Creating Natural Resource Safeguarding Curricula at the National University of Mongolia: Bridging Development and Conservation

Mongolia has made noteworthy efforts to conserve its wilderness and preserve its biodiversity. However, the development of linear infrastructure (LI), such as railroads and highways, often overlooks its impact on wildlife, resulting in negative effects on animals' ability to move freely and safely, which is crucial for their survival. A key contributing factor is the shortage of professionals in fields, such as planning, engineering, and construction, who are knowledgeable about the importance of biodiversity preservation and natural resource safeguards in LI development.

To address this gap, WWF-Mongolia—through the United States Agency for International Development (USAID)-funded Asia's Linear Infrastructure safeGuarding Nature (ALIGN) Project—established a partnership with the National University of Mongolia (NUM) to develop courses and curricula related to natural resource safeguards in LI development.

After introduction of the courses, 600 students participated in them from October 2023 to June 2024. The courses, which are offered to students in bachelor's, master's, and doctorate degree programs, covers 10 different subjects, including Ecology and Sustainability, Biological Resources Mapping, Landscape Ecology, Ecological Methodology, and GIS and Remote Sensing. Topics such as the effects of LI on biodiversity, wildlife-friendly LI, and the implementation of "green" LI has been integrated throughout.

The close collaboration between WWF-Mongolia and the university made this significant milestone possible. The courses offer a new field of knowledge for students from diverse programs to gain insights into natural resource safeguarding in LI development. This initiative also cultivates a pipeline of professionals who are mindful of biodiversity and ecosystem preservation.

"The students are enthusiastic about the courses and its contents," shares Dr. Bayarsaikhan Uudus, Associate Professor at the Department of Biology at NUM. His efforts have been instrumental in making this initiative a reality. He noted that it was challenging to develop and teach various topics without overlapping content for students across bachelor's, master's, and doctorate programs. "I am genuinely excited and hopeful that the introduction of the courses will have long-term benefits for our country's biodiversity preservation," he adds.

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"I am really excited and hopeful that the introduction of the courses will be beneficial in the long term for the biodiversity preservation of our country."

DR. BAYARSAIKHAN UUDUS,
ASSOCIATE PROFESSOR, DEPARTMENT OF BIOLOGY,
NATIONAL UNIVERSITY OF MONGOLIA

The courses emphasize theoretical concepts but also prioritize engaging students in research projects. Enrolled students have conducted a variety of research studies, including on topics such as habitat fragmentation, species movement analysis, species richness, and abundance, with linkages to LI.

Temuulen, a NUM bachelor's degree student majoring in ecology, took the course on natural resource safeguarding in LI development. Before joining the course, his understanding of the impact of LI on wildlife was limited. However, after completing the course, he shares that he has gained comprehensive knowledge on the subject, including on related laws and regulations. "I particularly enjoyed learning about safe wildlife passages and other wildlife-friendly measures that should be considered in the development of linear infrastructure," he explains.

"After taking the course on natural resource safeguarding in linear infrastructure, I deeply understand the issue. Safe passages such as wildlife crossings and other wildlife-friendly measures must be considered in linear infrastructure development."

TEMUULEN B.,
STUDENT,
NATIONAL UNIVERSITY OF MONGOLIA

Following this curricula's remarkable success, ALIGN in Mongolia is working on initiating a partnership with the Mongolian University of Science and Technology to integrate these courses into the engineering program. Integration of natural resource safeguards into engineering courses can help to produce future generations of engineers with an understanding of the importance of natural resource safeguards in infrastructure development.

The pioneering courses introduced at NUM mark an important milestone for Mongolia in bringing the development and conservation fields together. This initial step has the potential to generate significant momentum, helping to establish a workforce dedicated to sustainable infrastructure development and building a future in which humans live in harmony with nature.
■ *To learn more about the ALIGN Project, visit alignproject.org.*

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