



ACTIONABLE SCIENCE AND CESM

CESM WORKSHOP CROSS WORKING GROUP

NCAR
UCAR

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COP26: EMPHASIZING ACTIONABILITY

“We must adapt to climate consequences.”

“Our economies and societies as a whole need to become more resilient to climate impacts.”

To adapt, to develop resilience, to develop effective and ethical interventions, to evaluate vulnerabilities, to determine appropriate global, regional, and local mitigation strategies, **we need to create useful and usable knowledge.**

Creating and sharing this type of knowledge requires **linking researchers, boundary managers, decision makers, practitioners, and communities.**

WHAT MAKES KNOWLEDGE ACTIONABLE?

Use of knowledge in decision-making—the ability for science to effectively inform decisions (Beier et al. 2016, Arnott et al. 2020).

Actionable knowledge products must be useful and usable.

Useful—meets certain adequacy criteria (quality of knowledge content).

Usable—fit for use within a particular context (quality of consistency).

WHAT MAKES KNOWLEDGE ACTIONABLE?

Actionable products are created through **processes** that involve communication, mediation, and translation and equity (Cash et al. 2003).

Nature of process can impact the **usefulness** and **usability**.

Needs, priorities and values of users should be **reflected** in the knowledge product.

Co-production exemplary of a process that can meet these requirements.

MOVING CESM TOWARD ACTIONABLE SCIENCE

How can we **connect** with users—whether they be other practitioners, researchers, planners, managers, or local communities?

What might these connections look like? How do we address the **current gap** between producers and users of climate model information?

How do our **practices need to change** to meet the requirements of actionable science?

MOVING CESM TOWARD ACTIONABLE SCIENCE

We can start small, and build out...

Are there any gaps that are becoming visible as the modeling community moves toward increasing engagement with user partners?

Any partnerships or opportunities we can leverage to gain insight?

Are there “superusers” that represent interests we can probe?

Are there examples of practices we can pull from?

TODAY'S SESSION

Kevin Reed: “CESM as a tool for operational climate change event attribution”

Daniel Kirk-Davidoff: “Climate READi: EPRI’s Climate Resilience and Adaptation Initiative for the Power Sector”

Peter Lawrence: “Developing CESM land use data for actionable science at local scales”

Richard Rood: “Model Guidance for Adaptation Planning: Is CMIP the way forward?”

Danica Lombardozzi: “Farm Management Decisions & the CESM Crop Model”

BREAKOUT DISCUSSIONS

How should we think about and evaluate the usefulness and usability of ESM modeling products for stakeholder groups?

What challenges and opportunities are there for a group like CESM developers and users to begin co-producing actionable science with stakeholders?

How can we learn about and address gaps in the modeling capabilities of CESM (or similar large scale Earth system model) for achieving actionable science?

**DURING THIS
SESSION PLEASE
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