



UNITED NATIONS DEVELOPMENT PROGRAMME TERMS OF REFERENCE / INDIVIDUAL CONTRACT

I. Position Information

Position Title:	International expert on implementation of SMART patrol system
Type:	Individual Contract
Project Title/Department:	UNDP-GEF “Sustainable natural resource use and forest management in key mountainous areas important for globally significant biodiversity” project
Duration of the service:	March 2019 - September 2020 (18 months), 150 working days
Duty station:	Home-based with four missions (two in 2019, two in 2020) to Uzbekistan.
Reports to:	Project Manager

II. Background information

Uzbekistan is globally and regionally important in terms of its biodiversity due to its location between the European, Middle Eastern, and Asian biogeographical regions. Its varying landscapes of high mountain ranges, wide steppes, deserts, riparian wetlands, and the Aral Sea has results in a wide diversity of habitats. UNDP, for many years, have supported the Government of Uzbekistan in tackling environmental challenges, including in the area of biodiversity. UNDP/GEF and Republic of Uzbekistan project on “Sustainable natural resource use and forest management in key mountainous areas important for globally significant biodiversity” will further support the country in addressing biodiversity conservation challenges, specifically with focusing on mountain ecosystems such as the western-most outliers of the western Tian Shan (Chatkal, Pskem, Ugam and Kuramin ranges) and Pamir-Alai (Gissar, Turkestan and Zaravshan ranges), which are home to the endangered snow leopard, and provide important habitat for its key prey species.

The project objective is ‘To enhance the conservation, and sustainable use, of natural resources in the biodiverse high-altitude mountain ecosystems of Uzbekistan’, and the project is structured into four components, with each component comprising a complementary suite of two to three outputs:

- i) Component 1: Landscape level planning and management decision-making;
- ii) Component 2: Strengthening key biodiversity areas;
- iii) Component 3: Sustainable economic development incentives for communities;
- iv) Component 4: Promoting cooperation and collaboration.

Within the framework of the implementation of component 2 "Strengthening key biodiversity areas", it is planned to develop and implement a SMART patrol system in two pilot sites - in the Western Tien Shan and Pamir-Alai - in the Chatkal State Biosphere Reserve and Gissar State Reserve.

UNDP is seeking a highly qualified and capable International Expert on development and implementation of a smart patrol system based on relevant knowledge and experience, conduct appropriate trainings for protected area staff to use it, test it, assist in implementing the system and assess the effectiveness of its use.

The International Expert will carry out its activities under the full supervision of the project manager and in coordination with the Project Field Coordinator for protected areas.

III. Functions / Key Outputs Expected

Situational analysis and smart patrol system development.

1. Carry out analysis of best practices in organization and functioning of the smart patrol system around the globe, with particular focus on countries with analogous legislation and/or similar environmental conditions and socio-economic development.
2. Analyze the needs and priorities for establishment and implementation of a smart patrol system in the PAs targeted by the project, including clearly defining the clear and specific objectives to be achieved through use of a smart patrol system, and the expected benefits from implementation of a smart patrol system through defined quantitative performance indicators (i.e. % reduction in poaching or illegal activities, % improved monitoring coverage of patrolling, increased rigorousness and extent of biodiversity monitoring data, etc.)
3. Study the respective enabling conditions for implementation of a smart patrol system, including the legislation context, potential limited use of various communication means (i.e. inadequate cellular networks in remote areas, etc.), including the radio communication and internet for the smart patrol system implementation, in close cooperation with the project team.

4. Conduct analysis of physical and geographical (terrain features) and technical (internet availability, mobile communication, etc.) conditions of project territories (Chatkal State Biosphere Reserve and Gissar State Reserve) for use in smart-patrolling.
5. Analyze existing capacity of pilot protected areas and the PA staff for identification of opportunities and limitations in use of various types of smart patrol systems and development of a respective comprehensive smart patrol ranger training programme (including patrol planning, mapping, GPS technology, data collection, animal and plant identification, search and arrest, data processing and storage, etc.) based on the analysis.
6. Collect existing data on inspection work (i.e. current level of patrolling effort per hectare, cost per unit time/area of patrolling, etc.) for baseline identification and for further identification of the effectiveness of the smart patrol system (for tracking the progress).
7. Develop list of data categories that will be used in smart patrol system such as type of illegal incidents, ways of conducting inspection work (inspecting on-foot, horses, vehicles), animal species and traces of their activities, etc., in close cooperation with the project team, protected area staff and the inspection service on control and use of biodiversity and protected areas of the State Committee of the Republic of Uzbekistan for Ecology and Environmental Protection.
8. Prepare possible scenarios of smart patrol system introduction, including detailed description of proposed scenarios for Chatkal State Biosphere Reserve and Gissar State Reserve, based on analysis and consultations. Smart patrol system should include the following, apart from others:
 - a. Detailed description of data collection, fixing and transfer of data for storage and processing;
 - b. Prompt processing of data, their storage, access and sharing amongst stakeholders, and further use and analysis;
 - c. Mechanism of adaptive management of nature protection activities in accordance with the data obtained as a result of smart patrolling;
 - d. Mechanism of assessment of the system performance (“success indicators” of using the system).
9. Develop the respective list of necessary equipment (hardware) with detailed technical specifications for the selected smart patrol system.
10. Develop technical specifications for organization and work of the smart patrol center.
11. Provide the relevant software for the smart patrol system which is adapted to local conditions (interface language, cartographic materials, etc.), including development of an application for the GPS-enabled data collection devices to capture the spatial and attribute data collected by patrolling rangers.
12. Develop the detailed training programmes:
 - a. For training of inspectors to conduct smart patrolling (knowledge/educational and hand-out materials, etc.);
 - b. For training of trainers, who will further be able to independently conduct training courses for inspectors on smart patrol system.
13. Develop detailed plan of smart patrol system work at least during project life-cycle (on reporting, conducting analysis, dissemination of practices, etc.).
14. Develop financial plans on smart patrol implementation and its maintenance for long-term conditions and sustainability.

Introduction and implementation of the smart patrol system.

1. Develop (and reach agreement on) the detailed plan of smart patrol system introduction and implementation.
2. Providing support for training for inspectors and trainers on smart patrol, as for the staff on data analysis and processing.
3. Facilitate, in case of need, regular meetings and/or workshops between managers, ranger patrol staff, communities and other stakeholders in and around the reserve to discuss and analyze smart patrol data outputs, and collaboratively identify ways to address ongoing threats.
4. Provide technical inputs and guidance to procurement of technical equipment necessary for smart patrol system, and for installing and setting up equipment in field-based working conditions.
5. Install and implement the smart patrol system in Chatkal State Biosphere Reserve and Gissar State Reserve.
6. Provide assistance and advice to pilot protected areas inspection on smart patrol system use.
7. Conduct initial monitoring and analysis of smart patrol system implementation and make additions and corrections to the system as necessary.
8. Conduct analysis of smart patrol system effectiveness based on the monitoring.

Recommendations and further actions

Based on the monitoring and analysis of introduced smart patrol system performance:

1. Document the experience and practice, develop feasibility assessment for replication at a national level, as appropriate, and provide support to the project in replication and scaling-up of this good practice, as appropriate and feasible.
2. Provide support to the project, in technical aspects, in organization and conducting of a national workshop or other appropriate advocacy events for promotion of the smart patrol system at national level.
3. Develop a respective guidebook for protected area staff on introduction and implementation of a smart patrol system based on lessons learnt and good practices.

Work planning and progress reporting

1. Prepare (and consult with the project team) detailed plan of actions on development, introduction and implementation of smart patrol system in snow leopard landscapes (within the pilot protected areas).
2. Prepare annual workplans based on the detailed plan of actions.
3. Provide reports on results within an agreeable template and timeframe based on the annual workplan and other inputs as may be required by the project for reporting.
4. Provide information and inputs to the project on progress for project events such as conferences, workshops, in case of need.
5. Maintain regular and adequate communication with the project team, as required.

IV. Deliverables and timeframe

The following deliverables and indicative schedule are expected from the consultancy contract. The final schedule will be agreed upon in the beginning of consultancy assignment.

#	Deliverables	Outputs-based payments	Timeframe	Payment Conditions
1.	Detailed report on analysis of: <ol style="list-style-type: none"> a. Existing experience on smart patrol system organization and implementation; b. Policy context (legislative and regulatory conditions) affecting smart patrol system implementation in Uzbekistan; c. Physical, geographic and technical conditions of two (Chatkal State Biosphere Reserve and Gissar State Reserve) pilot protected areas; d. Indicators of inspection work of two pilot protected areas for identification of baseline; e. Existing capacity of two pilot protected areas (Chatkal State Biosphere Reserve and Gissar State Reserve), including the Ugam Chatkal State National Nature Park and Ugam-Chatkal Reserve (overall 4 protected areas). 	5% of the total contract amount	30 April 2019	20 % of the total contract amount June 2019
2.	Detailed proposals for the organization of a smart patrol system in two pilot areas, including but not limited to <ol style="list-style-type: none"> a. Possible scenarios for implementing a smart patrol system in two pilot areas (with a detailed description of each of the proposed scenarios); b. Expected results from implementation of a smart patrol system in terms of performance indicators relative to baseline levels. 	5% of the total contract amount	31 May 2019	
3.	List of equipment for organization of smart patrol system developed and submitted to the project.	5 % of the total contract amount	30 June 2019	
4.	Detailed plan on organization and monitoring of smart patrol system as well as the financial calculations/plans for smart patrol system maintenance prepared and submitted.	5 % of the total contract amount		
5.	A comprehensive smart patrol ranger training programme developed and submitted.	10 % of the total contract amount	31 August 2019	20 % of the total contract amount

6. A set of adapted software for smart patrol system, including the application for GPS-enabled data collection devices developed and installed.	10 % of the total contract amount	31 October 2019	October 2019
7. Smart patrol ranger trainings conducted.	15% of the total contract amount April 2020	30 March 2020	15% of the total contract amount April 2020
8. Smart patrol system implementation in two pilot protected areas (Chatkal State Biosphere Reserve and Gissar State Reserve) launched.	10% of the total contract amount June 2020	30 June 2020	45 % of the total contract amount September 2020
9. Interim monitoring report of smart patrol system implementation prepared and submitted.	10 % of the total contract amount	31 August 2020	
10. A guidebook for protected area staff on introduction and implementation of a smart patrol system based on lessons learnt and good practices.	15 % of the total contract amount	30 September 2020	
11. Final report on smart patrol system implementation in Uzbekistan with lessons learned and recommendations for replication.	10 % of the total contract amount		

Payment Conditions

This is a lump sum contract that should include costs of consultancy and international travel costs (and in-country air ticket costs), accommodation and meal (DSA or per diems in Tashkent and Kashkadarya regions) and visa costs required to produce the above deliverables.

Payment will be released in 4 (four) instalments below upon timely submission of respective deliverables and their acceptance by the Supervisor and UNDP CO.

VI. Recruitment Qualifications

Education:	Master's degree on biology, ecology, agriculture, management of natural resources, conservancy and/or in information technologies
Experience:	1. Proven practical work experience on the subject not less than 5 years: <ul style="list-style-type: none"> a. Smart patrol system installation and implementation, including adapted to local conditions; b. Work experience with protected areas; c. Experience on smart patrol training programme development and implementation; d. Practical experience and knowledge of the organization of the smart patrol system work and having a corresponding qualification of adaptation and installation of a smart patrol system software.
Language Requirements:	Working knowledge of English is required, and knowledge of Russian and/or Uzbek is an advantage.
Others:	Good understanding of local policies and practices in protected areas management; Outstanding time-management, organizational and interpersonal skills.

UNDP is an equal opportunity employer. Qualified female candidates, people with disabilities, and minorities are highly encouraged to apply. UNDP Gender Balance in Management Policy promotes achievement of gender balance among its staff at all levels.

VII. Signatures- Post Description Certification

Incumbent		
Name	Signature	Date
Supervisor		
Abbos Akhadov Project Manager	Signature	Date