About some ecological aspects of the pastoral polonyna farming in the Ukrainian Carpathians

(in the context of the implementation of the Protocol on Sustainable Development of Agriculture and Rural Areas to the Framework Convention on Protection and Sustainable Development of the Carpathians)

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(Vatra Dornei, Romania 2023)
Polonyna – is a highland treeless area (meadow) covered with grass, shrubs and moss-lichen vegetation, which is located at the altitudes of **1200-1300 m above sea level**, on the approaches to the highest mountain peaks (more than 2000 meters above sea level), and are part of the subalpine and alpine belts, which are the most ecologically vulnerable.

Polonynas are characterized by a cold and humid climate, a short and rainy vegetation period, and a long and snowy winter.
When conducting a polonya farming the problem of human-wildlife conflict with large predators, which belong to protected species, becomes acute.

In the Beskydy, Svydovets, Chornohora and Maramorosh, the crooked forest (shrubs), which served as an outpost for mountain forests and played an important water-regulating function in the most overmoistened highland part of the Carpathians, was almost completely destroyed and disturbed.
Livestock overgrazing leads to the impoverishment of grass, the formation of large areas covered with low-yielding species like **matgrass and Rumex alpinus**.

Unsystematic management of the pastoral Polonyna farming in the past was also **one of the reasons for occurrence of catastrophic floods on mountain rivers**.
According to statistics, in the mountainous natural territorial complexes of Chornohora **prevails sheep grazing**

In the structure of livestock, sheep make up **82%**. The rest - 17% of the Polonya livestock is accounted for by cattle (817 heads), and only 1% is horses (71 heads).

Over the last three decades in the Transcarpathian region (from 1990 to 2022) the **number of cattle decreased** from 352 to 120 thousand, and **sheep and goats from 269 to 130 thousand**.
In recent years, the uncontrolled, illegal massive collection of wild fruits and berries in the highlands, especially blueberries, lingonberries (mountain cranberry), and rare medicinal plants (for example, great yellow Gentian (*Gentiana lutea*), Roseroot or Golden root (*Rhodiola rosea*), mountain arnica (*Arnica Montana*), Icelandic moss or true Iceland lichen (*Cetraria islandica*), and others) has become a big problem.

The construction projects of gigantic ski resorts in the Carpathian highlands, for example in Svydovets, pose a significant threat to the conservation of wild nature and the traditional Polonyna farming in Ukraine.
Carpathian biosphere reserve

Date of designation: November 12, 1968
Status of UNESCO biosphere reserve: February 15, 1993
Status of biosphere reserve according to UA legislation: November 23, 1993

Certified Wilderness areas according EWS: 2016-2018
Status of Ramsar wetlands: March-April, 2019

Total area: 66 014 ha (comprising 8 isolated massifs (clusters))
Location and natural values

**Location:** southern macroslope of the main Ukrainian Carpathians watershed

**Altitudes:** 180 – 2061 m. asl.

**NATURAL VALUES**

- European biggest primeval forests: beech, mixed and spruce;
- Practically undisturbed alpine landscapes;
- Viable populations of large mammals (lynx, wolf, brown bear);
- Winter colonies of bats biggest in Ukraine;
- Postglacial alpine lakes;
- Unique biodiversity;
- Largest lowland population of a mountain species *Narcissus angustifolium*;
- Karst limestone caves with endemic troglobiont species;
- Limestone cliffs with rare calcifilous flora.
UNESCO Biosphere Reserve

- Established **transition area** of the Carpathian Biosphere Reserve (CBR) of UNESCO type with a total area of **about 140 thousand hectares**;
- 20 settlements, with population of 100 thousand people. All surrounding settlements are included in the transition zone.
Economic activity in the context of sustainable development:

About 30% of the Carpathian Biosphere Reserve territory is used to provide resource needs of local territorial communities.

Carpathian Biosphere Reserve provides in average 6,000 m³ of commercial timber and firewood to supply more than 700 households in the area of its activity.

Haymaking and animal grazing still remain among the main types of traditional nature management in the Ukrainian Carpathians. In particular, hay is harvested on the total area of 240 hectares.

Animal grazing within the reserve is done on highland pastures on an area of over 4 thousand hectares. In total, in the protected area are grazed about 400 individuals of cattle and 6,000 sheep.

In CBR is allowed controlled harvesting of wild berries (blueberries, raspberries, blackberries, etc.) and mushrooms for the needs of local population.
6.4 thousand individuals of sheep, goats and several hundred individuals of cattle are grazed annually on the **highland meadows that are part of the CBR** (about 3.6 thousand hectares).

Successful examples of activity is the achievements of the Yasinya Territorial Community, Rakhiv district.

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