Technical Specifications

Project	Support to Nature Protected Areas in Ukraine", BMZ No.:2011.6612.3 and 2013.6588.1
Title	Procurement of mobile biodiversity monitoring equipment for the eight target areas.
Short title	Mobile Monitoring Equipment
Reference number	NT-2021-17-NAT-Mobile Monitoring Equipment

1. Type of Procurement

This procurement will be conducted in 7 lots.

Lot 1	GPS devices
Lot 2	Binoculars
Lot 3	Laser Range Finders/Clinometers
Lot 4	Tree calipers
Lot 5	Pocket water multimeters
Lot 6	Tablet computers and rugged protective cases for the tablets
Lot 7	Headlamps

Following the regulations stated in the Project Management Manual, the procurement method to be used will be **collection of three price quotes** for each lot.

2. Context

Protected areas worldwide rely on robust biodiversity monitoring for achieving conservation targets and effective management work. Data collected from monitoring provide insights into parameters such as animal population sizes and densities, forest and habitat conditions, animal and plant communities (biodiversity), animal distributions across the protected areas, and many more. These data thus provide direct information regarding conservation statuses and trends. This allows PA managers to stay timely informed about important changes in the PAs, enabling them to identify the most promising conservation interventions and reacting to negative developments in a timely and appropriate manner. Robust biodiversity monitoring also provides a crucial ability to evaluate the effectiveness of implemented conservation measures, allowing for adaptive management to achieve long-term conservation success.

For the work of collecting reliable biodiversity data in the field, PA researchers require a set of specific mobile technical equipment. Some equipment is needed to allow for secure navigation in the field (e.g. GPS devices and headlamps) while others are needed to allow for the detection of relevant biological targets (e.g. using binoculars).

Also, certain mobile monitoring equipment is required to conduct measurements and data collection directly in the field (e.g. rangefinders and tablets).

Currently, the eight target areas of the SNPA project do not possess the required technical equipment to conduct important basic biodiversity monitoring in large enough scales and qualities directly in the field. This leads to the following issues:

- Scientific staff of the areas are limited in the ways they can conduct biodiversity monitoring surveys. Thus, the available data about species distributions and population sizes is usually not very robust and relies on small sample sizes and anecdotally obtained information with low reliability.
- There is only a small amount of data available despite the large protected areas and huge potentials for scientifically highly attractive biodiversity research.

This combination of low quantity and low quality of the available biodiversity monitoring data means that the target areas have only very limited possibilities for objectively assessing the conservation effectiveness of their work and management approaches. Timely responses and adaptations to conservation threats are therefore difficult.

This procurement aims to provide the target areas with the most essential monitoring equipment necessary for conducting regular and robust biodiversity monitoring directly in the field.

This procurement is linked to the following sections of the project's Overall Operational Plan:

- Output 4. The administration and management of the national protected area management system (MENR) is strengthened.
    - SA.4.5. A modern biodiversity monitoring system is tested and applied in the project areas to be later replicated countrywide
        - T.4.5.3. Pilot activities are implemented in selected protected areas
            - ST.4.5.3.1. Conduct tenders and procurements to implement monitoring activities.

3. Objectives

Global objective

A contribution to the conservation of the biological diversity in Ukraine is delivered.

Specific objective

Through the availability of high-quality equipment for basic mobile biodiversity monitoring in the field, the target protected areas are empowered to strongly increase the effectiveness of their biodiversity monitoring work. This will significantly increase the amount of available biodiversity data while also leading to much better accuracy and reliability of the data. This will lead to more robust and reliable monitoring results which in turn will form the basis for improving the management and conservation effectiveness of the areas.
Detailed explanations of the equipment to be procured are provided in the table below along with descriptions of why and for which purposes they are needed by the protected areas.

To determine which type of mobile monitoring equipment should be procured, extensive consultations were conducted with the protected areas. Their specific needs and monitoring interests were considered and integrated as much as possible into the development of the below specifications. Also, the SNPA project consulted with international experts to obtain information about the required equipment for conducting biodiversity monitoring using the most up-to-date methods. These consultations highlighted that some types of equipment must meet very specific criteria and features that may only be combined in one specific brand and model type.

4. Specifications

#	Item	Purpose	Specifications	Units
Lot 1				
1.1	**GPS devices**	Reliable GPS devices are a basic necessity for many different types of protected area work. In this procurement, only a small number of GPS devices will be procured to cover the most basic needs. The remaining GPS requirements shall be covered through the use of special rugged smartphones which will be provided in large numbers through a separate procurement in the near future.	Based on market research and experiences from field work in the past, the model **Etrex 22x from the brand Garmin** was chosen for this lot. Garmin is the internationally leading manufacturer of GPS devices with a very long track record, proving high quality and functionality of their products. The selected model (Etrex 22x) provides very high value for money, compared to other Garmin devices as well as compared to models of other brands. Based on expert opinion, the model has proven to be very durable over a long period of time which is a crucial property given that the target areas are generally underfunded and would not be able to replace broken devices. To ensure that high quality and durable GPS are procured, it was therefore decided to select this specific brand and model.	8
Lot 2				
2.1	**Binoculars 10x42**	Binoculars are a standard tool for field surveys and allow for effective in-person detection of animal species, especially birds. For the most part, the monitoring in the target areas is conducted in forested habitat. For this purpose, binoculars with the given specifications are generally sufficient. For more open spaces and longer distances, long-range telescopes may be procured in the future.	There are many different binocular brands and models on the market with prices showing a wide range for similar specifications. However, general specifications fail to address the general durableness of the binoculars and cheap products may have low durability despite being advertised as "rugged". As with the GPS devices, very high durableness of the binoculars is important as broken devices cannot be replaced by the protected areas due to underfunding. For this reason, it was decided to select a specific brand and model type which has proven to be of very high quality and highly durable, even under rugged conditions in the field. Brand and Model: **Nikon, Prostaff 5 10x42 (BAA821SA)** Nikon is a well-established and worldwide one of the leading manufacturers of optical equipment, with a long track record proving the high quality of their products. The selected model provides the highest value for money for these types of binoculars on the market, particularly due to their high durableness. The procurement of these binoculars will minimize the risks of premature equipment breakdown. • Magnification: 10x • Objective lens diameter: 42 mm • Prism type: Roof • Shock resistant shell	60

			• Fog-proof • Waterproof to at least 1 m depth • Lead-free and arsenic-free lenses. **Incl. accessories**: neck strap, carrying case, lens caps.	
Lot 3				
3.1	**Advanced Laser Range Finder (incl. Clinometer)**	Laser ranger finders allow for fast and accurate measurement of medium to very long distances (over 1000 m) in the field. This is especially necessary for certain monitoring survey types such as distance sampling. In addition, the proposed laser range finder can be used as a highly accurate and efficient clinometer. This equipment was frequently requested by the PAs' scientific staff and would provide high usability as it would be used very frequently and for several different purposes.	There is a wide variety of laser range finders and clinometers available on the market with qualities and prices spanning over a very wide range. Several discussions were conducted with the scientific staff of the PAs to identify their specific needs regarding this type of equipment. These exchanges showed that: - Assessing forest habitats represents one of the most common and important works conducted by scientific staff. This work includes data collection of tree heights, diameters, forest cover, etc. There is a large amount of such data to be collected in very regular intervals. - For efficient work, the data collection should be as automated as possible and fully digital. Analog clinometers are therefore of limited use. Especially in the mountainous terrain of the Carpathians, analog devices are very cumbersome to use and lead to very slow data collection. Specialized digital devices are capable of quickly assessing inclinations which strongly speeds up measurements in steep terrain. - Ideally, the equipment would also allow for directly including GPS coordinates of the taken measurements. This would strongly increase the efficiency of compiling the data in GIS databases as well as in specializes software, such as the Field-Map software. - In conclusion, the PAs stated the preference to receive a small number of a highly specialized and versatile device rather than a larger number of cheaper devices with fewer capabilities. There is a very limited number of manufacturers and models on the market who fulfill these highly specialized requirements for professional purposes. Based on additional market research and further exchanges with the PAs, one specific model identified to be the most suitable to fulfill the PAs' needs The device to be purchase is the **TruPulse 360R Laser Rangefinder by Laser Technology Inc.** This brand and model were selected for the following reasons:	9

			- The device fulfills all the requirements stated above (this was confirmed by science staff from PAs). - The device is of very high ruggedness and waterproof (IP56). - It includes a 2-year warranty. - The manufacturer is a leading company in the field of laser range finders and has been operating for over 30 years with a positive track record. - External expert opinions confirmed that this device is of high quality in terms of measuring accuracy, practicality and durableness.	
Lot 4				
4.1	**Tree calipers, ca. 127 cm**	Tree calipers are essential tools for assessing and monitoring forest habitats and collecting forestry data such as trunk diameter.	The tree calipers shall also be designed for long-term use under demanding field conditions. Therefore, the equipment shall be made of durable material as specified below. - Scale size: ca. 127 cm (+/- 10 cm) - Weight: Up to 2000 g - Graduations: cm and mm - Scale Material: Aluminum (handles can be plastic) - Robust design for long-term use Certification for accuracy: FPA (Forstlicher PrüfAusschuss), PTB (Physikalisch-Technische Bundesanstalt), or equivalent.	8
4.2	**Tree calipers, 80 cm**	Tree calipers are essential tools for assessing and monitoring forest habitats and collecting forestry data such as trunk diameter.	The tree calipers shall also be designed for long-term use under demanding field conditions. Therefore, the equipment shall be made of durable material as specified below. - Scale size: 80 cm - Weight: Up to 1400 g - Graduations: cm and mm - Scale Material: Aluminum (handles can be plastic) - Robust design for long-term use Certification for accuracy: FPA (Forstlicher PrüfAusschuss), PTB (Physikalisch-Technische Bundesanstalt), or equivalent.	21
Lot 5				
5.1	**Pocket water multi-meters**	Freshwater quality is also an important parameter to be assessed in the target protected areas. In particular, the monitoring of fresh water conditions in terms of pH, conductivity, concentration of dissolved substances and temperature.	The following model was identified to be procured: **Hanna Instruments, Pocket Multimeter HI 98129.** Based on market research as well as opinions of practicing scientists, this model provides measuring results in the accuracy needed for scientific research spanning the most important freshwater parameters. In addition, it has high durability for long-term use. In particular, the	20

			selected multimeter model allows for replacement of the electrode. This can strongly prolong the lifespan of the device and avoids that the full device must be replaced as soon as the electrode is not intact anymore. It also provides long battery life of up to 100 hours of continuous use. Based on expert opinion, this device therefore provides the best value for money.	
Lot 6				

6.1	**Tablet computers**	Another important part of monitoring work in the protected areas is the **mapping of habitats** within the areas. This represents an essential activity as it helps to inform the PA management of where rare and threatened habitats are located inside the areas. Currently, the target areas are lacking equipment for modern habitat mapping. Instead, PA staff use traditional methods (mostly pen and paper) which is a slow and inefficient process and results in unnecessarily high workload. Therefore, this procurement also aims to provide tablet computers to the protected areas which can be taken to the field for highly efficient and accurate habitat mapping work.	Tablet computers with the following specifications shall be procured:
			- Operating System: Android
			- Color: Black or Silver
			- Display:
			  o size: 10-10.5 inch diagonal
			  o resolution: 2.560 x 1.600
			- Main camera:
			  o Autofocus
			  o Resolution: min. 12 MP
			- Processor: Octa-Core
			- RAM: min 4 GB
			- Internal storage: min 64 GB
			- MicroSD slot with at least 256 GB potential storage
			- LTE capability
			- Navigation: GPS, Glonass, Beidou, Galileo
			- Weight: up to 430 g
			- Battery: min. 7000 mAh
			- USB 3.1 Gen. 1
			- The manufacturer must possess the following certifications:
			  o ISO 14001 for Environmental Management System
			- ISO 45001 for Occupational Health and Safety Management System
				10

6.2	**Rugged protective cases for the tablet computers**	To minimize the risk of damage to the tablet computers in the field.	Rugged protective case, fully compatible with the tablet computer.	10
Lot 7				

7.1	**Head Lamps**	For field visits (research and patrols) at night time.	- 2 white LED lights with 3 brightness outputs
			  o Brightness - Low: 6 lumens / Medium: 100 luments / High: 300 lumens
			  o Runtime – 2h / 9h / 120h
			- 1 red LED light
			- Strobe function for emergencies
			- 3x AAA batteries
			- Water resistance IPX-4
			- 3 year warranty
				210

5. Environmental and Social Standards (ESS)

Potential environmental and social risks shall be managed and minimized in this procurement through ensuring that the requirements of relevant ESSs are met.

Standards	**Relevant (yes/no)** If yes, specify: What are possible unintended negative outcomes?	**Measures to be taken to** a) reduce the likelihood of unintended negative outcomes occurring, b) mitigate negative implications in case unintended negative outcomes do occur
ESS1 Assessment and Management of Environmental and Social Risks and Impacts	Yes. If potential risks and negative outcomes are not identified, they may be harder to mitigate and likelihood that they may occur is increased.	Conduct assessment of risks and impacts and identify all relevant ESSs. Wherever possible, measures and minimum requirements of the equipment are specified, aiming to minimize negative unintended consequences (see the criteria identified for ESS 2-10).
ESS2 Labour and Working Conditions	Yes. Manufacturing sites of the equipment may expose workers to unnecessarily high safety risks or generally poor working conditions. Unsafe equipment might lead to increased safety risks for users.	Where specific equipment manufacturers were chosen, attention was paid to manufacturers that do not show any track record of negative labour and working conditions and possess ISO 45001 certifications for management systems of occupational health and safety, whenever possible. For other equipment, products by manufacturers who possess ISO 45001 certifications will be preferred in the evaluation process.
ESS3 Resource Efficiency and Pollution Prevention and Management	Yes. Several types of equipment to be procured may contain hazardous substances that may pose environmental risks or may be produced in unsustainable ways.	Where specific equipment manufacturers were chosen, attention was paid to select possess ISO 14001 certifications for environmental management, whenever possible. For other equipment, products by manufacturers who possess ISO 14001 certifications will be preferred in the evaluation process.
ESS4: Community Health and Safety	No.	
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	No.	
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	No.	
ESS7: Indigenous Peoples	No.	
ESS8: Cultural Heritage	No.	

ESS9: Financial Intermediaries	No.	
ESS10: Stakeholder Engagement and Information Disclosure	No.	The protected areas were consulted with to identify the types, specifications and amounts of monitoring equipment to be purchased. Through this engagement, likelihood of acceptance of the provided goods is high.

6. Delivery, Reception and Payment

Delivery:
The goods shall be delivered according to the terms of delivery DDP. **The prices should not include VAT**.

Reception:
The goods are to be delivered to the SNPA Project Office in Lviv. They will be distributed to the target areas separately by the SNPA project.

Payment:
100% payment for the goods will be conducted within ten (10) days after the delivery of the goods to the SNPA Project Office in Lviv.

7. The minimum qualifications of the supplier and instruction to bidders

Participating companies must be legal entities registered in Ukraine, PPE (physical person entrepreneur) registered in Ukraine.

This QSM is also published on the SNPA website www.snpa.in.ua to allow for participation of additional qualified suppliers. At least three price quotes will be collected and the best proposal (technically compliant offer at the lowest price) will be selected for contracting.

The proposals shall be sent to the following e-mail address: info@snpa.in.ua with indication of the refence number of the procurement: NT-2021-17-NAT-Mobile Monitoring Equipment. The deadline for submitting the proposals is on or before **12:00 (GMT+3) on 08/10/2021.**

Proposals shall be valid for sixty (60) days from the date of submission. Bidders are required to submit one proposal for one lot, several or all of the lots. Bidders are required to submit one proposal for all items of each Lot.

Proposals shall be in UAH currency. Prices quoted shall be fixed and correspond to at least 100% of the items required/specified.

A bidder requiring any clarification of the Bidding Documents shall contact the PEA **only in writing** at the PEA's address info@snpa.in.ua