

Cultivating Climate Resilience on U.S. Farms and Ranches with Ecosystem-Based Adaptation, Society for Environmental Journalists Annual Conference, 2015

Ecosystem-based adaptation refers to strategies that focus on conserving, restoring and using the climate protection services of ecosystems to reduce climate change vulnerability of natural and human-dominated communities. For example, healthy agricultural soils sequester carbon, reduce the need for irrigation, fertilizers and pesticides, and help to reduce flooding. Diversified farming systems produce a wealth of ecosystem services that enhance climate resilience on the farm and the surrounding community.

You can learn more about ecosystem-based adaptation from government, agricultural industry and educational leaders working to encourage the use of ecosystem-based climate risk management tools in the U.S. at the **Ecosystem-Based Strategies for Climate Change Adaptation on U.S. Farms and Ranches** panel discussion on **Saturday morning at 9 am, in Boomer A.**

Jerry Hatfield, USDA Agricultural Research Service, Director of the National Lab of Agriculture and the Environment and Regional Leader of the Midwest USDA Climate Hub, Ames IA

Ernie Shea, President, Solutions from the Land, Lutherville, MD

Kim Barker, Rancher and Holistic Management Practitioner and Educator, Waynoka OK

Moderator: Laura Lengnick, Lead Scientist, Cultivating Resilience, LLC; Soil Scientist and Author of *Resilient Agriculture: Cultivating Food Systems for a Changing Climate* (New Society Publishers 2015)

Ecosystem-based Adaptation

Ecosystem-based adaptation, a flexible, cost effective and broadly applicable strategy for climate change adaptation, can fulfill objectives for both mitigation and adaptation to climate change while cultivating climate resilience. Ecosystem management approaches are increasingly recommended in climate change adaptation efforts, for example in achieving global food security, enhancing the climate protection services of natural landscapes, and fully utilizing the capacity of agriculture to provide multiple ecological, social and economic benefits to society. The benefits of ecosystem-based adaptation are widely recognized by the international development community, but have received less attention in the United States where engineered strategies - such as adding more field irrigation or drainage, building flood walls, genetically-engineering drought resistance and building higher flood walls - have dominated adaptation research and development efforts.

Background and Resources

[Lengnick, Laura. 2015. *Resilient Agriculture: Cultivating Food Systems for a Changing Climate*. New Society Publishers. Available in the SEJ Conference Bookstore](#)

[Liebman, M and Schulte, L. 2015. *Enhancing agroecosystem performance and resilience through increased diversification of landscapes and cropping systems*. Elementa: Science of the Anthropocene](#)

[Creating City Regions that Work as Landscapes for People, Food and Nature. 2014. Issue Brief. EcoAgriculture Partners](#)

[Munang, R., I. Thiaw, K. Alverson, M. Mumba, J. Lui, M. Rivington. 2013. Climate Change and Ecosystem-based Adaptation: A New Pragmatic Approach to Buffering Climate Change Impacts. Current Opinion in Environmental Sustainability. Vol 5:1-5](#)

[Convenient solutions to an inconvenient truth: ecosystem-based approaches to climate change. 2009. International Bank for Reconstruction and Development/The World Bank](#)

Federal Resources

[USDA Climate Hubs](#)

[Climate Change and Agriculture in the United States: Effects and Adaptation](#)

[Agriculture, The 3rd National Climate Assessment, U.S. Global Change Research Program](#)

GEM Model

[Realizing the potential of G x E x M to meet global food demands](#)

Solutions from the Land and 25 X '25

[Pathways Report](#)

[Op-Ed, Ernie Shea, Journal of Soil and Water Conservation](#)

[Agriculture and Forestry in a Changing Climate: Adaptation Recommendations](#)

[North American Climate Smart Agriculture Alliance](#)

Holistic Management: A Framework for Ecosystem-based Agricultural Adaptation

[About Holistic Management](#), Holistic Management International

[Case Studies: Fuller Farms, Emporia KS](#)

[Case Studies: Brown's Ranch, Bismarck ND](#)

Clips

[Agriculture and Forestry in a Reduced Carbon Economy](#), 25 x '25

[Cultivating Resilience](#), Climate Listening Project

[Creating Healthy Soils with Holistic Management](#), Holistic Management International