



Strengthening Ecological Connectivity for Migratory Species through Community-Led Nature-Based Solutions to Climate Change in Kyrgyzstan

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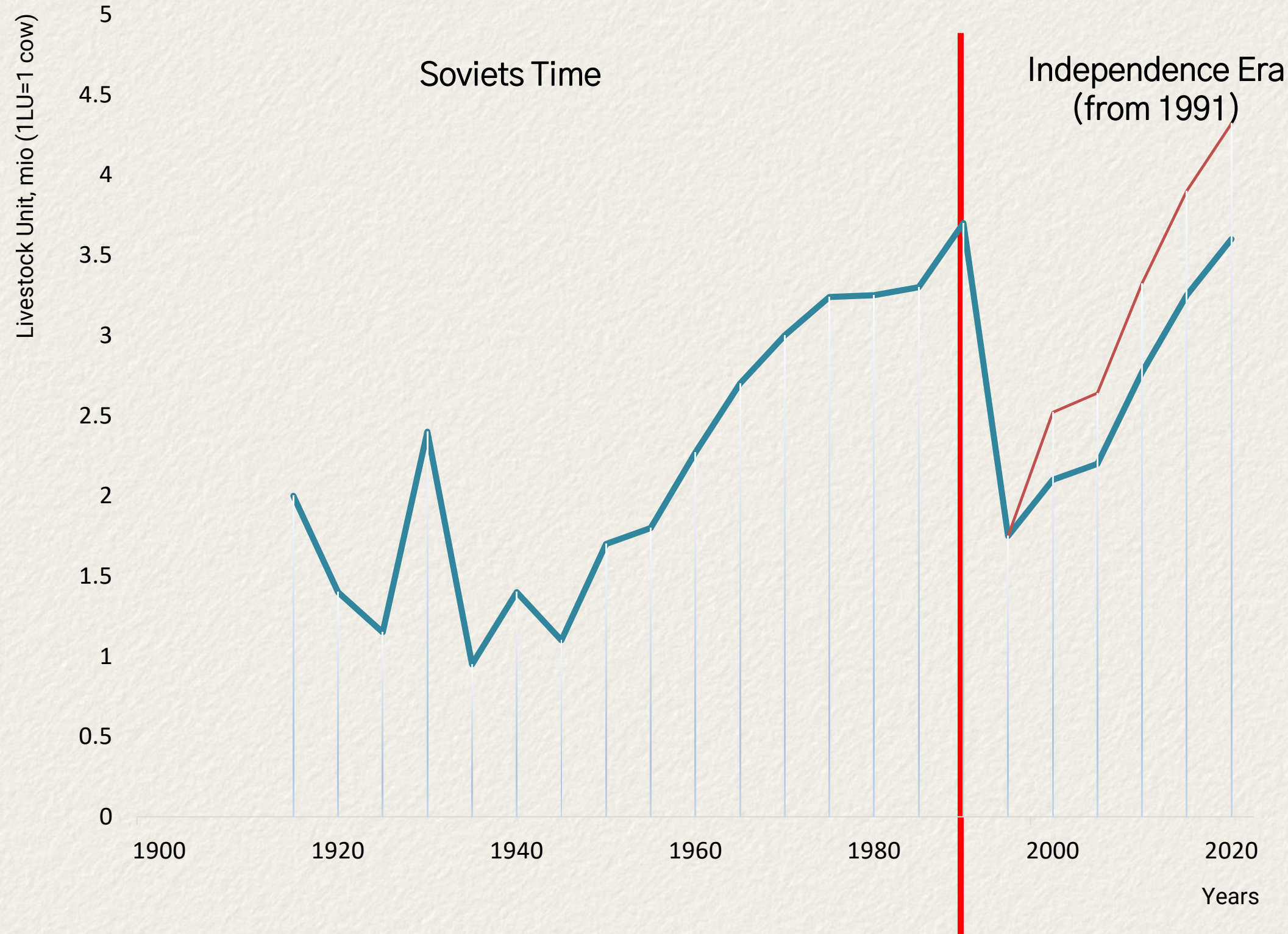
The CAMP Alato Public Foundation develops innovative, effective and simple and accessible technologies to raise rural communities' awareness and involvement in the management and conservation of natural resources



Kyrgyz Republic

- A landlocked country in Central Asia, lying in the Tian Shan and Pamir mountain ranges.
- Country is 93 percent mountainous. More than 40 percent of the country is above 3,000 meters.
- Agriculture accounted for 1/3 of GDP and about half of employment.
- 65 % the country population is engaged in animal husbandry
- Pasture cover more than 9 million ha or 89% of all agricultural land
- The network of Protected areas covers 7.38% of the country's territory.
- Forestry area is around 7,6%

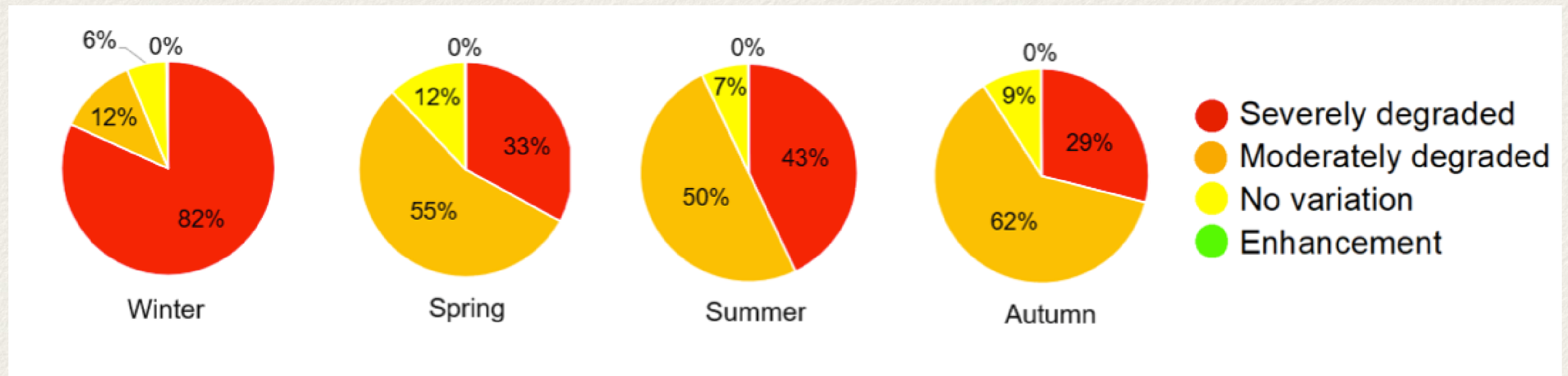
Increasing livestock and its impact on pastures



- By the late 1980s, the number of livestock reached approximately:
 - Sheep: around 10 mio head
 - Cattle: around 1.2 mio head
- Soviet studies indicated that pasture productivity declined by up to 30–40%.

- Livestock numbers have increased by 65% in last 20 years (2000–2020)
- Real number of livestock is at least 20% higher than the official statistics indicate.
- Climate Change impacts pasture productivity and will decline in overall productivity by up to 10% in the next 30–40 years.

Increasing livestock and its impact on pastures



*Source: Technical note Pasture condition maps in Kyrgyzstan, IFAD 2022

MOUNTAINS ARE HUGELY IMPORTANT FOR BIODIVERSITY:



About half of the world's biodiversity hotspots are located in highland or mountain regions. Some of the many reasons for this high biodiversity are: the varied physical terrains that have encouraged a high number of endemic species, low human population densities, and the convergence of several ecosystem boundaries in one place.



Central Asian Mammals and Climate Adaptation

Enhancing the conservation of flagship migratory mammal species of Central Asia through climate-informed management and decision making

Project Objective: Enhance community and migratory species resilience to climate change, ensure the conservation of habitats, and prevent human-wildlife conflicts by promoting alternative livelihoods through Ecosystem-based Adaptation (EbA) solutions.

Supported by:



based on a decision of the German Bundestag

Main Approach



Analyzing the vulnerability of migratory species to climate change

2

Raising awareness of local communities on the importance of biodiversity conservation of CC on biodiversity

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Development and implementation of sustainable land use plans and integrated resource managements plans

6

1

Stakeholder engagement

Identify stakeholder needs, roles and ideas for climate information to plan adaptation efforts

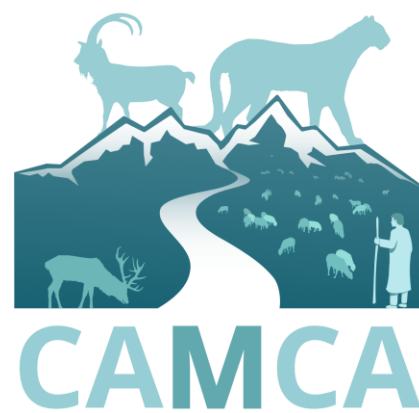
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Environmental awareness and education of the local population for the preservation of biodiversity

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Introduction of EbA measures

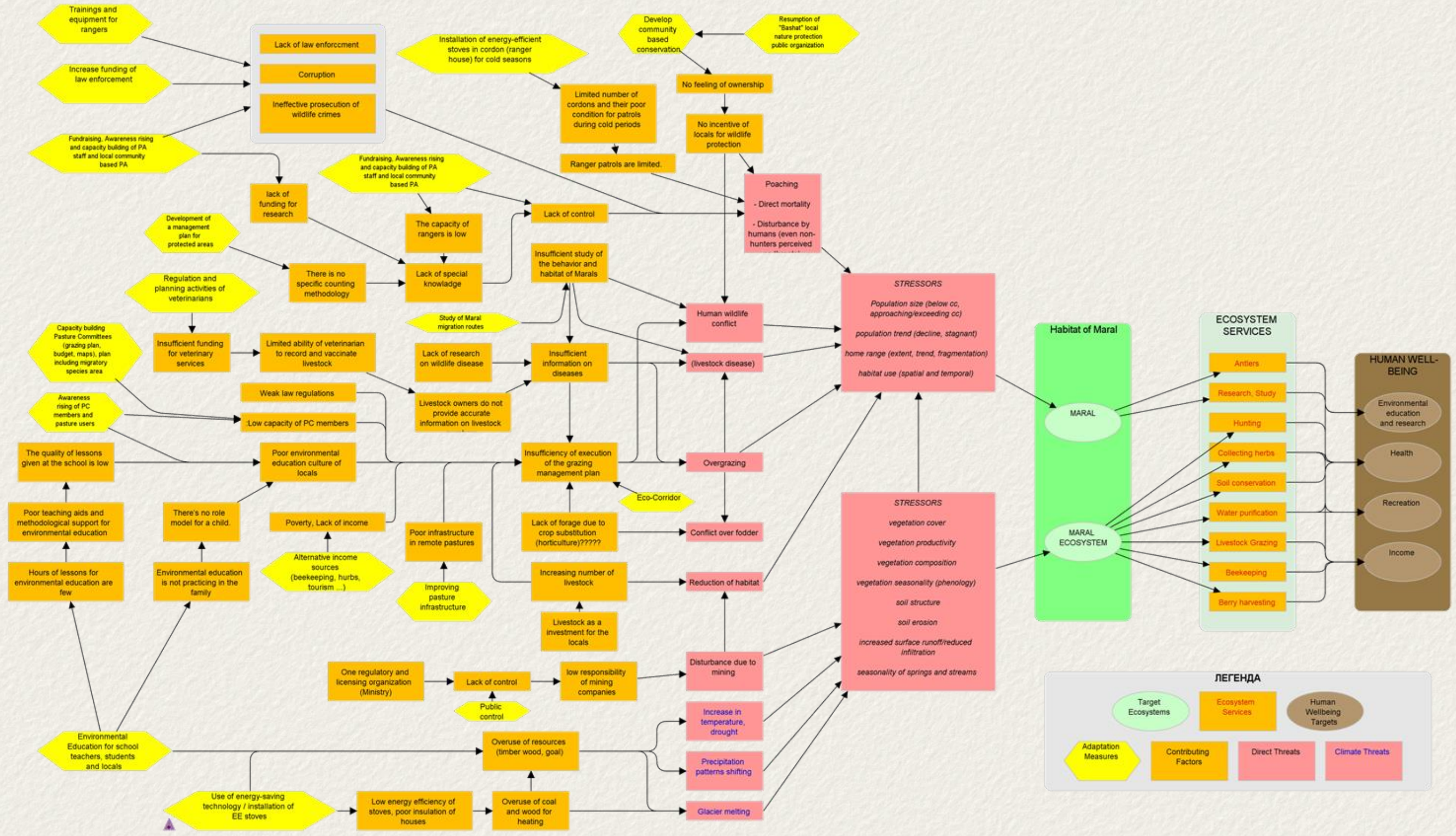
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Analyze the vulnerability of migratory species to climate change



Situational Model on Tian-Shan Maral (CAMCA)





Threats

- Poaching
- Disease transmission from livestock
- Competition with livestock over food
- Reduction in habitat
- Overgrazing
- Overgrazing by livestock
- Competition with livestock over food



Definition of adaptation measures to mitigate both climate and conventional threats

✓ Enhancing management of pastures and protected natural areas

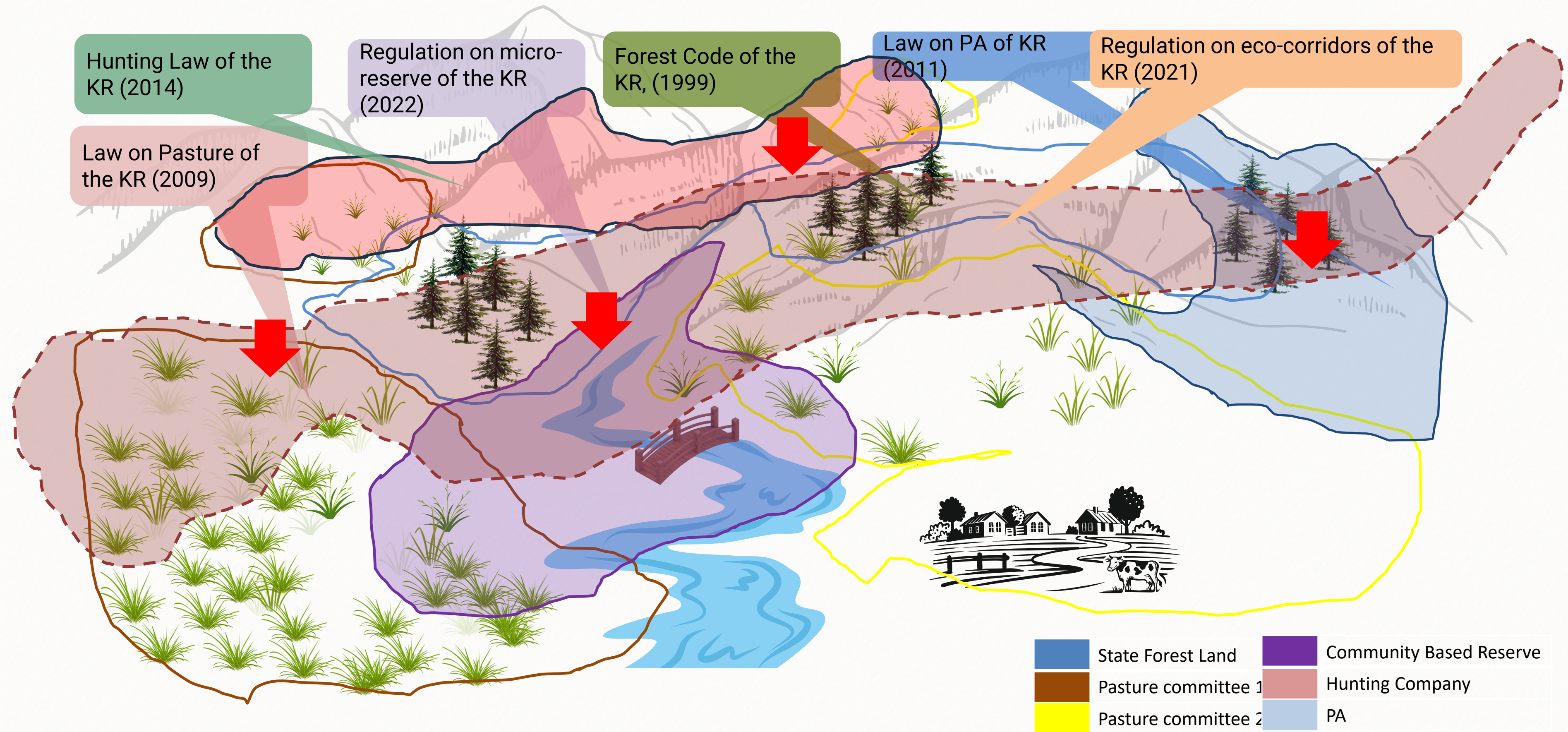
✓ Promoting eco-education

✓ Improving energy efficiency

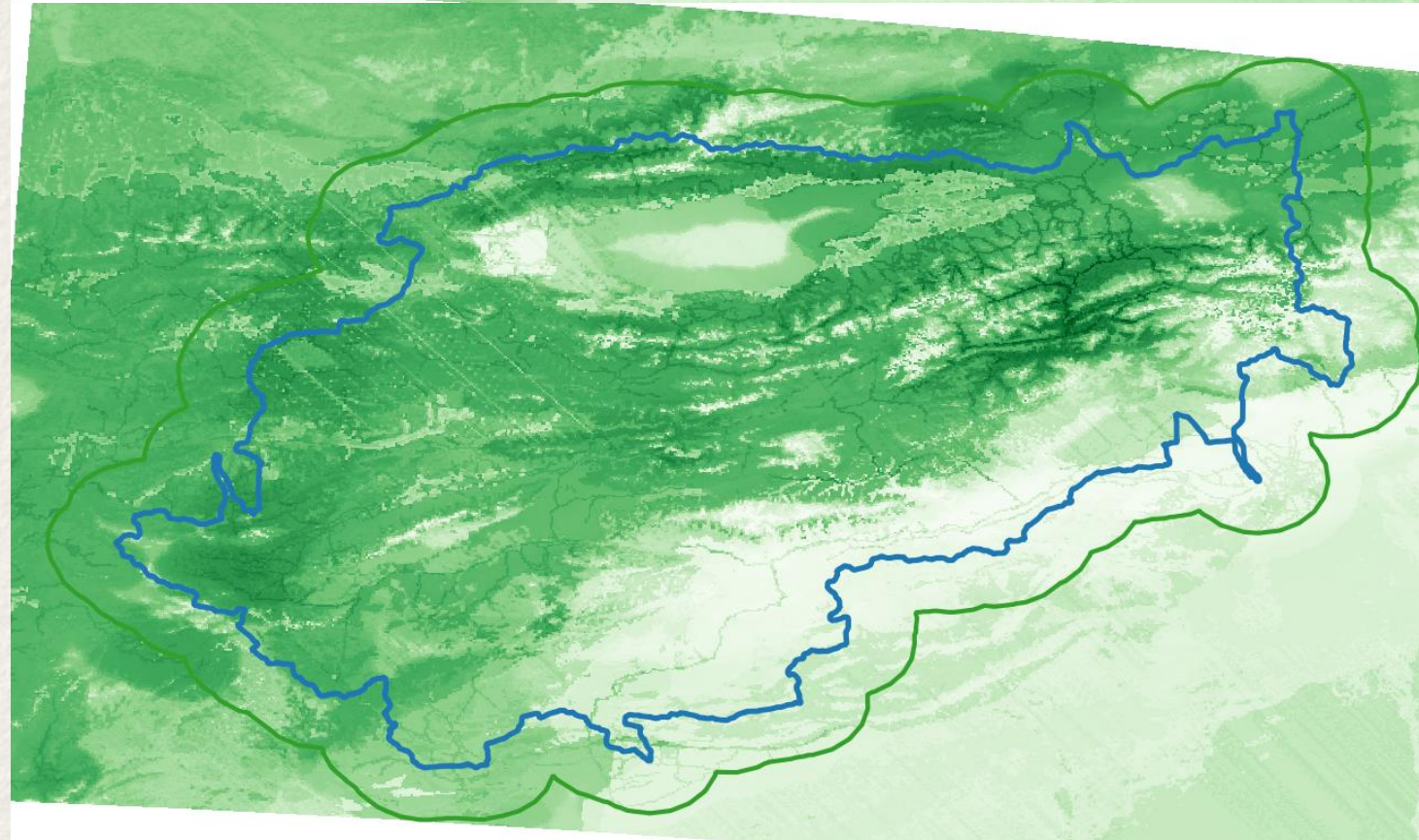
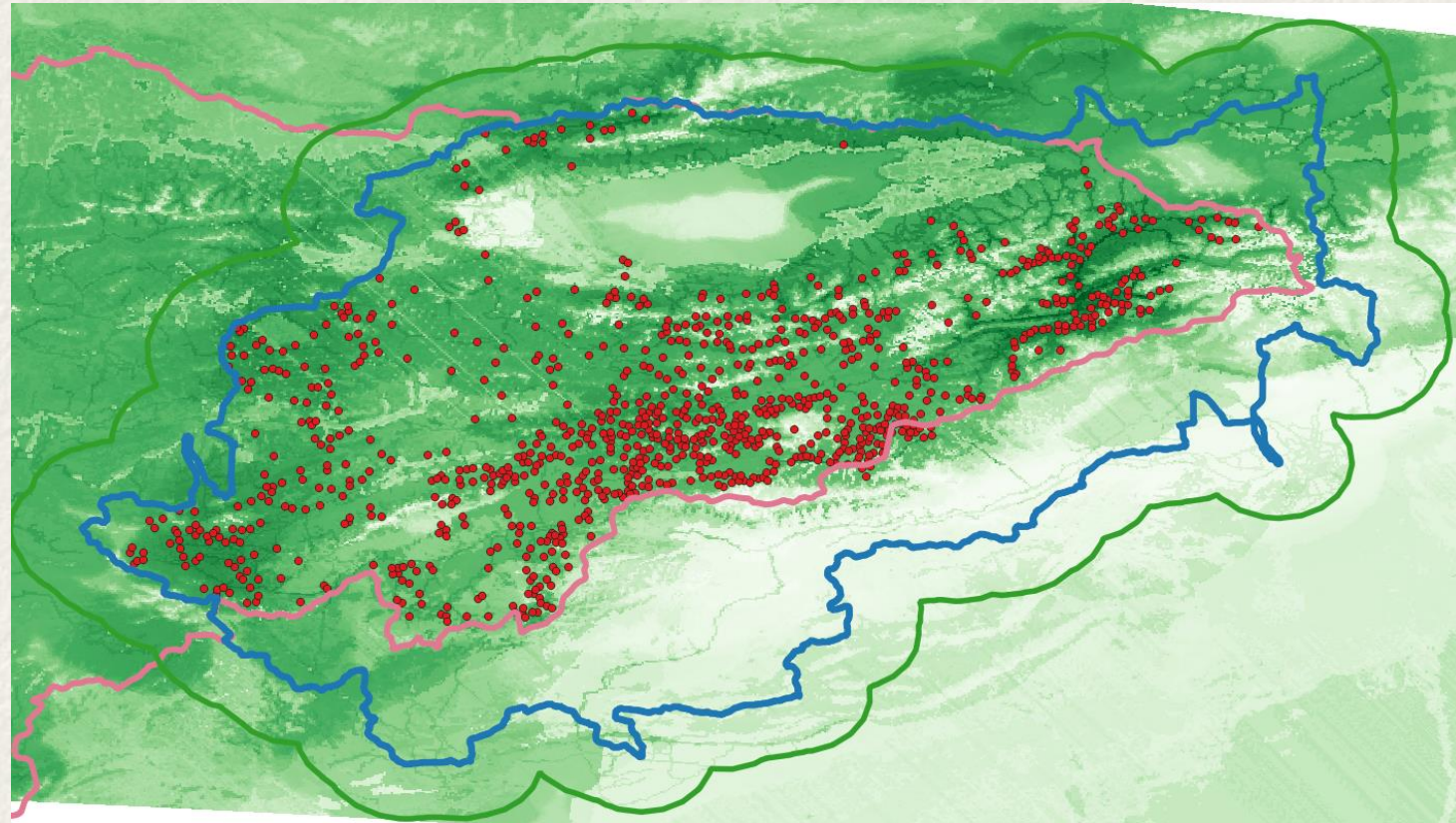
✓ Providing alternative sources of income to reduce dependence from livestock



Enhancing management of pastures and protected natural areas



Habitat suitability models



Predictors importance:

Wetness = 14.1

Precipitation of coldest quarter (Bio19) = 13.0

¹³ Distance roads = 11.3

Precipitation of warmest quarter (Bio18) = 10.7

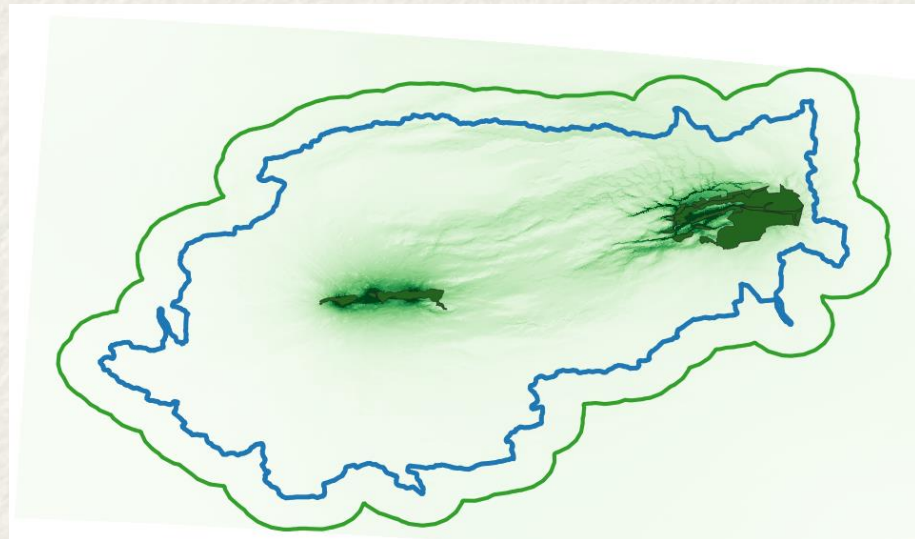
Grassland = 2.9

Distance PA = 8.3

Temperature seasonality (Bio04) = 7.7

Cropland = 5.3

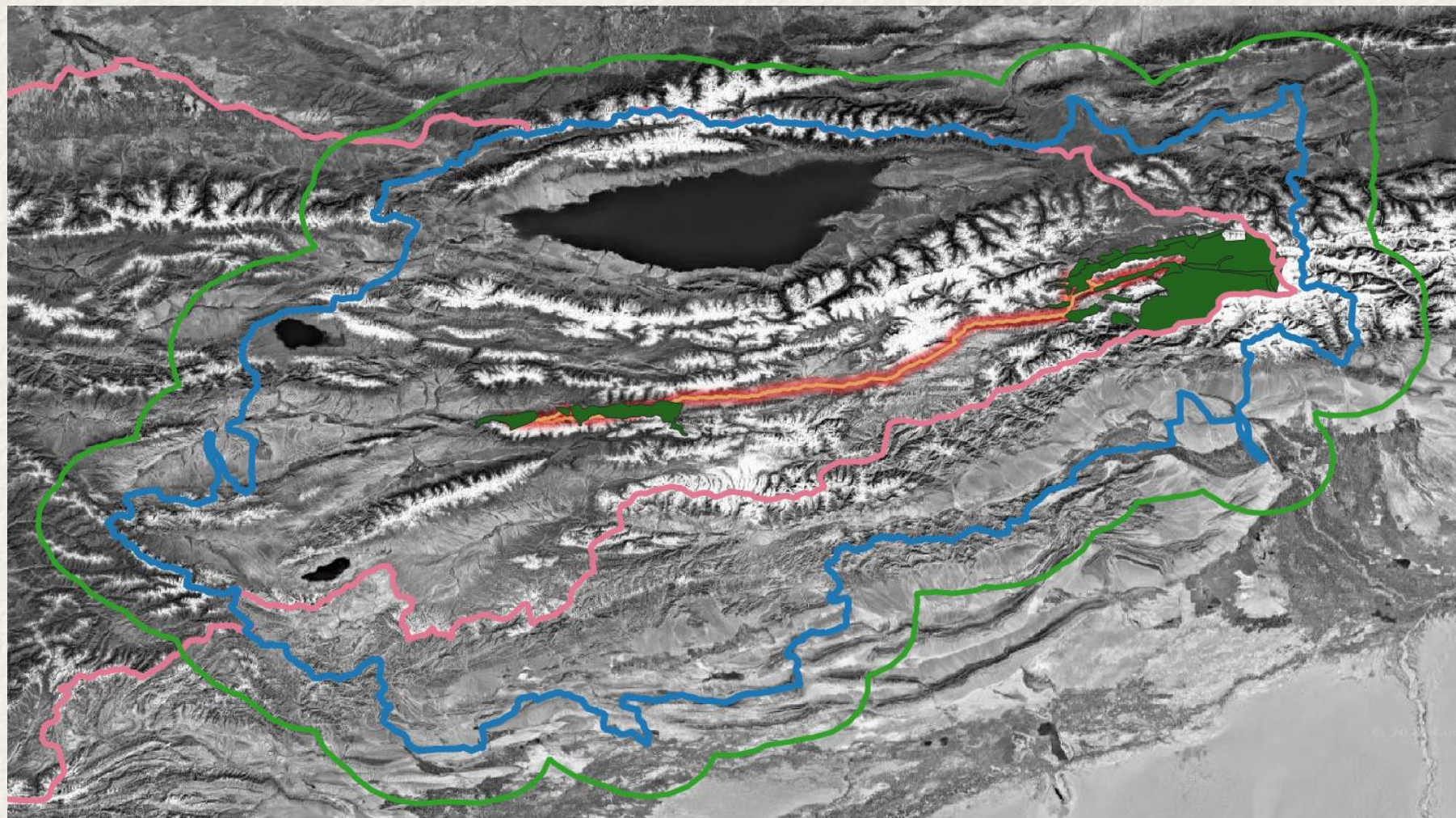
Least-Cost Path (LCP) and Circuit theory approaches



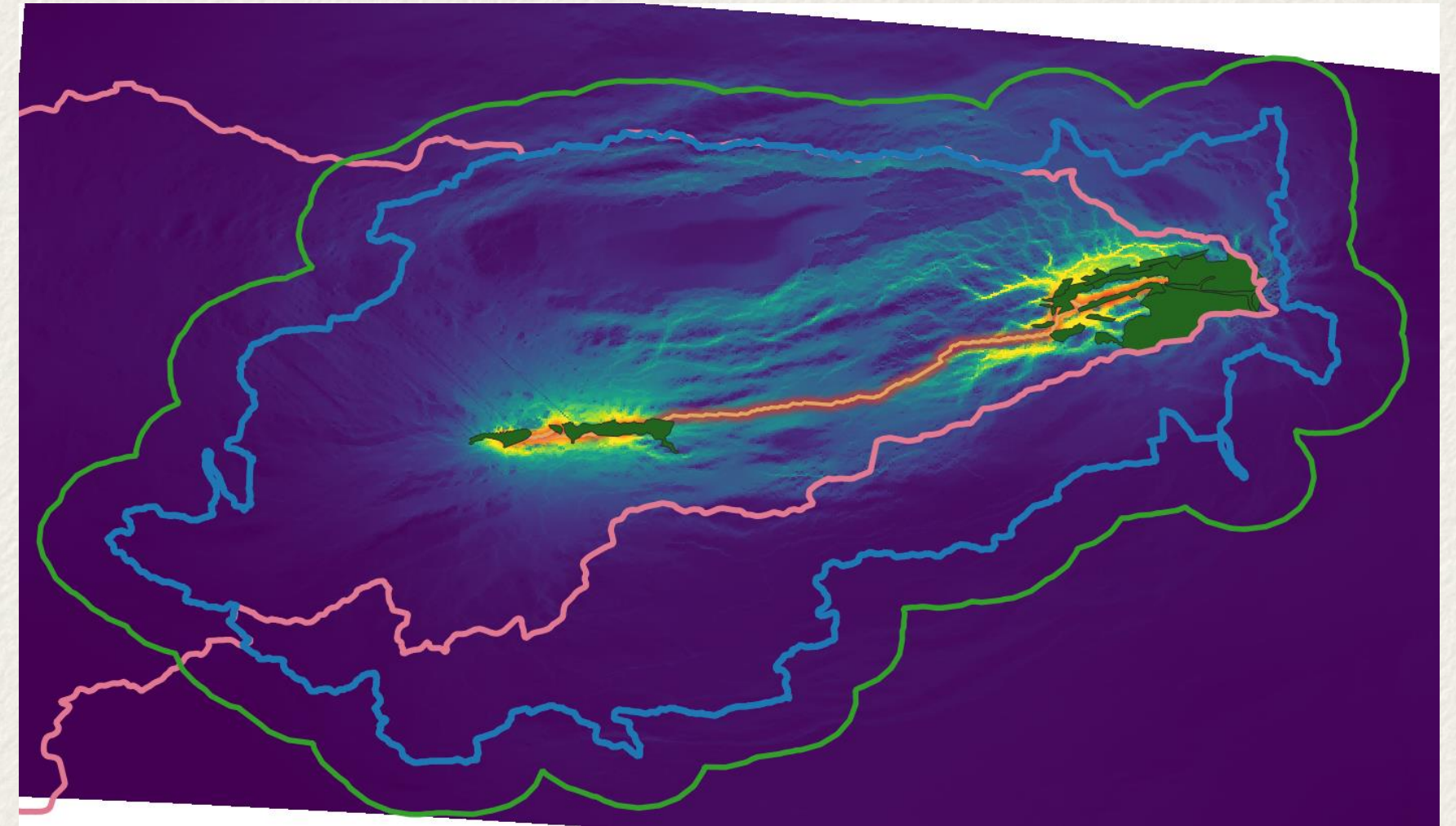
Linkage between Naryn and Kahn Tengiri, without considering Sarychat Eertash

1 LCP analysis per species

1 CircuitScape analysis per species

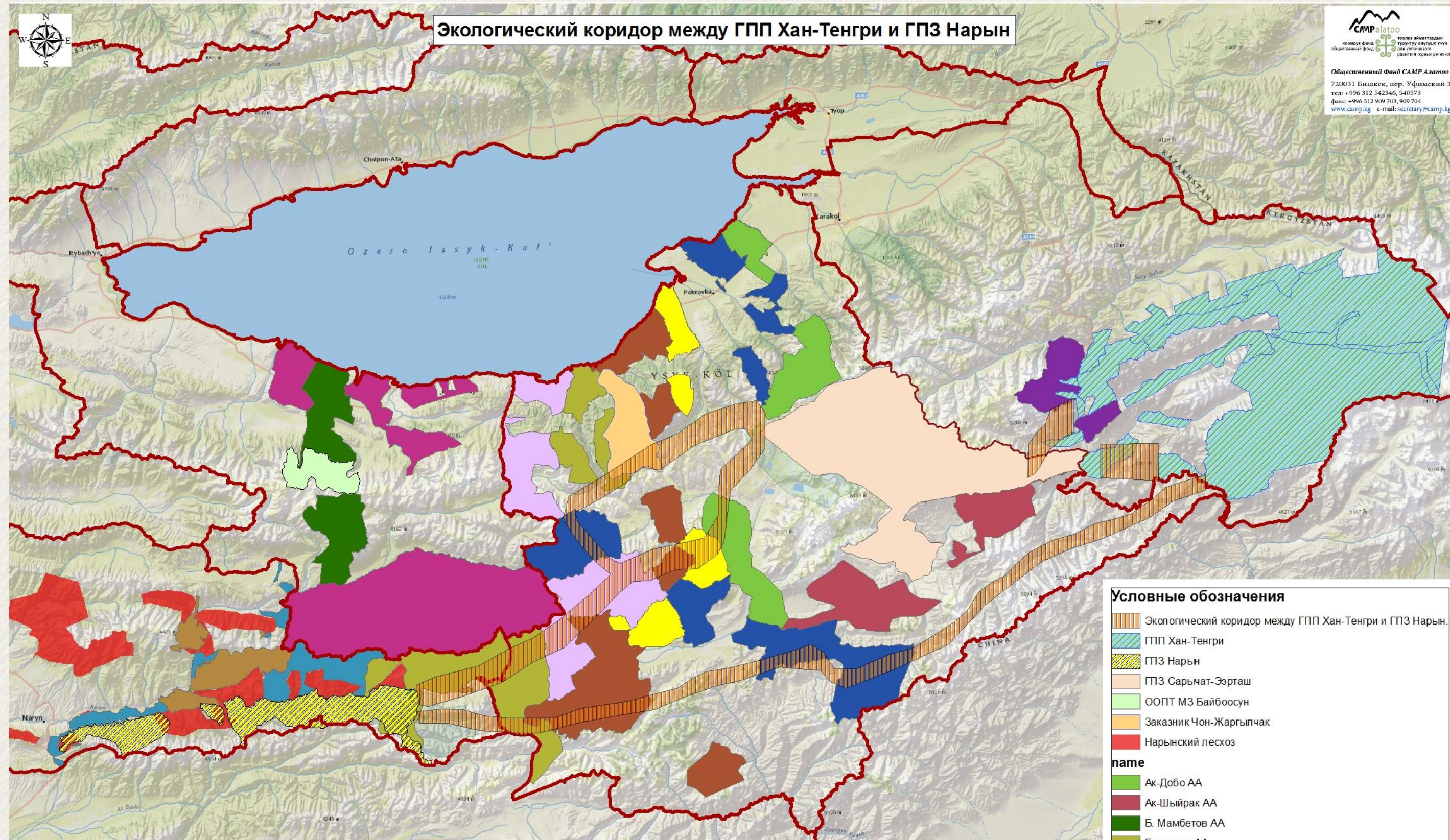


Least-Cost Path (LCP) for Siberian ibex



CircuitScape linkages for Siberian ibex

Guidelines for Developing Climate-Smart, Wildlife-Friendly Pasture Management Plans



Providing alternative sources of income to reduce dependence from livestock



Thank you!

