

Archaeologists lend long-term perspective to food security and climate shock

February 16 2014, by Margaret Nelson

What role does pre-existing vulnerabilities play for people who experience a climate shock? Does it amplify the effects of the climate shock or is effect negligible? Four Arizona State University archaeologists are looking into this as part of an international team examining how people can be most resilient to climate change when it comes to food security.

The group questioned whether vulnerability to food shortages prior to a climate shock – not the actual experience of the [food shortage](#) – is related to the scale of impact of that shock. They found a strong relationship.

The team used long-term archaeological and historical data from the North Atlantic Islands and the U.S. Southwest to form the basis of their understanding of changing dynamics in these areas. Each case in their study included information on evolving social, political and economic conditions over centuries, as well as [climate data](#).

The extended timeframe and global scope allowed them to witness changes in the context of vulnerabilities and climate challenges on a wide scale.

"The pattern is so consistent across different regions of the world experiencing substantially different climate shocks, that the role of vulnerability cannot be ignored," said Margaret Nelson, an ASU President's Professor in the School of Human Evolution and Social

Change.

Nelson made her comments today (Feb. 16) at the annual meeting of the American Association for the Advancement of Science in Chicago.

The other ASU archaeologists involved in the study are professors Keith Kintigh, Michelle Hegmon and Kate Spielmann, all of the School of Human Evolution and Social Change in the College of Liberal Arts and Sciences.

Their findings support the argument for focusing on reducing vulnerabilities to climate shocks to boost resilience, which will ultimately lead to fewer required recovery efforts when crises occur. Nelson said that most often disaster management does not address vulnerabilities prior to shocks but instead focuses on returning a system to its previous condition following a disaster.

"Exposures to [climate](#) challenges and other environmental risks are not the sole causes of disasters," she says. "People have unintentionally built vulnerabilities through decisions and actions in social, political and economic realms."

Provided by Arizona State University

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