On February 14th, 2024, the government of Mongolia declared an elevated state of readiness until May 15th due to a severe dzud. These intense, prolonged periods of cold are characterized by heavy snowfall preceded by summer drought. This past February, 90% of the country was covered in snow and ice, disrupting access to social services, depriving animals of suitable grazing grounds, leading to a loss of 9% of livestock across the country.

The GEOS-S2S-2 model, initialized on Feb. 10, (left panel) accurately predicted temperatures well-below average for Mongolia starting the week of Feb. 18. Temperatures reached as low as -30 ºC, verified by MERRA-2 (right panel).