

WCRP Lighthouse Activity on Explaining and Predicting Earth System Change (EPESC)

EPESC: Introduction to CLIVAR

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Science Development Team Members

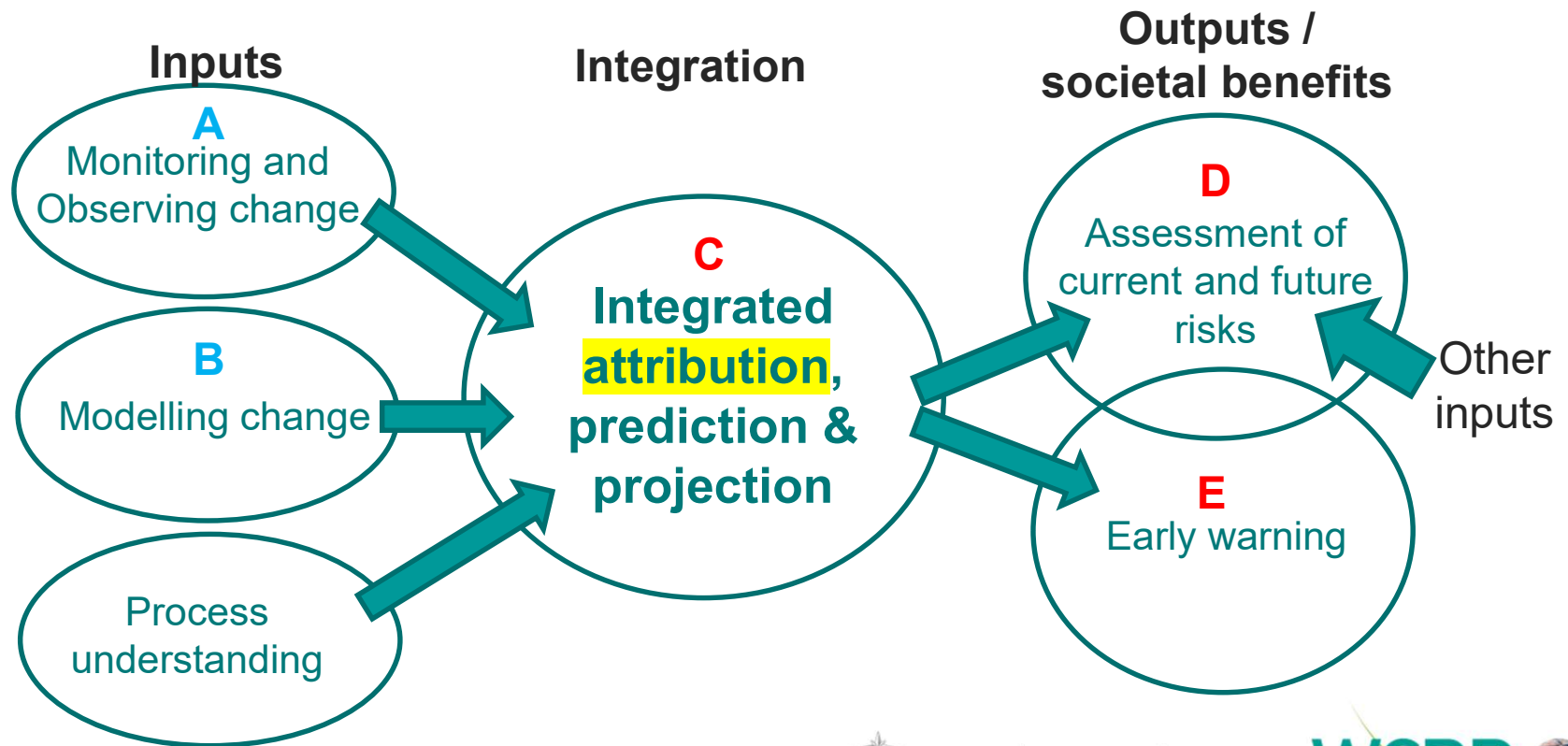
Name	Organization	Country	Rep*
Rowan Sutton (Chair)	National Centre for Atmospheric Science (NCAS), University of Reading	UK	
Anca Brookshaw	Copernicus Climate Change Service European Centre for Medium-Range Weather Forecasts	UK	MD
Doug Smith	Met Office Hadley Centre	UK	
Frederic Vitart	European Centre for Medium-Range Weather Forecasts	UK	
Jochem Marotzke	Max Planck Institute for Meteorology	Germany	
June-Yi Lee	Research Center for Climate Sciences, Pusan National University	Korea	
Kirsten Findell	NOAA Geophysical Fluid Dynamics Laboratory	USA	GE
Leandro Díaz	Universidad de Buenos Aires	Argentina	YE

Name	Organization	Country	Rep*
Lijing Cheng	Institute of Atmospheric Physics, Chinese Academy of Sciences	China	CR
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Markus Donat	Barcelona Supercomputing Center - Centro Nacional de Supercomputación	Spain	MD
Masahide Kimoto	University of Tokyo	Japan	JSC
Michael Ek	National Center for Atmospheric Research (NCAR)	USA	GE
Patrick Heimbach	University of Texas Austin	USA	CL
Sandy Lucas	NOAA's Climate Variability and Predictability (CVP) Program	USA	
Scott Osprey	University of Oxford	UK	SP
Shoshiro Minobe	Hokkaido University	Japan	CR
Zhuo Wang	University of Illinois	USA	WW

WCRP Lighthouse Activity on Explaining and Predicting Earth System Change

Overarching objective:

*To design, and take major steps toward delivery of, an integrated capability for quantitative observation, explanation, early warning and prediction of Earth System Change on **global and regional scales**, with a focus on **multi-annual to decadal timescales**.*



Questions/tasks to be addressed by sub-groups for each topic

1. Research priorities

- What is the scope?
- Where are the key knowledge and capability gaps and associated research questions?
- What research is required? What other activities are required?
 - ***What are the new opportunities for significant progress?***
 - Specific objectives: what are the top 1-3 priorities?
 - Ideas for specific headline activities
- Deliverables and Outcomes (science and impact)

2. Engagement and co-design

- Related WCRP activities and proposed mechanisms for collaboration: what roles are proposed for the EPESC LHA and what roles for other WCRP groups? Has this been agreed with the relevant groups?
- Key external partnerships and proposed mechanisms for collaboration: *begin engagement with key partners.*
- Engagement with research funders and funding opportunities

3. Implementation

- Proposed implementation mechanisms, ***inception activities***, key milestones and timeline
- Resource requirements

Questions from the LHA

Rowan Sutton, the chair, gave me two questions to CLIVAR:

1. In what areas would CLIVAR like to work with our LHA?
2. Are there ideas for specific mechanisms to enable collaboration on particular topics?



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Mapping to other WCRP Activities

	EPESC topic	Key Homes	Suggested EPESC role	Interesting CLIVAR panel or RFs
A	Monitoring and observing Earth System change	Models & Data (WDAC, WMAC)	Models & Data to lead; key role for GCOS.	
B	Modelling Earth System change	Models & Data	Models & Data to co-lead with Digital Earth and Safe Landing Climate	
C	Integrated attribution, prediction and projection (process understanding)	CLIVAR, GEWEX, SPARC, CliC, Models & Data	EPESC to lead this as a central activity	
D	Assessment of current and future hazards	CLIVAR, GEWEX, SPARC, CliC, RiFS, Models & Data	EPESC to lead or co-lead with Digital Earth	
E	Early warning of high impact events including potential abrupt/regime changes	CLIVAR, GEWEX, SPARC, CliC	EPESC to lead, or co-lead with Safe Landing Climate?	