

Balancing trade-offs between agriculture and biodiversity in the steppes of Kazakhstan (BALTRAK)

Initiative: Zwischen Europa und Orient - Mittelasien/Kaukasus im Fokus der Wissenschaft

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Abandoned grasslands in Kazakhstan constitute considerable untapped agricultural potential, which is likely to be exploited in the near future, yet would also allow for restoring steppe ecosystems. Balancing the potentially conflicting goals of conservation and agricultural production is currently hampered by a poor understanding of (1) the spatial patterns of post-Soviet land-use change, (2) the complex interactions of cropland abandonment, grazing, fire regimes and biodiversity, and (3) various potential future trajectories in land use. The aim of the proposed project is to quantify spatio-temporal trends in land use and fire in Kazakhstan, to understand the links between land use, fire, and biodiversity, and to explore potentials for increasing agricultural production. The results will be used to assess current and future trade-offs between steppe restoration and agricultural production. Together, this will provide guidance for implementing placebased rural development strategies that lessen the emerging land-use conflict between conservation and agriculture in Kazakhstan's steppe region. The interdisciplinary approach will rely on remote sensing, fieldbased biodiversity research, and econometric modelling. Major stakeholders in agriculture and the conservation sector will be integrated to ensure the relevance and implementation of our results. A strong focus will be placed on capacity building among Kazakhstani stakeholders and scientists, and on academic exchange with young Kazakhstani scholars.

Projektbeteiligte

Dr. Johannes Kamp

Universität Münster
Institut für Landschaftsökologie
AG Ökosystemforschung
Münster

Dr. Daniel Müller

Leibniz-Institut für Agrarentwicklung
in Transformationsökonomien (IAMO)
Abt. Betriebs- und Strukturentwicklung
im ländlichen Raum
Halle

Prof. Dr. Tobias Kümmerle

Humboldt-Universität Berlin
Geographisches Institut
Abt. Biogeographie
Berlin

Dr. Sergey Sklyarenko

Association for the Conservation
of Biodiversity of Kazakhstan
Center for Conservation Science
Almaty
Kasachstan

Dr. Aidar Aitkulov

Karaganda State University (KSU)
Faculty of Biology and Geography
Karaganda
Kasachstan