**Government of the People’s Republic of Bangladesh**

**Office of the Project Director**

**Feasibility Study of Trans boundary wildlife corridor**

 **in Chattogram, Chattogram Hill Tract and Cox’s Bazar with Myanmar and India**

**Feasibility Study of Trans boundary wildlife corridor in Chattogram, Chattogram Hill Tract and Cox’s Bazar with Myanmar and India Project**

**Terms of Reference (ToR)**

**Package No: SR-1**

**Sheikh Kamal wildlife Center, Gazipur**

**Bangladesh Forest Department.**

**Terms of Reference (ToR)**

Selection of consulting firm for the Feasibility Study of Trans boundary wildlife corridor in Chattogram, Chattogram Hill Tract and Cox’s Bazar with Myanmar and India

1. **Introduction:**

Bangladesh Forest Department (BFD) under the Ministry of Environment, Forest and Climate Change has received GoB funded of 381.30 lac BDT for a period of 1 years ( July 2020 to June 2021) to implement **Feasibility Study of Trans boundary wildlife corridor in Chattogram, Chattogram Hill Tract and Cox’s Bazar with Myanmar and India project.**

The overall Project activities are designed to carry out feasibility study to identify wildlife corridor with special focus on the two flagship species, Asian Elephant and Tiger. Wildlife does not have any boundary. The mega fauna, especially, elephant and tiger can cross the international border of India and Myanmar and can enter into Bangladesh and vise-versa. The major scope of this project is to find the wildlife corridor connectivity within the country and Trans boundary wildlife corridor connectivity among India, Bangladesh and Myanmar. The proposed activities try to develop a methodology to identify the potential wildlife corridors by engaging national and international wildlife experts and professionals.

In this feasibility study, the activities includes extensive field survey of the proposed area through mapping, environmental, ecological and social impact analysis; Elephant and tiger habitat status survey taking into consideration of fragmentation status, nature of existing wildlife corridors, potential corridors and natural/physical obstacle analysis; furthermore, species composition and forest health survey; land use and household survey; and assessment of food chain, water and resting place.

1. **Project background:**

Bangladesh is situated at the intersection of the Indo-Himalayan and Indo-Chinese sub-regions, in the transitional zone for the flora and fauna of the Indian subcontinent and Southeast Asia, and part of the Indo-Burma biodiversity hotspot (Stanford 1991, Feeroz 2013). The country features a great diversity of natural ecosystems, and consequently is one of the most ecologically significant and biologically diverse landscapes in terms of migratory species, stepping stones, staging ground and flyways for wildlife movements of the region.

Bangladesh is blessed with the occurrence two widely recognized and famous flagship species of wild animals: Asian Elephant (*Elephas maximus*) and Tiger (*Panthera tigris*). These two species are the icons of the natural heritage of Bangladesh and play crucial roles in maintaining the ecological balance and developing ecotourism. The Asian Elephant occurs mainly in the hill forests of the Chittagong Hill Tracts (CHT), Chittagong and Cox’s Bazar, but there are vagrants along the border areas of greater Mymensingh and greater Sylhet. The Tiger, on the other hand, occurs mainly in the Sundarbans, but few of them still survive in the remote forest patches of the CHT, particularly in Kassalong Reserved Forest and Sangu Wildlife Sanctuary. Therefore, the only area in the country where both the Asian Elephant and Tiger occur is the CHT, so the area offers the opportunity to conserve both species under one project. This is the only habitat for the Tiger outside the Sundarbans in Bangladesh, which is, unlike the Sundarbans, safe from the primary effect of sea-level rise.

Sadly, both Asian Elephant and Tiger are globally and nationally threatened by IUCN Red List, due to habitat loss and fragmentation as well as poaching. Moreover, a number of forest corridors in Cox’s Bazar bordering the CHT that were used by the Asian Elephant have damaged and blocked due to the settlement and camps established for forcefully displaced Myanmar citizens.

Along with these two flagship species, other forest dwelling wild animals, including many globally and nationally threatened wildlife species like Western Hoolock Gibbon (*Hoolock hoolock*), Phayre’s Langur (*Trachypithecus phayrei*), Capped Langur (*T. pileatus*), Clouded Leopard (*Neofelis nebulosa*), Chinese Pangolin (*Manis pentadactyla*), Hog Deer (*Axis porcinus*), Gaur (*Bos gaurus*), Red Serow (*Capricornis rubidus*), Great Slaty Woodpecker (*Mulleripicus pulverulentus*), Burmese Python (*Python molurus*), King Cobra (*Ophiophagus Hannah*), Malayan Box Turtle (*Cuora amboinensis*), Keeled Box Turtle (*C. mouhotii*), Arakan Forest Turtle (*Heosemys depressa*), Asian Giant Tortoise (*Manouria emys*), Asiatic Softshell Turtle (*Amyda cartilaginea*) and Khare’s Stream Frog (*Pterorana khare*) are found in the CHT making it an incredibly biodiverse place.

There are a total of 11 protected areas in the CHT (IUCN Bangladesh 2015). Besides the PAs, tropical mixed-evergreen forests are also the habitat of the incredible biodiversity. Both the PAs and remaining habitats outside the PAs are facing severe fragmentation due to anthropogenic threats. It limits the migration, adaptation capacity and genetic diversity of the wild flora and fauna.

The Convention on Biological Diversity (CBD), of which Bangladesh is a signatory, sees protected areas within the larger landscape context. Specifically, Article 8 mentions that “*a protected area system or areas where special measures may need to be taken to conserve biological diversity will be established*” (1992). It has given opportunity to promote conservation and connectivity of biological corridors and creation of interconnected networks of PAs that function as conservation areas. Biological corridors are vital for the survival of animals that need a large territory to move around for food, breeding and shelter. Corridors are also vital for the sustaining the genetic viability of isolated populations as well as preventing regional extinction of species, increase the area and density of the two linked patches of habitat and change an unsuitable habitat into a more suitable one (IUCN Bangladesh 2016).

Therefore, it has become a priority for the country to create a network of biological corridors across the CHT, which can be called ‘Wildlife Corridor’. The corridors in CHT will improve natural habitat quality and diversity in the landscape to support the entire spectrum of wildlife movement among the PAs and natural landscape areas.

1. **Objectives of the Assignment:**
2. Carry out feasibility study to identify the potential sites for establishing transboundary wildlife corridor **in Chattogram, Chattogram Hill Tract and Cox’s Bazar with Myanmar and India**.
3. To assess the present status of wildlife habitat connectivity.
4. Identify the potential wildlife habitat.
5. **Proposed Area of Wildlife Corridor:**

 The proposed corridor will try to connect the national PAs and the existing forest patches outside the PAs. Moreover, the corridor network will have connectivity potential to the Asian Elephant and Tiger populations in the neighboring India (Mizoram and Tripura States) and Myanmar (Chin and Rakhine States) as well as the isolated population of the Asian Elephant in Cox’s Bazar.

**5. Scope of Work:**

The Consultation firm will undertake the following tasks:

* Literature review and Public consultation to know the historical presence of elephant and tiger in the proposed area.
* Formulate the methodologies to conduct feasibility study on wildlife corridor and finalization with 3 consultation meeting/workshop with experts, related stakeholders (including Hill District Divisions, BGB, Bangladesh Army etc.) in local and national level;
* Develop training module on importance of wildlife corridor and connectivity, conservation of forest, wildlife and ecosystem, GPs use and data management, camera trapping, identification of wildlife signs etc. and facilitate training program for forests staffs, project staffs, local journalists and other stakeholders;
* Assessment of habitat condition of the proposed study area (prey/fodder, water, roosting and grooming place etc.);
* Identify the natural and anthropogenic disturbances in the proposed area.
* Identify present threats (Human-Wildlife Conflict, illegal hunting, deforestation, monoculture, hill cutting/mining etc.) of the proposed study area;
* Identify the existing and possible connectivity of wildlife corridor through landscape analysis;
* GIS Mapping the potential connectivity route through similarity analysis with existing wildlife corridor;
* Conduct camera trapping study to know the evidence of Tiger & habitat suitability of Tiger including availability of prey species as well as the status of other wildlife in the remote forest patches of the CHT, particularly in Kassalong, Sangu-Matamuhuri and Pablakhali Wildlife Sanctuary as well as other possible areas;
* Social survey including FGDs for the perception of local ethnic people to reintroduce of Tiger in CHT;
* Formulate plan with all inclusive participation for establishing the wildlife corridors.
* Conduct three Workshop (one in Dhaka) and two Regional (one in Rangamati Circle and one in Chittagong Circle) to share the finding of the study;
* Identify the scope of development of future projects through this feasibility study.
* Any other duty assigned by the project director.

**6. Output:**

1. The Wildlife Corridor will be identified for establishing the wildlife corridor to improve the wildlife habitat.

2. The connectivity among nearest forest patches will be identified for improving through development of possible corridor.

3. Proposed plan for establishing wildlife corridor and prescription for improving the corridor connectivity.

**7. Transfer of Knowledge (training)**

In order to transfer of knowledge, the Consultation Firm will develop training module and facilitate training program (4 batches, 20 trainee/batch) for forests staffs, project staffs, local journalists and other stakeholders on importance of wildlife corridor and connectivity, conservation of forest, wildlife and ecosystem, GPs use and data management, camera trapping, identification of wildlife signs etc.

**8. List of Reports/Deliverables, Schedule of Deliveries, Period of Performance**

**Table: 1**

| **Document/Reports/Deliverable** | **Reporting To** | **Delivery schedule** |
| --- | --- | --- |
| **Deliverable 1**: Inception Report (including detailed work plan, Methodology development to conduct feasibility study on wildlife corridor and finalization with 3 consultation meeting/workshop, FGD etc.) | Project Director through focal person and respective DFO | Within the 2nd month of the contract period.  |
| **Deliverable 2**: Training module, facilitate 4 batches training program, reconnaissance survey report etc. | Project Director through focal person and respective DFO | Within the 3rd month of the contract period. |
| **Deliverable 3**: Mid-term progress report (including assessment of habitat condition of the proposed study area, natural and anthropogenic disturbances, present threats, identify existing and possible connectivity of wildlife corridor etc.) | Project Director through focal person and respective DFO | Within the 5th month of the contract period  |
| **Deliverable 4**: Draft report (including camera trap survey report, report on social survey findings, Tiger feasibility study report, strategic plan for wildlife corridor and tiger reintroduction program)  | Project Director through focal person and respective DFO | Within the 7th Month of the contract period  |
| **Deliverable 5**: GIS based mapping on potential trans boundary wildlife corridor and habitat connectivity. | Project Director through focal person and respective DFO | Within the 8th month of the contract period.  |
| **Deliverable 6**: Final Report (including conduct of local consultation meetings and 3 Workshop (one in Dhaka) and two Regional (one in Rangamati Circle and one in Chittagong Circle) to share the finding of the study, acceptance of the study report by authority) | Project Director through focal person and respective DFO | Within the 10th month of the contract period.  |

**9. Data, personnel, facilities and local services to be provided by the client**

* The PMU will provide necessary information and instruction at the field level.
* Logistics support (GPS, Trap camera etc.) will be provided by the PMU as per DPP only for study period. The firm will have to return all logistics to PMU by ensuring good conditions after the completion of the study.
* Any other support/service mentioned in the DPP.
* Firm needs to ensure that one of the Pay-roll member of the firm will coordinate and work in the PMU during the project period.
* It is mandatory to take approval from the Project Director before starting any kind of activity.

10. **Institutional Arrangement:**

Following arrangement needs to be followed during the implementation of the project,

1. The consulting firm will deploy team leader and appropriate technical experts to work at different areas as mentioned in the ToR. The technical experts will undertake activities (scope of services) mentioned in the ToR in order to achieve the stated objectives.
2. There will be a Project Management Unit at Sheikh Kamal Wildlife Center, Gazipur. Director and existing officers of SKWC will assist the Project Director for administrative as well as feasibility study related task. Regarding the project management, feasibility study and other works mentioned in DPP, the firm will regularly collaborate with the PMU.
3. Officers and staffs of respective forest divisions will be trained for engaging the survey and related fields. The field work plan and its implementation need to be consulted and endorsed by the concerned DFOs and PMU. Any changes in the plan needs to be agreed by the PMU.
4. Before finalize of any report or deliverable, the awardee firm will have to organize meeting/workshop with the BFD officials to invite inputs/observations from the participants. The inputs/ suggestions from the meeting/workshop to the report or deliverable might be finalized and submitted to the PMU.
5. Except GPS and trap camera, the consulting firm should have the arrangements for other necessary equipment to conduct this feasibility study.

**11. Team Composition:**

The consulting firm feature at least the following nine (09) key experts along with other Program coordinator, Finance and admin officer, Admin Manager, HR Manager and Supporting staff needed to accomplish this assignment:

**Table: 2**

| **Sl. No.** | **Description** | **Qualification** | **Experience** |
| --- | --- | --- | --- |
| 1. | Team leader | Masters in Wildlife Biology/Natural Resource Management. PhD degree will be given preference. | 10 years’ experience in Elephant and Tiger habitat as well as wildlife corridor management. |
| 2. | Elephant expert (National) | Masters in Wildlife Biology. Experience in research on elephant and related PhD degree will be given preference. | 10 years’ experience in related field. |
| 3. | Elephant expert (International) | Masters in Wildlife Biology. Experience in research on elephant and related PhD degree will be given preference. | 10 years’ experience in related field out of which at least three (3) years of international professional experience on elephant ecology. |
| 4. | Tiger expert (National) | Masters in Wildlife Biology. Experience in research on Tiger and related PhD degree will be given preference. | 10 years’ experience in related field. |
| 5. | Tiger expert (International) | Masters in Wildlife Biology. Experience in research on tiger and related PhD degree will be given preference. | 10 years’ experience in related field out of which at least three (3) years of international professional experience on tiger ecology. |
| 6. | Project Manager | Masters in Wildlife Biology/Natural Resource management. | 5 years’ experience in related field. |
| 7. | Programme Assistant (Elephant) | Masters in Wildlife Biology. | 2 years’ experience in related field. |
| 8. | Programme Assistant (Tiger) | Masters in Wildlife Biology. | 2 years’ experience in related field. |
| 9. | Programme Assistant (GIS) | Masters in Masters in Geography/Natural Resource Management. | 2 years’ professional experience in Remote Sensing and Conservation GIS expert. |

**10. Duration of Assignment:** The duration of this assignment is up to 10 months.

**Payment Schedule**

# **The payment schedule will be as follows:**

* **Twenty (20) percent** of the contracted amount will be paid by the client upon submission and acceptance of deliverable 1 of TOR i.e. Inception Report (including detailed work plan, Methodology development to conduct feasibility study on wildlife corridor and finalization with 3 consultation meeting/workshop, FGD etc.) that need to be submitted within 2nd month from the commencement date of contract.
* **Ten (10) percent** of the contracted amount will be paid by the client upon submission and acceptance of deliverable 2 of TOR i.e. Deliverable 2: Training module, facilitate 4 batches training program, reconnaissance survey report etc. that need to be submitted within 3rd months from the commencement date of contract.
* **Twenty (20) percent** of the contracted amount will be paid by the client upon submission and acceptance of deliverable 3 of TOR i.e. Deliverable 3: Mid-term progress report (including assessment of habitat condition of the proposed study area, natural and anthropogenic disturbances, present threats, identify existing and possible connectivity of wildlife corridor etc.) that need to be submitted within 5th months from the commencement date of contract.
* **Twenty (20) percent** of the contracted amount will be paid by the client upon submission and acceptance of deliverable 4 of TOR i.e. draft report ((including camera trapping result as well as social survey findings and strategic plan for wildlife corridor and tiger reintroduction program) that need to be submitted within 8th months from the commencement date of contract.
* **Ten (10) percent** of the contracted amount will be paid by the client upon submission and acceptance of deliverable 5 of TOR i.e. Deliverable 5: GIS based mapping on potential trans boundary wildlife corridor and habitat connectivity that need to be submitted within 9th months from the commencement date of contract.
* **Ten (20) percent** of the contracted amount will be paid by the client upon submission and acceptance of deliverable 6 of TOR i.e. Deliverable 6: Final Report (including conduct of local consultation meetings and 3 National and Regional workshops to share the finding of the study, acceptance of the study report by authority) that need to be submitted within 10th months from the commencement date of contract.