# Valuation of ecosystem services of Snow Leopard habitats in the Inner Tien Shan, Kyrgyzstan

Transfer project in the framework of the Klaus Toepfer Fellowship Programme

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## Executive Summary

Kyrgyz mountain ecosystems can provide a variety of ecosystem services that benefit and add economic value not only for the country, but also outside of it, in the form of fresh water, food, climate regulation, habitat for wildlife and so on.

The snow leopard, living near the snowy peaks, is an indicator of healthy mountain ecosystems, in terms of both climate change and biodiversity conservation. Using the snow leopard as an umbrella of the conservation for the mountain ecosystems and biodiversity and at the same time as an indicator of healthy ecosystems, we can assume that if there is a population of snow leopard with its pristine habitats, we can talk about long-term development of the region with sufficient water availability and conservation of cultural and biological diversity.

The purpose of the research was to provide evidence for the value of the ecosystem services provided by habitats of snow leopards for local land use planners and decision makers at the local level, and for agencies responsible for the conservation of globally significant biodiversity. The results of the study are supposed to strengthen the justification for the integration of the ecosystem services and biodiversity into local land management plans. I hope that the outcomes of this study will contribute to the national discourse of the value of biodiversity and ecosystem services, and trigger full-scale studies in the snow leopards landscapes identified within the Global Snow Leopard and its Ecosystems Protection (GSLEP) programme.

The research was conducted based on the results of field surveys conducted within the framework of an IKI-financed, GIZ-implemented EbA project, other sources and statistics. Five ecosystems were assessed in the pilot area in At-Bashy district in the Inner Tien Shan area of Kyrgyzstan. 18 ecosystem services and goods, which have an economic value and are the sources of the income for the local communities, were identified. The ability of studied ecosystems to produce the services and goods depends on water availability, provided by the precipitation, snow and glacial melting of the At-Bashi glacier. Those areas are close to the snow leopards habitats. The snow leopards habitats play a certain role in the water storage accumulation, providing a kind of buffer.

Carbon sequestration is a type of ecosystem service of national importance, and it can be taken into account in climate commitments of the country. It is estimated that each hectare of forest area in pilot area with the accumulated carbon costs 506 US dollars.

Provisioning services are of great importance for the local population, who rely heavily on natural resources. A significant proportion of revenue people get from livestock. A further increase in the number of cattle can significantly impact the ecological balance and increase the aridization of the territory. In the region it is necessary to revise the development plans based on the ecosystem approach and offer alternative sources of activities that are not detrimental to environment and biodiversity. Recommendations made in the transfer project can be used for the local land use and development planning.

The partners of this research are the Regional Program for Sustainable Land Management for Economic Development in Central Asia and its project Ecosystem-based Adaptation to Climate Change in Mountain Regions of Central Asia (EbA) of the German Society for International Cooperation (GIZ), and the Secretariat of GSLEP.