Title of the Challenge

Future ByteStock:
Leveraging Digital Technologies for Sustainable Livestock

What is the main issue the challenge addresses?

The challenge is to improve the resilience of the livestock sector to climate change using underutilized and emerging digital technologies which can help improve farming decision making. We want to find technologies that help manage grazing livestock, understanding how they influence their natural environment and the effects of climate change on animal welfare, and productivity.

Call to Action

Livestock is critical for food security, nutrient cycling, and income. Especially in low income countries, livestock ownership helps building resilience by diversifying income in the face of climate risks. Uncertainty associated with climate change affects decision-making, and management or investment decisions are poorly informed. Poor grazing can affect the storage of carbon in the soil, and grazing conditions could increase the likelihood of animals being exposed to heat stress. Stressed animals produce little milk or meat and emit more GHG. Monitoring and obtaining real-time information on all these dynamics is concurrently a key challenge for the livestock sector.

What is the desired impact of the challenge?

Given the potential to improve the sustainability of livestock under climate change and of improving farmers' incomes, digital technologies for smart grazing have to be accessible and affordable. Modelling, remote sensing and sensors can provide critical data that guide investments on livestock farms to protect animals and farm income from frequent or severe drought, and potentially decreasing GHG emissions, to achieve triple wins.

Related SDGs

Who is behind this challenge?

The Chair of Livestock Systems at the Technical University of Munich (TUM) is led by Professor Mariana Rufino. It focuses on researching and developing sustainable livestock-based systems while addressing complex challenges related to global food production, environmental impacts, and conservation efforts.