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ON LAND



Progress Report on SDG 15

Rajshahi University of Engineering & Technology (RUET)

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Life on Land Initiatives at Rajshahi University of Engineering & Technology (RUET)

The mandate of Sustainable Development Goal 15, **Life on Land**, revolves around “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.” As an engineering and technology institution, RUET focuses its resources on developing technical solutions for land degradation, promoting sustainable urban planning, and minimising its ecological footprint through campus greening and waste valorization.

- **Academic Integration and Specialized Planning:** The Department of **Urban and Regional Planning (URP)** and **Civil Engineering (CE)** serve as core institutions for advancing knowledge related to SDG 15. The curriculum includes specialized modules on **Environmental Impact Assessment (EIA)**, **Sustainable Land Use Planning**, **Geotechnical Stability**, and the economic valuation of **Ecosystem Services**, ensuring future engineers and planners understand and prioritize terrestrial ecosystem health in development projects.
- **Combating Land Degradation and Erosion:** RUET’s research is directly targeted at preserving the physical integrity of the land, which is prone to erosion due to riverine activity. Projects led by the Civil Engineering department focus on **slope protection techniques**, **geotechnical risk mitigation in infrastructure**, and the development of **sustainable construction materials** that reduce the demand for sand and soil extraction, thereby minimizing land degradation in the Rajshahi region.
- **Biodiversity Protection and On-Campus Greening:** RUET actively promotes biodiversity within its campus grounds. The university has initiated regular **tree planting drives** and maintains dedicated green belts, which also serve as living laboratories for students. The URP department conducts studies on the **optimization and function of urban green spaces** in Rajshahi City, providing data for municipal authorities on how to enhance terrestrial biodiversity and resilience in densely built environments.
- **Sustainable Resource Management and Waste Valorization:** The university connects the circular economy principles of its waste management to land health. Research in Mechanical and Chemical Engineering explores innovative methods for **valorizing agricultural and organic waste** (e.g., composting food waste, producing **biochar** from biomass). These by-products are then used as **natural soil amendments** to restore soil quality, enhance organic carbon content, and improve the fertility of local land, effectively reversing degradation.
- **Community Engagement and Policy Advocacy:** RUET faculty and students engage in community outreach concerning the long-term health of terrestrial ecosystems. The URP

department frequently collaborates with local government agencies on **regional development plans** that emphasize **sustainable land use, zoning for ecological protection**, and mitigating the impact of urbanization on agricultural and forest lands in the surrounding areas.

- **Interdisciplinary Research on Ecosystem Resilience:** RUET encourages projects that bridge engineering with environmental science. This includes studies in the Institute of Energy and Environmental Studies (IEES) on the **impact of climate change on land productivity** and **agro-forestry systems** in the region, providing data-driven recommendations for adaptation strategies to ensure the sustainable use of land resources under increasing environmental stress.