Towards a Sustainable Future

Societies across the globe are grappling with how to meet the increasing demands on our planet's resources while considering the needs of future generations. Scientific knowledge is vital to improving our ability to respond rapidly to extreme events, such as power grid disruption, floods, and dangerous weather.

In order to address issues of sustainability, the National Science Foundation (NSF) promotes research, workforce development, networking, and education across a broad range of disciplines, spanning physical and natural sciences, engineering, mathematics, human behavior, and the social and economic sciences. In addition, enhanced collaboration among federal agencies, international organizations, academic institutions, and industry is required to respond to the scale and complexity of sustainability issues.

Science, Engineering, and Education for Sustainability (SEES) continues to be a priority investment for NSF in fiscal year 2013. The SEES portfolio includes investments initiated in fiscal year 2010 and builds on those programs to add an emphasis on resilience. The **Sustainable Energy Pathways** program is joined by a new research endeavor focusing on energy efficiencies that can be garnered from information and computational sciences and engineering.

Another new investment in fiscal year 2013 is the **Sustainable Chemistry, Engineering, and Materials** program that aims to create a more sustainable chemical and manufacturing sector. Improved understanding of the properties and lifecycles of critical materials such as scarce resources and toxic byproducts is needed to achieve this goal.

The **Coastal and Arctic SEES** programs will support interdisciplinary research on the dynamic interactions among human behavior, physical forces, and ecological processes in these vulnerable regions. Fundamental research will provide insight into resilience factors to facilitate our ability to maintain sustainable coastal and Arctic systems.

Expanding the focus of the SEES portfolio to address hazards, natural disasters, and societal resilience, NSF is launching the **Creating a More Disaster Resilient America** program. Results from this research will enable us to better predict, prepare for, recover from, and mitigate the effects of high-impact natural and technological events.

SEES research will also continue to focus on the critical areas of water sustainability, climate patterns, ocean acidification, biodiversity, human and natural systems interactions, and the changing Arctic system.

Credits: UCAR (top left and top right); Cam McNaughton, Univ. of Hawaii (center); public domain (bottom)