



Feed the Future Country Fact Sheet

Online Version: <https://www.feedthefuture.gov/article/feed-future-leverages-research-and-technology-help-livestock-systems-adapt-climate-change>

Feed the Future Leverages Research and Technology to Help Livestock Systems Adapt to Climate Change



Peter Shapland

A pastoralist and his herd in Senegal.

For smallholder farmers and pastoralists (the migratory farmers and herders who raise livestock for income), changes in climate can have serious consequences for their livelihoods.

Climate change leads to dramatic changes in rainfall and temperature, affects how disease travels, and impacts scarce water and food resources that animals need to be healthy so they can be sold in markets.

Changes in climate across Africa and Southeast Asia are forcing pastoralists in those regions to find ways to adapt and survive under challenging conditions. Recognizing the critical role that livestock plays in the food security and economies of developing countries, Feed the Future is helping pastoralists adapt to climate change while building the capacity of partner institutions in these countries to support local pastoral communities.

The [Feed the Future Innovation Lab for Collaborative Research on Adapting Livestock Systems to Climate Change](#) is led by Colorado State University in collaboration with 18 other U.S. universities and a broad array of organizations in Africa and Asia. This global network of researchers and non-governmental organizations is tracking the impact of changing climatic conditions on pastoralists as well as smallholder farmers, and aims to equip them with the tools and resources to address climate-related challenges.

In Nepal, for example, shifts in the monsoon season and more frequent severe weather events are directly affecting the livelihoods of small-scale livestock holders. To help them better prepare for hazards such as floods and landslides, as well as manage water resources, researchers at the Innovation Lab are using state-of-the-art satellite technology to project rainfall forecasts for the coming months and even years. This information helps farmers decide which animal feed crops to plant, and when, mitigating the risk that a severe weather event will wipe out their animals' source of food.

Similar forecasting efforts in West Africa are helping the Innovation Lab predict how climate change will affect the regional ecology, including the food and water resources used by pastoralists.

Using data from these models, the Lab partners with local NGOs to help livestock holders adapt their land use and seasonal migratory routes according to predicted climate trends. And in East Africa, where market export opportunities for pastoralists are increasing, the Lab is mapping out the location and use of water wells, the location of livestock markets, and the

movement of cattle to and from markets so that pastoralists and local traders can use this information to better manage their herds and adapt to climate variability.

As water resources become scarcer and migratory routes shift in response to climate change, zoonotic diseases (i.e. diseases that can be transmitted between people, livestock and wildlife) also adapt and can become more prevalent as rising temperatures, growing human populations and increased movement of people and animals expand the geographic areas that are exposed to disease vectors.

Across regions, the Innovation Lab is examining the impact of climate change on African and Asian human health sectors, and identifying solutions with community input.

In Tanzania and Nepal, for example, researchers work within the school systems, teaching hundreds of children best practices that can be applied at home to prevent poultry disease. A [recent workshop](#) in Tanzania co-sponsored by the Peace Corps taught participants about the importance of poultry in fighting malnutrition and poverty, and how to sustainably care for, feed, shelter and manage chickens.

These combined efforts not only help small-scale livestock holders maintain healthy animals and earn an income under challenging environmental conditions, but also help local research and NGO partners build their understanding of livestock systems and their experience with technologies that can help livestock producers adapt to climate change. In the long term, increasing the capacity of these organizations will enable Feed the Future's partner countries to better address the impacts of climate change on their own and increase the resilience of their populations.

[Learn more](#) about Feed the Future's work to help small-scale livestock holders adapt to climate change or [find additional resources](#) on climate modeling.