

# REPORT

about the implementation of the second stage of the contract work  
QSM-2017-8-PA-CBR-expansion [BMZ Project Numbers: 2011.6612.3 and 2013.6588.1] Project on the expansion of the territory of the Carpathian Biosphere Reserve within the Tyachivskyi district at the expense of beech virgin and old-growth forests, and also economic forests to meet the needs of the local population by fuelwood

## **Tasks of the stage under the terms of the contract:**

Development of a complete package of documents for the extension of the CBR territory applied to the Ministry of Ecology and Natural Resources of Ukraine (MENR), which includes:

- scientific justifications (in accordance to the “Regulation on the establishment of common requirements for projects for the creation of territories and objects of protected areas”, which is valid for the reporting period),
- formal request for CBR extension to the MENR;
- detail map of the territory of planned expansion;
- agreements with neighbor land users;
- plan on this territory zoning (including zoning map) and
- expert institutions review on quality of prepared justification.

The full package of legal and scientific documentation for the extension of the CBR territory to the Ministry of Ecology and Natural Resources of Ukraine should contain:

- the above mentioned 6 chapters (at least 31 pages) of scientific justification,
- the presented 6 chapters’ data should be incorporated into GIS cartographic materials (as described above) for each chapter,
- formal 2-5-page official letter supported by Administration and Research-Scientific Council of CBR supported by short summary of scientific justification of CBR expansion.
- detail GIS map of the area (at least 1:10,000) with identified borders of the CBR expanded study territory with detail characteristics of the borders (1 map, GIS layers);
- detail zoning GIS map of the area (at least 1:10,000) with identified borders of the CBR expanded study territory with detail characteristics of the borders (1 map, GIS layers) and justification of zones;
- agreements with neighbor land users (two forestry enterprises) including agreed border maps;
- 2 external reviews of relevant academic institutions and
- prepared project report (1 page of report with included copy of full package of legal and scientific documentation for the extension of the CBR territory to the Ministry of Ecology and Natural Resources of Ukraine).

## **The results obtained under the terms of the contract**

The complete report is made up of the Report on execution of works, "Scientific justification of changing the boundaries configuration (expansion) of the territory of the Carpathian Biosphere Reserve within the limits of the Tiachiv, Rakhiv and Khust districts of Zakarpattia region" (Annex 1) and the list of Annexes with their copies (Annex 2).

The following materials and documents were prepared as part of the works performed according to the terms of the Contract QSM-2017-8-PA-CBR-expansion:

- Maps of the changes in the boundaries configuration (expansion) of the territory of the Carpathian Biosphere Reserve at the expense of land plots of the Public Company "Mokrianske Forestry and Hunting Enterprise" and the Public Company "Brusturianske Forestry and Hunting Enterprise" with a total area of 8272.5 hectares (Annex 2, pp. 13 and 16);
- Maps for changing the boundaries (expansion) of the territory of the Carpathian Biosphere Reserve at the expense of the lands of the public companies "Brusturianske Forestry and Hunting Enterprise", "Khust Research Forestry Enterprise", "Rakhiv Research Forestry Enterprise" and "Velykyi Bychkiv Forestry and Hunting Enterprise" with a total area of 9532 ha, which are part of CBR without withdrawal from management, and are transferred to its administration for permanent use (Annex 2, pp. 16, 18, 21 and 24);;
- Maps of site layout plans for the territory under expansion (change of boundaries) of CBR in Tiachiv, Khust and Rakhiv districts (Annex 1, pp. 5 and 6);

- Maps of the proposed zonation of CBR's territory in terms of its expansion in Tiachiv, Khust and Rakhiv districts (Annex 1, pp. 100-103);
- Agreements on the change of boundaries (expansion) of the territory of the Carpathian Biosphere Reserve by the administrations of the public companies "Mokrianske Forestry and Hunting Enterprise" and "Brusturianske Forestry and Hunting Enterprise" with a total area of 8272.5 ha (Annex 2, pp. 11-12 and 14-15);
- Agreements on the transfer of lands to the permanent use by CBR granted by state-owned enterprises "Brusturianske Forestry and Hunting Enterprise", "Khust Research Forestry Enterprise", "Rakhiv Research Forestry Enterprise" and "Velykyi Bychkiv Forestry and Hunting Enterprise" with a total area of 9532 ha (Annex 2, pp. 14-15, 17, 19-20 and 22-23);
- Scientific justification of the CBR's territory expansion within Tiachiv, Khust and Rakhiv districts with a total area of 17,804.5 hectares. It includes 7 main sections dedicated to the sites' ecological conditions, biodiversity, in particular - rare species and coenoses, forest ecosystems, as well as the socio-ecological characteristics of the Project territory. Also here is information provided on the justification of the scheme of preliminary functional zonation of the Project territory, the environmental and socio-economic implications of CBR's expansion, elaboration of economic indicators for the development of CBR in connection with the expansion, in particular, the calculation of staff number and funds for the maintenance of the institution and its development, and as well as measures directed on the environmental protection, research, recreation, economic activity, conservation, reproduction and use of natural complexes and objects for a 5-year period. In general, the volume of scientific justification of the extension of CBR's territory, including drawings and annexes is 150 pages (Annex 1);
- Cartographic materials on distribution of rare coenoses, and species of flora and fauna; on the geological structure, geomorphologic structure, soils, water supply system, landscapes, CORINE soil cover types and the structure of forests of CBR's territory under expansion (Annex 1, respectively, pp. 9, 12, 17, 19, 20, 28, 37, 56 and 61);
- Expert opinions on the feasibility of expanding the territory of CBR - in total, 3 received from the National Forestry University of Ukraine (Lviv), Uzhgorod National University and the State Naturalistic Museum of the National Academy of Sciences of Ukraine (Lviv) (Annex 2, respectively, pp. 25-26, 27-29 and 30-31).

**Thus, all works under the terms of the contract QSM-2017-8-PA-CBR-expansion are completely fulfilled, within the specified terms and in full compliance with the ToR.**

During the implementation of contract works, a wide range of tasks has been completed:

- analysis of literature data on the territory planned for expansion of the Carpathian Biosphere Reserve (CBR) at the expense of the adjacent areas of primeval and old-growth beech forests (further on - Project Area). In total, more than 140 publications were processed, as a result of which the reviews on abiotic environment, flora and vegetation and fauna and wildlife of the Project Area were prepared, as well as an overview of protected areas and sites located here;
- analysis of archival materials for the purpose of the cameral identification of potential primeval and old-growth beech forests sites, in which the forest management materials of the Mokrianske Forestry and Hunting Enterprise were processed in the context of 5 forestry units (Tarasivske, Krasnianske, Ust-Chornianske, Rusko-Mokrianske and Komsomolske) and the ones of the Brusturianske Forestry and Hunting Enterprise (Hrunikivske forestry unit) for the period from 1948 to 2012. Also data obtained through several large-scale international projects were processed. First of all, it is the Ukrainian-Dutch project "Primeval forests of Zakarpattia (Ukraine) as core areas of the pan-European ecological network", which was carried out during 2005-2007 by the Carpathian Biosphere Reserve in cooperation with the Royal Dutch Society for the Conservation of Nature (KNNV) and funded by the Fund BBI-MATRA of the Ministry of Agriculture, Nature and Product Quality and the Ministry of Foreign Affairs of the Netherlands, as well as a number of projects on primeval and oldgrowth forests identification that were implemented in the Ukrainian Carpathians 2012 to 2017, under the auspices of WWF-DCP. According to the results of the analysis of archival materials, the cartographic materials were prepared that include a map of the primeval forests distribution in the territory of the Krasna mountain range and the adjoining sites, which were identified within the framework of the Ukrainian-Dutch project

"Primeval forests of Zakarpattia (Ukraine) as core areas of the pan-European ecological network", which was carried out during 2005-2007 by the Carpathian Biosphere Reserve in cooperation with the Dutch Royal Society for the Conservation of Nature (KNNV); a map of the primeval and oldgrowth forests distribution in the territory of the Krasna mountain range and the adjacent plots that were identified in a series of projects implemented in the Ukrainian Carpathians from 2012 to 2017 under the auspices of WWF-DCP; a map of the distribution of potential oldgrowth forests in the territory of the Krasna mountain range and the adjacent areas identified by analyzing the structure of forest cover (crowns) on the satellite maps of the Google Earth web resource (2014).

- implementation of the reconnaissance field work on September 5-7, 2018, during which a group of experts, which included forest scientists, botanists, zoologists and landscape researchers, made a trip to the Mokrianske Forestry and Hunting Enterprise, in order to get acquainted with the Project Area, which included the highland sites of the Tarasivske, Krasnianske, Ust-Chornianske, Rusko-Mokrianske and Komsomolsk forestry units. During the trip, the availability of primeval and oldgrowth forests was determined, the patterns of nature use in the adjacent sections of high mountain meadows were identified, and the main landmarks and references were registered, which would allow determining their location in relation to specific forestry unit and their compartments, as well as the sites were selected for permanent base camp during the main stage of field works;
- conducting major fieldwork during September 17 - November 15, 2018, which included 7 expeditions to the Project Area within Tiachiv and Khust districts. The total volume of field research works amounted to over 130 people / days;
- organization of meetings with village mayors of the territorial communities of Tiachiv district, within the limits of which the expansion of the territory of the Carpathian Biosphere Reserve is to be carried out, namely, the Ust-Chorna village council, Krasna and Ruska-Mokra village councils.

In the framework of the oldgrowth and primeval forests identification process, the methodology developed by WWF and approved by the Ministry for Environmental Protection of Ukraine dated on May 18, 2018, No. 161 "On Approval of the Methodology on Identification of Forest Areas as Primeval Forests, Quasi-Primeval and Natural Forests" that envisages cameral and field work phases was used. During the cameral stage, the forest management materials of the public companies "Mokrianske Forestry and Hunting Enterprise" and "Brusturianske and Hunting Enterprise" were processed, as a result of which a list of potential sites of old-growth and primeval forests was prepared. The following taxation indicators of the prospective territories were taken as the basis of election: age group - presence of over-mature tree stands; composition - absence of exotic species; the area - more than 20 hectares; and the configuration - the width of the site at least in one of the places should exceed 200 m.

During the field stage, the compliance of pre-selected sites with the following key indicators was checked: species composition, type of regeneration, structure, presence of dead wood, availability human impact traces, as well as the compliance to the spatial criteria as identified during the cameral works with regard to the area and shape. In general, more than 550 sample sites were laid in the process of field research.

The analysis of the data obtained was carried out on the basis of GIS-technologies using the ArcInfo software environment. On their basis, a schematic map was created for primeval and oldgrowth forests location within the Project Area on the Krasna mountain ridge (annexed). It is important to note that in case when some part of the analyzed forest compartment did not meet the criteria of primeval or oldgrowth forests, the plot was cut out and only the fragment which fully corresponded to the criteria mentioned above was taken into consideration. This approach is optimal, since it allows to identify much larger areas of primeval and oldgrowth forests. This is especially noticeable in the forests adjacent to highland meadows, which usually have features of primeval or oldgrowth forests, but at the same time bear the signs of the effects caused by various factors of anthropogenic influences in a narrow ecotone zone adjacent to the highland meadows, in particular in the zone of contacts with sub-alpine meadows.

In total, within the Project Area in the Tiachiv district, the forests were inspected on an area of more than 10 000 hectares, among which primeval forests were identified on an area of 3984 hectares and oldgrowth forests - on an area of 412 hectares. The rest of the surveyed forests - 6873 hectares - were attributed to us as managed ones.

As part of the project, a complete set of documentation was prepared, including cartographic materials, which allow expanding the territory of CBR by 8272.5 hectares and transfer to the permanent

use by the protected area some 9532 hectares, which today are part of CBR without withdrawal from management. As a result of the territory expansion, the total area of the Carpathian Biosphere Reserve will be 66308.3 thousand hectares, 49017.8 hectares of which will be transferred to it for permanent use.

According to the inventory, 320 species of vascular plants, 173 moss species, 364 lichen species and about 250 species of macromycete fungi were identified on the territory proposed for expansion. There are 208 species of vertebrate animals, and about a thousand species of invertebrates, the study of which keeps going on. Here, 71 species of fauna and growing sites for 44 species of flora (including fungi) listed in the Red Book of Ukraine (2009) were found, as well as the presence of 7 rare phytocoenoses included in the Green Book of Ukraine (2009) have been identified. It is also important that in the proposed expansion area a number of protected objects are located, which are protected by the status of nature monuments and protected sites.

As part of the tasks set by the contract, meetings were held with the mayors of the territorial communities of Tiachiv district, within which CBR was expanded. These are the mayors of Ust-Chorna, Krasna and Ruska Mokra villages. Unfortunately, the meeting with the mayor of the Tarasivka village council was not possible to be arranged. In general, the meetings discussed a range of issues related to the implications of the inclusion of territories into the biosphere reserve. Most of the mayors of these territorial communities were interested in how placing these areas under protection would influence the traditional nature management conducted by the local population, such as grazing of cattle, hay mowing, harvesting of mushrooms, medicinal plants, wild fruits and berries. Also, the topic of fire-wood was one of the key topics of the negotiations, as all the settlements in the CBR expansion area have no gas supply. In the course of negotiations with the mayors, the fact that the main part of the forest sites is located far away from settlements, which prevents a conflict of interests in future, was a significant argument in favor of the inclusion of the above-mentioned territories into CBR. It should be noted that the mayors of the territorial communities located in the vicinity of the expansion sites generally welcomed the prospect of including these territories to CBR.

Please find below a list of documents, copies of which are in the Annex 2.

1. A petition of NGO "RakhivEcoTour" to the Ministry of Natural Resources of Ukraine regarding the change of boundaries (expansion) of the territory of the Carpathian Biosphere Reserve (CBR);
2. Extract from the minutes of the CBR Scientific Technical Board's meeting regarding the approval of the petition to the Ministry of Natural Resources of Ukraine regarding the change of the boundaries (expansion) of CBR's territory;
3. Letter from the RakhivEcoTour NGO to the manager of the Zakarpattia Regional Department for Forestry and Hunting Management with the request to support the change of boundaries (expansion) of CBR's territory;
4. Letter from the head of the Zakarpattia Regional Department for Forestry and Hunting Management to the NGO "RakhivEcoTour" regarding the agreement to change the boundaries (expansion) of CBR's territory;
5. Approval of changing the boundaries (extension) of CBR by the Public Company "Mokrianske Forestry and Hunting Enterprise";
6. Map of changes in the boundaries (expansion) of CBR for the Public Company "Mokrianske Forestry and Hunting Enterprise";
7. Approval of changes in the boundaries (expansion) of CBR by the Public Company "Brusturianske Forestry and Hunting Enterprise";
8. Map of changes in the boundaries (expansion) of CBR for the Public Company "Brusturianske Forestry and Hunting Enterprise";
9. Approval of changes in the boundaries (expansion) of CBR by the Public Company «Khust Research Forestry Enterprise»;
10. Map of changes in the boundaries (expansion) of CBR for the Public Company «Khust Research Forestry Enterprise»;
11. Approval of changes in the boundaries (expansion) of CBR by the Public Company «Rakhiv Research Forestry Enterprise»;
12. Map of changes in the boundaries (expansion) of CBR for the Public Company «Rakhiv Research Forestry Enterprise»;

13. Approval of changes in the boundaries (expansion) of CBR by the Public Company «Velykyi Bychkiv Forestry and Hunting Enterprise»;
14. Map of changes in the boundaries (expansion) of CBR for the Public Company «Velykyi Bychkiv Forestry and Hunting Enterprise»;
15. Expert opinion on the reasonability of CBR's territory expansion from the National Forestry University of Ukraine (Lviv) prepared by Professor Vasyl Lavnyi;
16. Expert opinion on the reasonability of CBR's territory expansion from the Uzhgorod National University prepared by Associate Professor Vasyl Chumak.
17. Expert opinion on the reasonability of CBR's territory expansion from the State Naturalist Museum of the National Academy of Sciences of Ukraine prepared by PhD (biology), senior scientist Volodymyr Rizun.

**Head of the NGO “RakhivEcoTour”**

**Victoria Gubko**