the extraction point from the incinerator room and also near the landfill offices.

d) Undertake Waste Characterisation and Management Activities

The Consultant will be required to undertake the following activities:

- i. Work with Council officers for collection of all waste data as given below:
 - Total volume and mass of waste entering landfill over 6 months
 - Types of waste entering landfill (eg collected MSW, construction waste, types of industrial waste)
 - If possible, based on any historical waste input data, assess the rate of change of waste input annually over the lifetime of the landfill to date.
 - Compiling of data for industries producing most waste in total and per waste type. Industries producing most waste can be used as models for assessing the potential for piloting waste management strategies such as recycling, reuse, reduction and separation of waste at source. Such management strategies will reduce waste entering the landfill, encourage industries to view their waste as a resource and reduce costs associated with collecting and transporting waste to landfill
- ii. Characterization of waste entering landfill over 6 months. The objective of waste characterization is to assist in assessing the potential for waste diversion/recycling and the potential for environmental impact when landfilled. In this context, characterization of the waste would be into broad categories such as organic waste (food and 'garden' residues), paper, plastics, textiles, glass, metals and 'miscellaneous' (includes soil, stone, ceramics).

e) Site Management and Practice

- i. Record the presence (and estimate number) of birds at least twice daily while on-site.
- ii. Review and record state of the fencing by traversing the perimeter
- iii. Record any observations by the operatives on the landfill of animal incursions
- iv. Record and detail the practice of compaction and covering of waste and the source of any material used

f) Assessment of landfill equipment

- i. Compile a list of existing landfill equipment for weighing and recording waste inputs, cutting of waste for size/volume reduction, loading/offloading and transporting landfill cover material, compaction of waste and waste incineration.
- ii. Determine the adequacy and efficiency of the equipment and estimate remaining lifespan.
- iii. Estimate costs for replacement and or maintenance of the equipment

g) Assessment of landfill personnel

- i. Undertake a skills audit of all landfill staff including the landfill manager, and machine/equipment operators

- ii. Prepare a training module for all landfill staff to close existing gaps
- iii. Conduct training for staff for all staff using various methods including but not limited to workshops, attachments, etc.

h) Review of landfill fees

- i. Undertake a financial assessment incurred to manage one (1) tonne of waste from the weighbridge, through disposal, compaction and application of cover material and aftercare. This should also be extended to medical waste which is processed at the medical waste incinerator, waste tyres and garden waste.
- ii. Review efficiency of the payment method used and
- iii. Recommend sustainable disposal fees for each type of waste through consideration of social, environmental and economic factors as well as payment methods suitable for all.

3. Key deliverables:

- i. Inception Report submitted and presented with a detailed Work Plan explaining understanding of the Terms of Reference as well as methodologies to be followed in undertaking the activities/tasks.
- ii. A scoping report submitted and presented outlining the situation analysis and key preliminary issues identified to be able to complete the study expeditiously.
- iii. A draft final report outlining data collected, interpretations and objectives realized with clear recommendations for the following Consultant and action plans with indications on how they might be implemented.
- iv. Final report incorporating all recommendations by technical committee.

4. QUALIFICATIONS, EXPERIENCE AND COMPETENCIES

- Degree in environmental engineering/health/science or hydrology/hydrogeology or equivalent.
- 10 years proven experience in waste management, regionally or internationally, specifically on landfills.
- Registration with professional bodies.
- Proven experience in the development of regional and or national waste management strategies.
- Good presentation and communication skills

5. DUTY STATION

The individual consultant will be based in Kasane, Botswana during the data collection period.

6. SUPERVISION

The IC will be supervised by the DWMPC Principal Waste Management Officer with support from UNDP.

7. METHODOLOGIES

The consultant will adopt a consultative approach to develop the expected deliverables. Specifically, the consultant will;

- Undertake desk review of relevant documents and databases.
- Undertake this assignment in consultation and collaboration with relevant stakeholders including DWMPC and UNDP.
- Develop the training programme based on the Botswana condition.

8. DOCUMENTS TO BE INCLUDED WHEN SUBMITTING THE PROPOSALS

Interested individual consultants must submit the following documents/information to demonstrate their qualifications:

a. **Technical Proposal:** The technical proposal should include the following:

- Profile of consultant and an outline of recent experience on assignments of a similar nature.
- The consultant's interpretation and demonstrated understanding of the assignment. Including a clear data collection programme and duration of the programme.

b. **Financial proposal:**

- Lump-sum consultancy fee
- The lump sum should be broken down to clearly indicate: travel, per diems, and actual consultancy fees (daily fee)
- An indication of whether this rate is flexible

c. Personal CV including past experience in similar projects and contacts of at least 3 referees

9. TRAVEL

All envisaged travel costs must be included in the financial proposal. This includes all travel to join duty station/repatriation travel. In general, UNDP should not accept travel costs exceeding those of an economy class ticket. Should the IC wish to travel on a higher class he/she should do so using their own resources. In the case of unforeseeable travel, payment of travel costs including tickets, lodging and terminal expenses should be agreed upon, between the respective business unit and Individual Consultant, prior to travel and will be reimbursed.

10. EVALUATION

- **Stage 1:** Preliminary evaluation of the proposals will be based on yes/no response as per the table below. If the response is “no” for any of the 3 criteria, the consultant will be disqualified from further evaluation.
- **Stage 2:** Technical Capability of the Consultant to deliver the required consultancy outputs evaluated on a scale of 0-100 points wherein the qualifying mark is 70%. The criteria to be used are shown below:

Technical Criteria	70% of total evaluation	
Criteria A	Relevant education background: Degree in environmental engineering/health/science or civil engineering or any other related field. Master’s degree in any of the fields above is an added advantage.	Yes/No
Criteria B	Adequate work and/or professional experience: 10 years of relevant experience in Waste Management Research, and/or experience in facilitating training on Waste Management Planning in landfills at national or international levels	Yes/No
Criteria C	Complete Consultancy package submitted (Technical and financial proposals)	Yes/No
Criteria D	Experience in Waste Management Planning, operations and management of waste treatment facilities. Experience in training on waste management and waste management planning. Excellent writing, editing, and report writing skills in English;	25
Criteria E	Methodology/Approach: A clear description of the methodology - describing how the consultant will collect the data, and which relevant data will be collected. Detailed work plan of when activities will be implemented and completed	25
Criteria F	Previous work experience in one or more countries or in the region on issues related to waste.	20
Criteria G	Knowledge of waste research, management, concepts and principles and the ability to apply these to strategic and/or practical situations;	20
Criteria H	Working experience in an international organization or knowledge of UN policies, procedures and practices	10

Individual consultants will be evaluated based on the Cumulative Analyses Methodology (weighted scoring method), where the award of the contract will be made to the individual consultant whose offer has been evaluated and determined as:

- a) Responsive / compliant / acceptable, and

b) Having received the highest score out of a pre-determined set of weighted technical and financial criteria specific to the solicitation.

- Technical Criteria weight; (70%)
- Financial Criteria weight; (30%)

Only Individual Consultants obtaining a minimum of 70% of the obtainable points of 100 points in technical evaluation would be considered for the Financial Evaluation. The total number of points allocated for the price component is 100. The maximum number of points will be allotted to the lowest price proposal that is opened and compared among those technical qualified candidates who have attained a minimum of 70% score in the technical evaluation. All other price proposals will receive points in inverse proportion to the lowest price

UNDP applies a fair and transparent selection process that would take into account both the technical qualification of Individual Consultants as well as their price proposals. The contract will be awarded to the candidate obtaining the highest combined technical and financial scores.

UNDP retains the right to contact references directly.

11. REMUNERATION

The payment schedule will be as follows:

Payment shall be made against deliverables in the following instalments:

Approval of inception report	5%
Approval of scoping report	25%
Approval of draft final report – data collection	65%
Approval of final report	5%
TOTAL	100%