SUSTAINABLE INFRASTRUCTURE: PUTTING PRINCIPLE INTO PRACTICE

GUIDING PRINCIPLE 3: COMPREHENSIVE LIFECYCLE ASSESSMENT OF SUSTAINABILITY

Infrastructure's environmental, social and economic sustainability should be assessed as early as possible in the planning and preparation cycle, covering both financial and non-financial factors across interdependent projects, systems and sectors over their lifecycles. Assessments should consider the cumulative impacts on ecosystems and communities as part of a broader landscape, beyond a project's immediate viciniy, and take account of transnational impacts.

CASE STUDY: LANDSCAPE-SCALE PLANNING TO SUPPORT CONSERVATION, NOMADIC LIVELIHOODS, AND SUSTAINABLE DEVELOPMENT IN MONGOLIA

Name: Bruce McKenney

Location: Mongolia

Organization: The Nature Conservancy

Partners: Government of Mongolia and 105 local partners

Supported by: Government of Mongolia

Grasslands of Mongolia. Photo by Bolatbek Gabiden on Unsplash.

Need for Infrastructure Project/System:

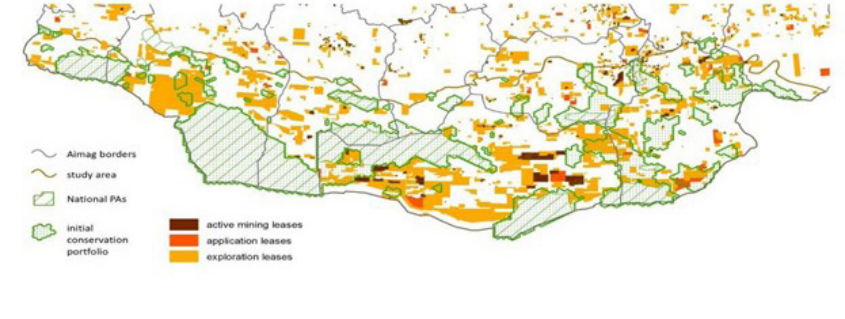
Approximately a third of Mongolia's population is nomadic or semi-nomadic, relying on the country's land and water to herd livestock. During the late-2000s, about 40 percent of Mongolia's land was under lease for mineral exploration and extraction. Mining development and the requisite supporting infrastructure, such as roads and railways, had significant potential to disrupt grazing lands and impact water sources. In addition to providing pastures for livestock and livelihoods, these lands provide habitat for endemic wildlife and support Mongolia's natural and cultural heritage.

Given the scope of the potential mining development, concern had arisen over the possible impacts on ecosystems, endemic species, nomadic herders, and sustainable development within Mongolia. While one mining project may not have a significant impact on a landscape, the cumulative prospect of 40 percent of land developed for mining, connected through extensive linear infrastructure, could profoundly impact the country's lands, waters, and way of life.

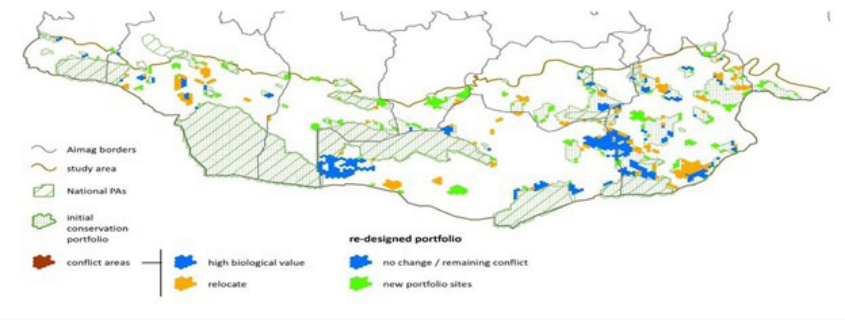
Project Description:

The Nature Conservancy supported the Mongolian government in 2010 to conduct a landscape-scale planning (LSP) initiative. The first landscape-scale mitigation planning took place from 2010 to 2011 and focused on Mongolia's Eastern Steppe region. The Government of Mongolia, with the support of The Nature Conservancy, mapped the region's forecasted development activities as well as priority areas for conservation including biological resources, ecosystem services, and climate change considerations. The Government of Mongolia and The Nature Conservancy then conducted this LSP approach for the remainder of the country from 2011-2016. The resulting blueprint for sustainable development and infrastructure supports the Mongolian government's goal of conserving 30% of the country's land by 2030.

The sustainable development blueprint consists of a series of maps indicating potential areas of development with lower biodiversity impacts, as well as areas with high biological value, where development should be avoided if possible. These maps resulted from an extensive stakeholder input process, involving government officials, mining sector representatives, financial institutions, non-governmental organizations, and nomadic herders.



Map 1: Areas of potential conflict with mineral development in Mongolia



Map 2: Portfolio re-designed to minimize conflict with mineral development in Mongolia

(Note: The highlighted conflict areas in Map 2 have proposed alternative land uses to reduce potential conflict.)

Challenges to Making Infrastructure Sustainable:

Technical and/or Programmatic – Large stakeholder input processes can take time and resources to ensure an inclusive approach, especially in a geographically large country. Compiling best available data, when it requires collecting data from many local sources, can also be challenging.

Governance and/or Political Challenges – Government support across the ministries from the beginning is important for supporting the uptake and use of results. Additionally, strong enabling policies, like the Environmental Impact Assessment (EIA) Law, can play a critical role.

Financial and/or Economic Challenges – The Mongolian economy's high dependence on mining can make it challenging to balance mining development with social and environmental values and nomadic livelihoods. Furthermore, carrying out the LSP requires sufficient human and financial resources.

Outcomes and Lessons Learned:

- LSP is an essential step to achieving sustainable development and conservation goals. It helps decision makers account for and minimize cumulative impacts from infrastructure development.
- The success of LSP depends on an inclusive stakeholder-driven process with government champions and a strong technical approach.
- The initiative highlights the value of comprehensively assessing the sustainability of development plans at an early stage, so that harm to ecosystems and those who rely on them can be mitigated or avoided when a range of options are still available.

For Further Information:

- Herder Communities in Mongolia
- Lands Can do More
- Landscape-Scale Planning To Support Conservation, Nomadic Livelihoods And Sustainable Development In Mongolia
- Sustainable Infrastructure: Comprehensive Lifecycle Assessment of Sustainability (starting at 32:38)
- United Nations Environment Programme. (2021). International Good Practice Principles for Sustainable Infrastructure. Nairobi