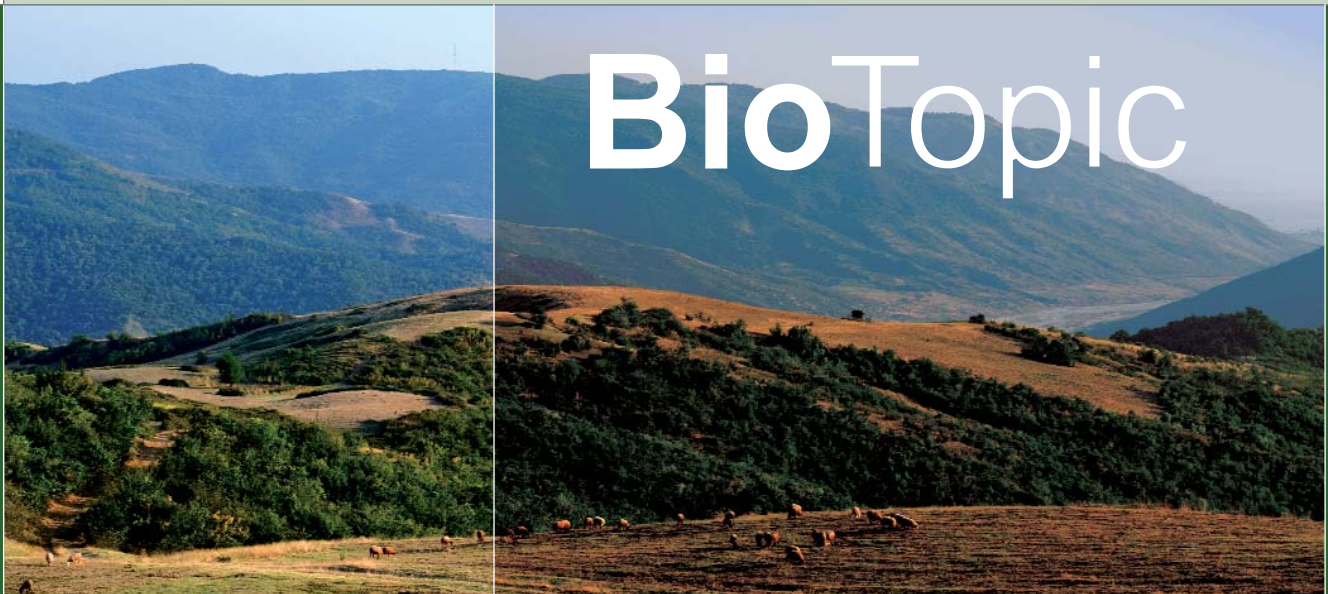


# BioTopic



## Biodiversity – a threatened heritage and asset for the future of Georgia

The rate at which species are currently dying out is alarming: It is estimated, that globally between 50 and 150 species are getting extinct per day. The International Union for Conservation of Nature and Natural Resources (IUCN) has estimated that over 5,500 animal species and 6,700 plant species are currently threatened with extinction.

The Caucasus is one of the global biodiversity hotspots and home to 6,400 plant species of which 25% are restricted to the region. Hundreds of animal species are as well to be found in the Caucasus of which approximately 13% are endemic. However, this richness is under threat: Already 136 animal species and 56 plant species are currently mentioned in the



Red List of Georgia, which includes endangered or even already extinct species.

### Main threats to Biodiversity in Georgia

**Destruction of habitats:** Biodiversity is severely affected by the destruction of habitats e.g. through the large-scale deterioration of forests or planned transformations of forests into agricultural land and grass land. In Georgia big part of mountain forest ecosystems, especially in the upper part of the mountain regions, have been destroyed and are nowadays used for pasture farming. Also huge parts of the arid woodlands of eastern Georgia as well as numer-



ous flood plain forests have been destroyed within the last centuries. **Unsustainable use of biodiversity:** In addition to the destruction of habitats, numerous species are endangered of extinction or became already extinct due to exploitive use, like overfishing, unsustainable hunting practises and poaching activities. In Georgia, populations of various species such as red deer, mountain goat and the brown bear have been severely reduced while others like the goitered gazelle disappeared completely.

**Fragmentation of landscapes:** Through the process of landscape fragmentation by technical infrastructure (roads, railways, channels, etc.), industrial zones and settlements ecosystems are cut into small patches, which leads also to a reduction of the size and the quality of habitats. Especially migratory species that require large and un-fragmented natural landscapes are stressed by the destruction and fragmentation of their habitats. In the course of its future economic development Georgia needs proper regional and land use planning not needlessly losing habitats and biodiversity.



**Intensive agriculture:** The intensification of agriculture is accompanied by farm consolidation and clearance of shrubs and trees as well as an increased application of synthetic fertilizers, herbicides and pesticides. In addition to that, intensive agriculture is causing undesirable changes to the ecosystems and to local biodiversity, as traditionally used agricultural plant varieties and animal breeds are replaced by high productive and fast growing species. In Georgia numerous local breeds (Khevsureti cattle, Caucasian water buffalo, Imeretian sheep, etc.) have been dramatically reduced and some of them became critically endangered or even extinct due to this development. The decline of agrobiodiversity leads in the long run to a non reversible loss of genetic variability and limits options for the future breeding of adapted species.

## Biodiversity for our future

**Food security:** Up to now, 80% of global food supply comes from just 20 kinds of plant. Although many kinds of animal are utilised as food, again most consumption is focused on a few species. This is high risk as the genetic diversity of these few species is also declining and the ability for future adaptation processes to a changing environment (new pests, climate change) will be limited.

Many flowering plants rely on the activities of various animal species (bees, butterflies, birds, etc.) to help them reproduce through the transportation of pollen or the dispersal of seeds. More than one third of food crops depend on this process of natural pollination.

**Raw materials:** A wide range of industrial materials are derived directly from biological resources. These include building materials, fibres, wood, dyes, resins or adhesives. There is enormous potential for further research into sustainably utilising materials from a wider diversity of organisms. Biodiversity also plays an important role in the traditional medicine. In Georgia around 250 plant species are used by the local population to treat diseases. Due to its richness of biodiversity, Georgia has also a big potential to produce modern health care products derived from indigenous plant species.

**Climate and natural disasters:** Plant tissues and organic materi-

als in terrestrial and marine ecosystems act as repositories of carbon, helping to slow down accumulation of atmospheric carbon dioxide, and thus contributing to climate stabilization. Various ecosystems, primarily forests, influences regional and local climate significantly and limit the occurrence of extreme temperatures, storms, floods and related natural disasters. They also contribute to stabilize groundwater regimes, water quality and soil quality.

By signing the UN Convention on Biological Diversity (1994) Georgia committed itself to conserve and sustainably use biological diversity for the benefit of present and future generations. By protecting biological diversity now, Georgia gives its future generations the option to value and benefit from it too. The Ministry of Environment Protection and Natural Resources is preparing to update the current National Biodiversity Strategy and Action Plan of Georgia for 2010.



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