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UoM Team Leads Major Drought Resilience Effort in Northern Great Plains

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An innovative project to combat drought in the US Northern Great Plains, led by a team from the University of Montana's Climate Office, is set to become a national model for climate resilience. The Montana Climate Office, a part of the university's W.A. Franke College of Forestry and Conservation, has received a grant from the National Science Foundation's Regional Resilience Innovation Incubators (R2I2) programme to lead the Northern Great Plains Regional Incubator for Drought Resilience (NGP-RIDR).

The project will focus on strengthening drought resilience across Montana, Wyoming, North Dakota, South Dakota, and Nebraska.

Collaborative Approach to a Growing Threat

The NGP-RIDR project aims to tackle the increasing threat of climate-related disasters, such as droughts, floods, and wildfires, which endanger the region's agriculture, rural economies, and recreation. The initiative will develop a comprehensive plan to use satellite data, ground sensors, and artificial intelligence to monitor and forecast water availability and drought conditions.

The project's success hinges on a broad collaboration that brings together a diverse group of stakeholders, including tribal nations, government agencies, farmers, researchers, and businesses.

"This award is a testament to the power of regional collaboration," said Kelsey Jencso, the grant's principal investigator and director of the Montana Climate Office. **"This effort not only will improve how we**

monitor and respond to drought but also will ensure that tribal and rural communities are central to shaping resilient futures."

Technology and Education at the Forefront

NGP-RIDR was chosen for the R2I2 programme due to its potential to integrate advanced water monitoring infrastructure with cutting-edge machine-learning models to improve drought assessment and preparedness. The project will leverage existing systems like the Upper Missouri River Basin plains snowpack and soil moisture monitoring network.

Education and workforce development are also a core part of the initiative, with partnerships being established with Tribal Colleges and agricultural communities. These partnerships will ensure that local communities are active participants in drought planning and response efforts.

By improving disaster aid delivery, supporting sustainable agriculture, and fostering new business opportunities, the project's ultimate goal is to **"protect the livelihoods, heritage and environment of the Northern Great Plains."** Key partners in the effort include the NOAA National Integrated Drought Information System, the U.S. Army Corps of Engineers, and the First American Land Grant Consortium of tribal colleges and universities.