LTER Science Council Meeting 2012

Science Theme: Socio-Ecological Sustainability: The role of Long-Term Ecological Research

Day 1: Plenary talks, Field trip, Poster session, Lead PI meeting

Day 2: Plenary talks, Breakout groups, Business meeting

A common terminology

Glossary

Chapin et al. 2009 TREE

Adaptive capacity: capacity of social–ecological systems, including both their human and ecological components, to respond to, create and shape variability and change in the state of the system.

Ecosystem services: the benefits that society derives from ecosystems.

Ecosystem stewardship: a strategy to respond to and shape social–ecological systems under conditions of uncertainty and change to sustain the supply and opportunities for use of ecosystem services to support human well-being.

Human well-being: quality of life in terms of material needs, freedom and choice, good social relations and personal security.

Resilience: capacity of a social–ecological system to absorb a spectrum of shocks or perturbations and to sustain and develop its fundamental function, structure, identity and feedbacks as a result of recovery or reorganization in a new context.

Sustainability: use of the environment and resources to meet the needs of the present without compromising the ability of future generations to meet their needs [74].

Transformation: fundamental change in a social–ecological system resulting in different controls over system properties, new ways of making a living and often changes in scales of crucial feedbacks. Transformations can be purposefully navigated or unintended.

Vulnerability: degree to which a system is likely to experience harm owing to exposure and sensitivity to a specified hazard or stress and its adaptive capacity to respond to that stress.

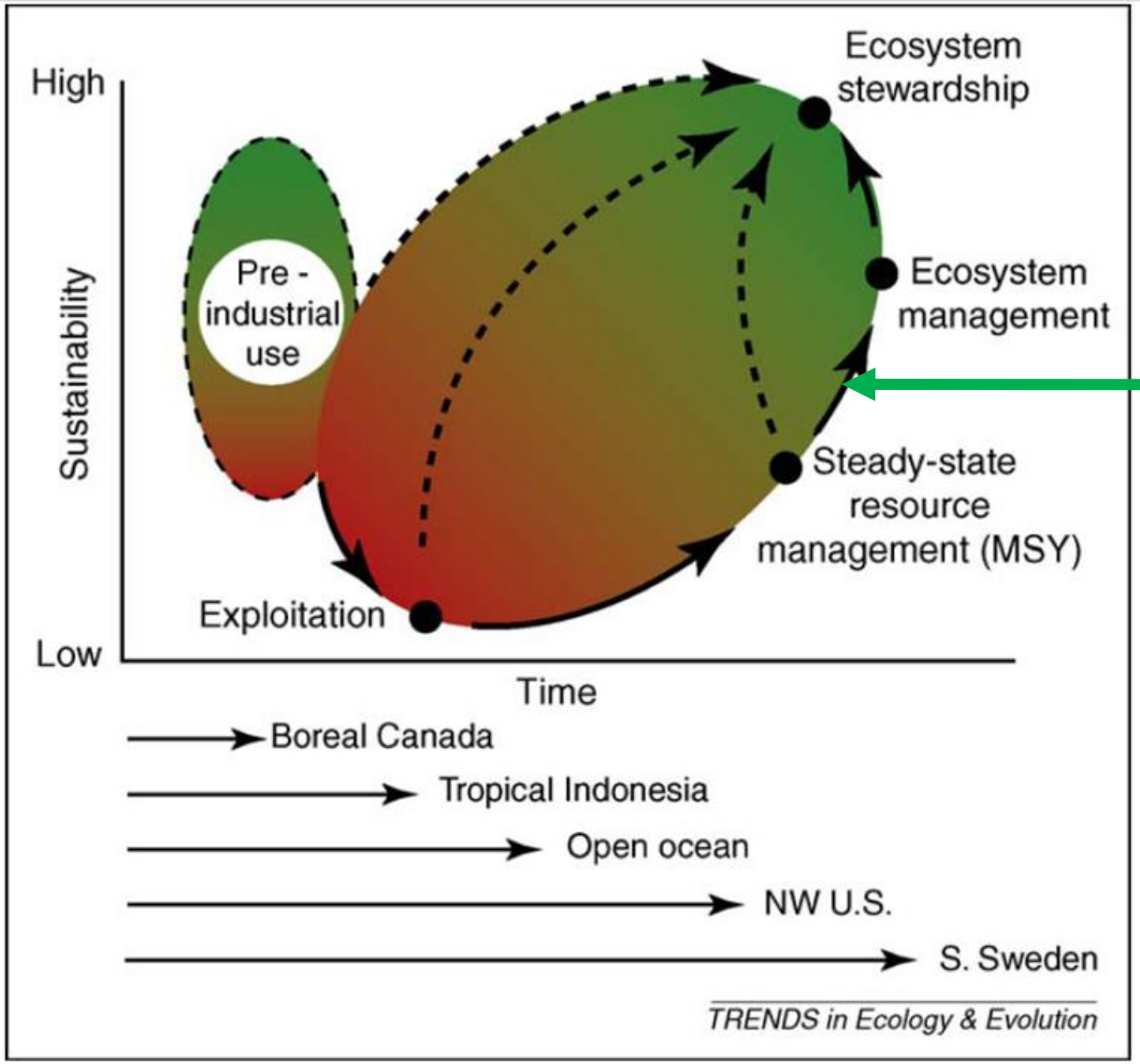
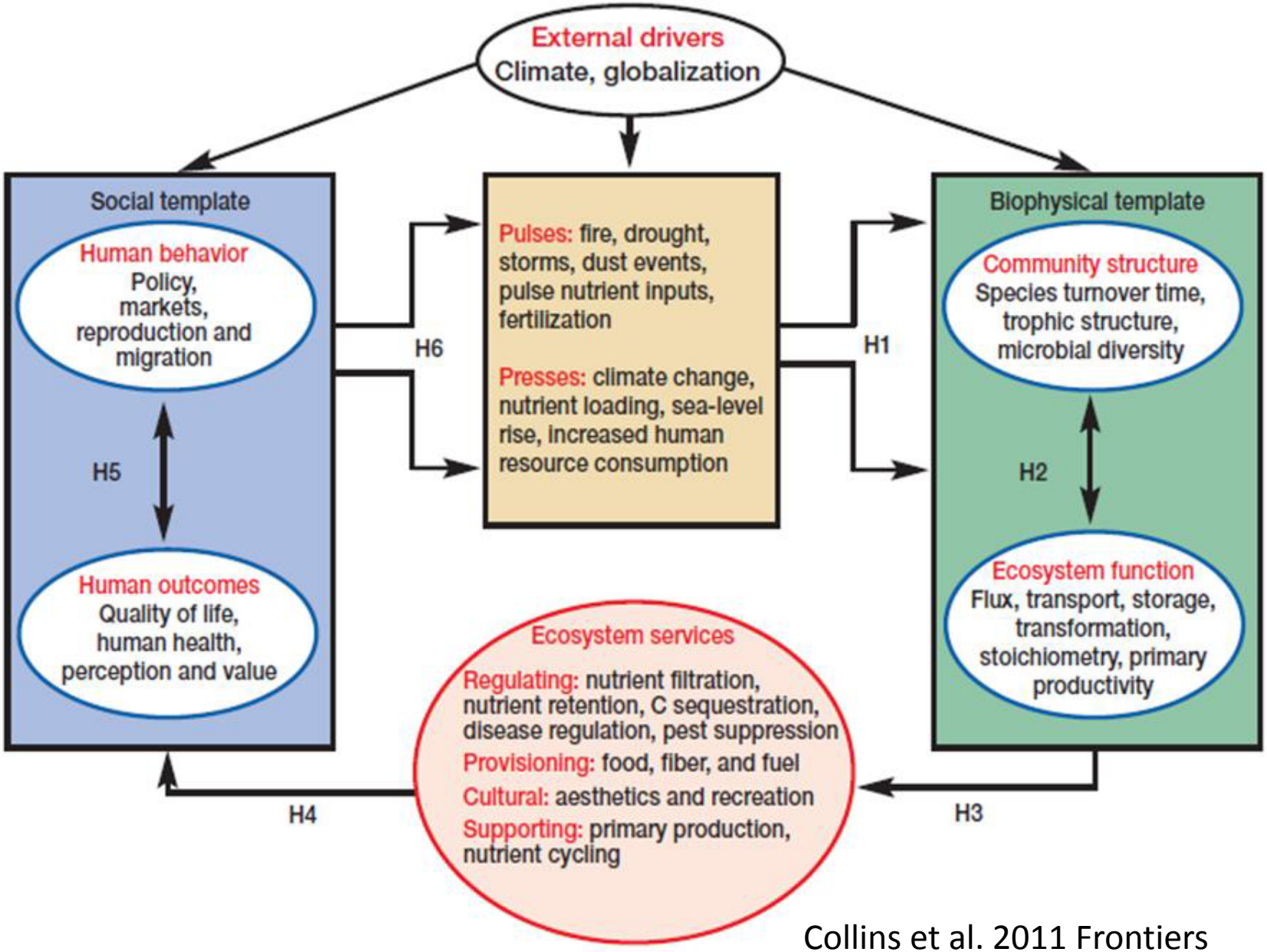


Figure 1. The evolution of resource-management regimes observed in many western nations [11]. Arrows at the bottom show the management time course for selected locations. Dashed arrows show opportunities for developing nations to 'leap frog' from current management directly to ecosystem stewardship. The red-to-green gradient represents increased sustainability.

Chapin et al. 2009 TREE

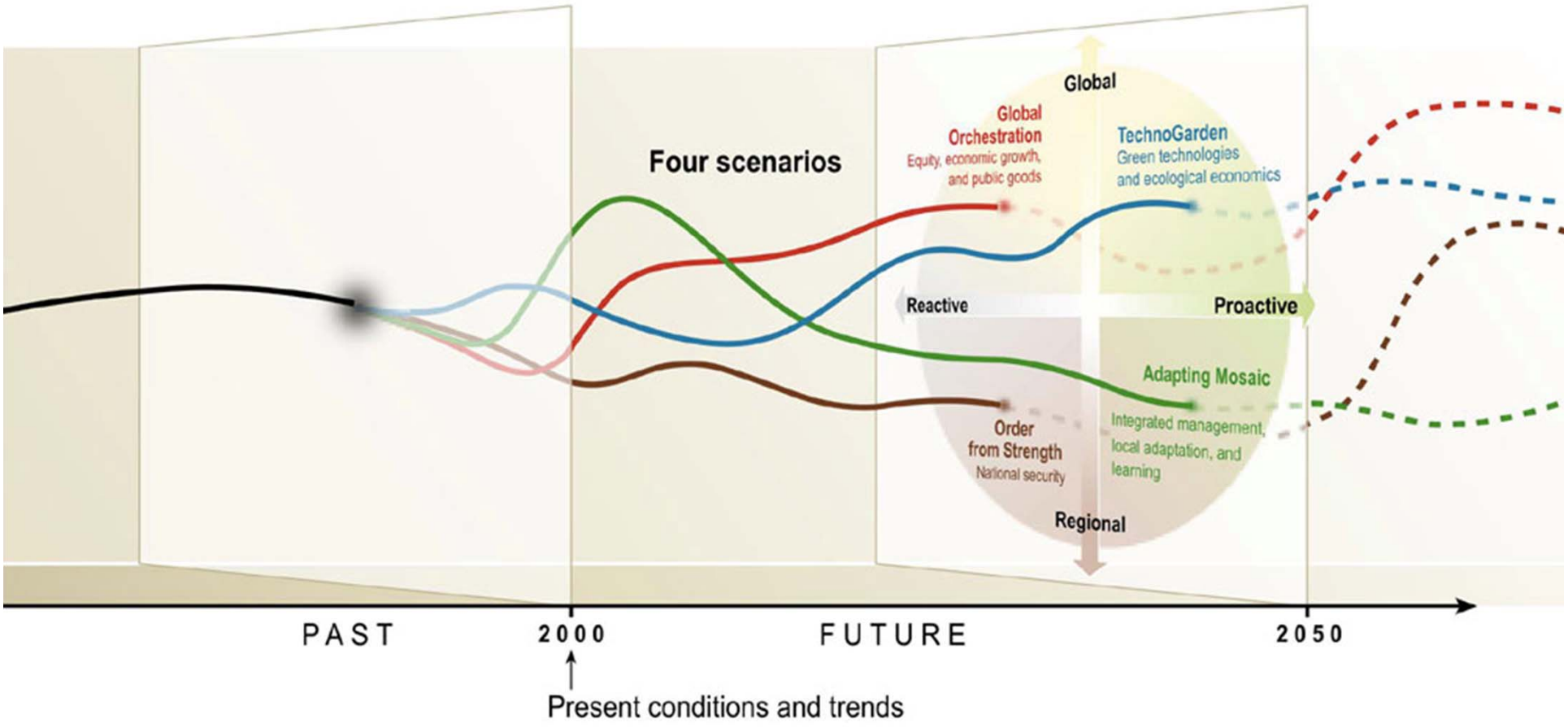
Can coordinated LTER science hasten the pace of this arrow?

Integrative Science for Society and Environment

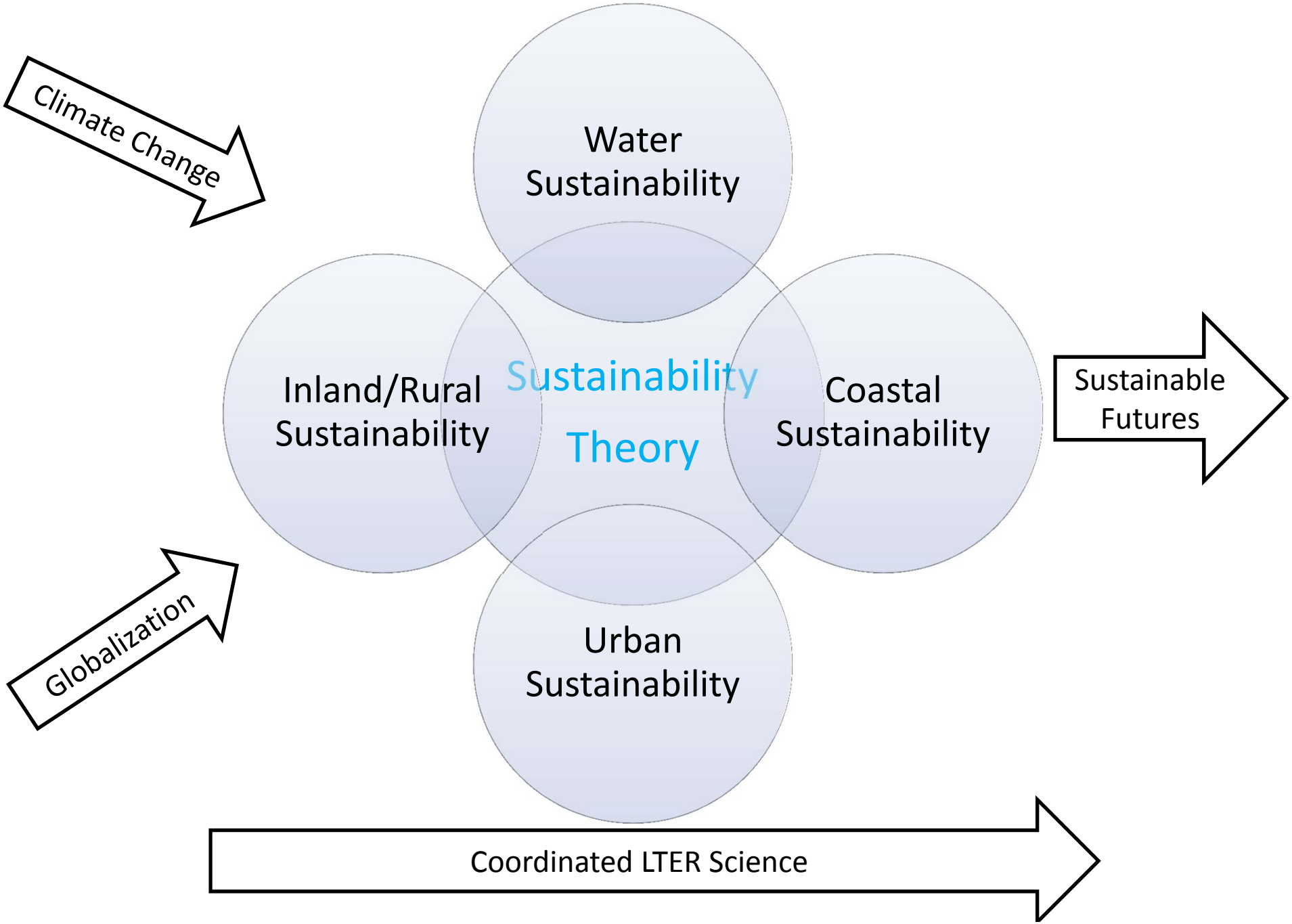


Collins et al. 2011 Frontiers

Using LT Scenarios to Build Resilience



Carpenter et al. 2006 Ecology & Society


Climate Change
Water Sustainability
Inland/Rural Sustainability
Sustainability Theory
Coastal Sustainability
Sustainable Futures
Globalization
Urban Sustainability
Coordinated LTER Science

Agenda Day 1

Wednesday, May 16th

7:00 Breakfast - Cafeteria

8:30 Science Council Meeting - Conference Hall

Welcome and Introductory Comments (Scott Collins)

Overview of Science Program (Karen McGlathery/Evelyn Gaiser)

9:00 Plenary Talks

Potential roles of the LTER Network in fostering local-to-global stewardship (Terry Chapin and Scott Collins)

Incorporating the Long Term Perspective into Sustainability Science (Charles Redman)

10:00 Break

10:30 Plenary Talks

Understanding and facilitating sustainability in urban ecosystems (Steward Pickett)

Identifying Pathways to Sustainable Rural Futures (Hannah Gosnell)

11:30 Lunch and prepare for field trip

12:30 Depart for Field Trip

5:00 Poster Reception - H.J. Andrews Conference Hall

6:00 Dinner

7:00 Lead Principal Investigators Meeting (2nd reps also invited)

Agenda Day 2

Thursday, May 17th

7:00 Breakfast - Cafeteria

8:30 Plenary Talks

Agricultural sustainability and nitrous oxide markets (Phil Robertson)

Sustainability of coastal resources: sea-level rise and coastal forests (Rene' Price)

Managing for resilience in benthic marine environments (Russ Schmitt)

10:00 Break

10:30 Charge to Breakout Groups (Evelyn Gaiser/Karen McGlathery)

10:45 Breakout Groups Meet

12:00 Lunch

1:00 Breakout Group Report and Organization of Smaller Groups

1:30 Small Breakout Groups

3:30 Break

4:00 Small Breakout Group Reports and Synthesis

6:00 Dinner

7:00 LTER Business Meeting - Conference Hall (2nd reps also invited)

Charge to Breakout Groups

Brainstorm topical areas and identify sub-questions that will stimulate discussion in smaller afternoon breakout groups. Potential products of smaller breakout groups include: cross-site synthesis papers based on existing data; development of working groups for new data analyses; plans for new collaborative science, including proposals and papers. Lead PIs and 2nd reps should come to meeting with 2-3 potential specific questions for cross-site collaborative work. Key questions identified by initial breakout groups need not be limited to that working group's theme and can be integrative.

Initial Breakout Groups and Kick-off Leaders:

Water sustainability – Emily Stanley/Julia Jones

Sustainability of urban systems – Dan Childers

Coastal sustainability – Dan Reed/Anne Giblin

Sustainability of inland/rural systems – Roger Ruess/David Foster

Others?