**INDIVIDUAL CONSULTANT PROCUREMENT NOTICE**

Date: **29th September 2020**

**Country:** Republic of Botswana

**Description of the assignment:** UNDP is seeking the service of individual consultant to conduct analysis of Wildlife Landscape Connectivity to understand the present state of the remaining functional Kalahari ecosystem as a prerequisite to land use planning which can achieve long-term conservation goals. This is one of the goals of the Kgalagadi and Ghanzi Dryland Ecosystem Project (KGDEP) which aims to secure wildlife habitat connectivity between Kalahari Transfrointer Park (KTP) and Central Kalahari Game Reserve (CKGR) that can facilitate seasonal movements and gene flow ensuring long-term population persistence. Understanding the geographic-specific requirements to achieve such is a prerequisite to successful Integrated Land Use Planning in this ecosystem.

**Period of assignment/services:** Consultant should propose the duration of the assignment; however, should not exceed 12 calendar months following contract signing.

**PROJECT NAME:**

**PROJECT NUMBER: SUPERVISION**: Programme Specialist Environment and Climate Change

**Proposals with reference should be submitted in a sealed envelope clearly labelled “Wildlife Landscape Connectivity Analysis.**” should be submitted at the following address no later than **11th October 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**

Since the earliest aerial surveys were flown over Botswana’s Kalahari ecosystem in the late 1970’s, it has been well-appreciated that the area in between Kgalagadi Transfrontier Park (KTP) and Central Kalahari Game Reserve (CKGR) constitutes the core habitat for free-ranging Kalahari wildlife, particularly during the calving wet season. This unprotected area, known as the Schwelle, distinctly contains a high density of mineral pans which diminish in number in both the southwest or northeast direction towards the two protected areas (KTP and CKGR, respectively). The critical importance of this landscape is reflected, for example, in the 2015 aerial survey results whereby a substantial proportion of gemsbok (30%), nearly half of hartebeest (46%) and kudu (47%), and the majority of ostrich (54%), springbok (68%), eland (61%) and wildebeest (77%) free-ranging populations were distributed outside of the protected areas rather in the wildlife management areas (WMAs) comprising the Schwelle.

It is also widely recognized that compared to most ecosystems, wildlife in the Kalahari dryland environment have exceptionally large spatial requirements to access highly variable food resources and to seek refuges during drought times. Despite this, an expansion of boreholes and cattleposts, combined with an increase in wildlife-proof fencing on ranches and along transportation corridors, continues to cause habitat loss and threatens to fragment wildlife populations. Already, dry season refuges that wildlife historically accessed during infrequent but periodic severe droughts, have been cut off to the north of CKGR and to the south of KTP by fences. These fences are the known ultimate causes of decline of erstwhile huge semi-migratory herds of hartebeest and wildebeest, as well as the suspected ultimate cause for springbok population decline.

While the Kalahari has become smaller and sharply defined in extent by wildlife-proof fences, it is mainly the expansion of boreholes and cattleposts that threaten wildlife habitat and connectivity in the center of the remaining ecosystem – the important Schwelle in between KTP and CKGR. An advancement in borehole technology plus available capital, delayed gazettement of WMAs, and decades of policies that have discouraged traditional natural resource user rights while instead promoting livestock as a rural development strategy, combine to facilitate this encroachment. Although Land Boards strive to avoid allocating cattleposts inside even ungazetted WMAs, it occasionally happens, and residents of officially recognized settlements within WMAs are also entitled to apply for new cattleposts within 20 km development radii of these settlements.

The spatial impacts of borehole-cattlepost encroachment on wildlife species remains unquantified and the true extent of wildlife habitat loss in the Schwelle and the state of remaining population connectivity between KTP and CKGR is also unknown. Livestock encroachment has become so pervasive that some authorities believe connectivity for several important large wildlife species has been lost already. However, this is speculation. It is necessary to understand the present state of the remaining functional Kalahari ecosystem as a prerequisite to land use planning which can achieve long-term conservation goals. One of these goals (Component 3) is to secure wildlife habitat connectivity between KTP and CKGR that can facilitate seasonal movements and gene flow ensuring long-term population persistence. Understanding the geographic-specific requirements to achieve such underpins the entire UNDP-KGDEP and is the essential prerequisite to successful Integrated Land Use Planning in this ecosystem.

**2. OBJECTIVE**

The aim of the consultancy is to understand the present state of the Kalahari ecosystem in terms of functional landscape connectivity for multiple wildlife species, and the spatial factors which influence such connectivity, in order to inform land use planning. Through state-of-the-art quantitative spatial modelling, the consultant will provide science-based descriptions and predictions that will guide land use planning to achieve the conservation goal of securing wildlife habitat connectivity between KTP and CKGR for long-term population persistence of Kalahari wildlife.

**3. SCOPE OF WORK**

The bidder will be required **to conduct a quantitative multi-species, multiscale Wildlife Landscape Connectivity Analysis encompassing the free-ranging (unfenced) Kalahari ecosystem including Protected Areas (KTP, CKGR), Wildlife Management Areas (KD1, KD2, KD5, KD6, KD11, KD12, KD15, GH10, GH11, GH13, KW2, KW6, SO2), and Communal Grazing Areas (KD3, KD7, KD13, KD20, KD27, GH6, GH9, KW1, KW5, KW7, SO1),** specifically the following;

# Data collection:

1.1.1. Environmental layers: Utilize, modify, and where necessary develop new spatially accurate environmental geographic layers for the areas listed above, including vegetation, soils, roads, settlements, fences, and borehole-cattlepost (livestock waterpoint) locations. In particular, existing spatial datasets for borehole-cattlepost locations are incomplete, inaccurate and outdated; an accurate layer must be developed using resources such as high-resolution satellite imagery.

1.1.2. Wildlife data: Utilize existing comprehensive Kalahari wildlife species occurrence and abundance field data relevant to the areas listed above. Comprehensive implies all mammalian wildlife species with 0.2 kg body mass and larger, including all large and small herbivores, carnivores, and insectivores. These data must span a 10-year period (2008 – 2018). They must be representative of adequate temporal (wet/dry seasons) and spatial replication of disturbance gradients in the Schwelle, with sample coverage that includes all potential corridor areas between KTP and CKGR.

**1.2 Spatial analysis**:

1.2 Spatial analysis:

Consultant will utilize the above data within the UNICOR species connectivity and corridor network simulator (Landgruth et al. 2012) to quantitatively assess landscape connectivity for Kalahari wildlife species. UNICOR “provides invaluable ability to quantitatively compare spatially explicit conservation and restoration scenarios and prioritize actions to have the largest cumulative effects on population connectivity.” It is computationally intensive and requires high-performance computing.

**5. DELIVERABLES**

The consultant is expected to deliver the documents outlined below:

1. Initial (Phase 1) Landscape Connectivity Analysis Report, including:
* Assessment of the current state of the comprehensive multi-species free-ranging Kalahari wildlife landscape (from data-based multi-scale modelling of distribution and abundance), including the identification of core areas and existing connectivity between KTP and CKGR.
* Identification of the key environmental driver(s) of wildlife species spatial use in the Kalahari landscape, including quantification of spatially explicit response gradients of wildlife species occurrence and abundance in relation to those key environmental driver(s)
* Identification of the subset of most disturbance-sensitive species for further analysis.
1. Final (Phase 2) Landscape Connectivity Analysis Report, including:
* Predictions in high resolution spatial detail (mapping) of the existing species-specific wildlife connectivity landscape including the remaining core areas and functional corridors linking KTP and CKGR.
* Spatial prioritization and assessment of value of each management unit and ranking of core areas and corridors for importance for key individual species and all species jointly
* Evaluation of the impact of a limited set of future scenarios (e.g. expansion of boreholes-cattleposts within 20 km WMA village development radii) on core area and corridor integrity.
* Application of the UNICOR modelling and scenario planning to provide guidance on:
	+ the spatial limits of tolerable encroachment beyond which each corridor likely ceases to function;
	+ prioritized restoration actions (e.g. particular borehole deactivation/repurposing) that will maximize wildlife corridor and core area integrity;
	+ potential areas where industrial/agricultural development might occur without negatively impacting wildlife corridor and core area integrity; and
	+ potential areas where industrial/agricultural development expansion might occur without negatively impacting wildlife corridor and core area integrity.

**6. DELIVERABLE REMUNERATION**

Payment shall be made against deliverables in the following instalments:

1. 20% Inception Report
2. 40% payment upon approval of the Initial Report capturing all actions listed in the Deliverables relevant to Phase 1.
3. 40% payment upon approval of the Final Report capturing all actions listed in the Deliverables relevant to Phase 2.

**7. REQUIREMENTS FOR EXPERIENCE AND QUALIFICATIONS**

**Qualifications**

Education

* PhD in Remote sensing, GIS, Landscape modelling or any other related fields.

Experience

* At least 10 years of relevant professional experience in remote sensing, GIS landscape pattern analysis, and landscape connectivity modelling;
* wildlife landscape connectivity modelling, and demonstrable experience with UNICOR specifically; and
* field research throughout the Kalahari Ecosystem, including the prior collection of wildlife data described in the scope of work
* Proven experience in developing/implementing similar projects
* Experience of work in the region is an asset.

Languages

Excellent English writing skills are essential.

Partnerships

* Maturity and confidence in dealing with senior members of national institutions.
* Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability.
* Excellent written communication skills, with analytic capacity and ability to synthesize relevant collected data and findings for the preparation of quality analysis for the project proposal.
* Excellent coordination skills and result oriented collaboration with colleagues.

Results

* Promotes the vision, mission, and strategic goals of UNDP.
* Builds strong relationships with clients, focuses on impact and result for the client and responds positively to feedback.
* Good team player who has ability to maintain good relationships.

**8. TIME SCHEDULE AND PERIOD OF THE CONSULTANCY**

In consultation with MENT and UNDP, the consultant will develop an elaborate schedule/ workplan for the assignment. However, the duration of the assignment should not exceed 12 calendar months (duration of ILUMP development) following contract signing.

**9. REPORTING AND SUPERVISION**

The Consultancy will be supervised by UNDP/KGDEP PMU and CTA with the assistance of the relevant Government Departments who will form the Consultancy Technical Reference Group.

**10. DOCUMENTS TO BE INCLUDED WHEN SUBMITTING THE PROPOSALS**

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

1. **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 review of the TORs and appreciation of the assignment – the objectives, tasks and deliverables.
* A clear description of the methodology and work plan that the consultant proposes to execute the assignment, illustrated where appropriate, with a chart of activities.
* A timeline for carrying out the assignment.
1. **Financial proposal:**
* Lump-sum consultancy fee broken down to clearly indicate actual consultancy fees (daily fee), travel expenses if any and other incurred costs as relevant.
* An indication of whether this rate is flexible
1. **Personal CV** including past experience in similar projects and at least 3 references

**11. UNDP CONTRIBUTION**

UNDP will provide the consultant with organizational and logistical support to carry out his/her duties as outlined above.

**12. EVALUATION**

Individual consultants will be evaluated based on the following methodology:

**Cumulative analysis**

When using this weighted scoring method, the award of the contract should be made to the individual consultant whose offer has been evaluated and determined as:

1. responsive/compliant/acceptable, and
2. 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.

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| **Criteria** | **Weight** | **Max. Point** |
| **Technical evaluation** |  |  |
| ***Criteria A:*** Qualifications -PhD in the fields of Remote sensing, GIS, Landscape modelling or any other related fields. | 10 | 10 |
| ***Criteria B:*** Adequate work experience - At least 10 years of relevant professional experience and Proven experience in developing/implementing similar projects experience in remote sensing, GIS landscape pattern analysis, and landscape connectivity modelling.  | 10 | 10 |
| ***Criteria C:* Context** - Previous successful experience in undertaking wildlife landscape connectivity modelling, and proven experience with UNICOR specifically; and field research throughout the Kalahari Ecosystem, including collecting wildlife data described in the scope of work.  | 30 | 30 |
| ***Criteria D:* Technical Competence** - Demonstrable analytical and research skills, and capacity to collate and present technical reports, information and data accurately, systematically and in concise formats, in a short period of time.  | 20 | 20 |
| ***Criteria E:* Approach -** Demonstrated understanding of the assignment; and response to the terms of reference with elaboration of the methodology that will be used in responding to the terms of reference.  | 30 | 30 |