

WIDCORP Resilience Forum

February 4th, 2009, University Ballarat
Follow-up Report

The afternoon began with an introduction by Dr. Pamela McRae-Williams followed by a group introduction. Pam introduced Dr. Brian Walker as an internationally acclaimed scientist working on ecological sustainability and resilience in social-ecological systems. He is a Senior Research Fellow with CSIRO Sustainable Ecosystems and is also Program Director and Chair of the Board of the Resilience Alliance. Brian co-authored the 2006 book *Resilience thinking: Sustaining ecosystems and people in a changing world*; a recommended read for those interested in resilience.

Brian's presentation titled, "A Resilience Approach to an Uncertain Future," provided perspectives in resilience through examples of systems in which the variables of that system were changed, and thus reduced their resilience to external shocks. His presentation provided central concepts in resilience – self-organizing systems, slow moving variables, and a framework for understanding how systems change (what their rate of change might be, the scale of change, their thresholds for change, and the recovery path to a new self-organized state).

Some important concepts that Dr. Walker presented:

- Definition of resilience: "The ability of a system to absorb disturbance and re-organize so as to retain the same structure, function, feedbacks, and thus identity."
- Social-ecological systems are self-organizing and have a for-loop and back loop process of developing (for-loop) and re-organizing after a shock (back loop). There are many theories for how the for loop functions but there are no theories for how the back loop process works.
- Social-ecological systems pose challenges in part because the social component and the ecological component operate and self-organize at different scales.
- You can never successfully manage a system by looking at one scale.
- Definition of Adaptability: "Capacity to manage resilience, to avoid or engineer regime shifts"
- One way to maintain existence of a system is to "transform" into a new type of system which has its tradeoffs. Transformability is "the capacity to transform into a different kind of system – a new way to make a living"
- Resilience thinking is a shift away from trying to optimize our systems to provide the greatest return. Instead it is an attempt to understand systems at all scales to constantly adapt to the ever-changing state of the slow variables in a self-organizing system.

After Dr. Walker's presentation, the attendees broke into groups to identify the slow moving variables and then building blocks of resilience in their region (Ballarat, Horsham, Warrnambool) with respect to environment, economy, and social structure. Each of these three groups reported the following results:

Social Resilience-

Building Blocks

Social/human capital, Financial capital/security, Social diversity, new skills and diversity of people, employment, technology, communications, natural resources, ethics, values and behaviour, infrastructure.

Slow moving variables

Population, natural resources, transport/access, knowledge and values, demographics, climate, food supply, water, structural adjustments, land use and agriculture, social networking, connectedness, ecological footprint, equity.

Economic resilience

Defined by the group as: “A set of system states and related functions that generate an income at least sufficient to support social services to meet the needs of the people”

Building Blocks

Access to resources (natural resources); access to infrastructure (including child support); access to knowledge; diversity of expertise; and access to networks (social)

Environmental Resilience

Defined by the group as: “Adaptive capacity of the environment to withstand variability and maintain the region’s natural resources (aka identity)”

Building Blocks

Biodiversity (distribution and density), knowledge and management systems (where we exist on the for-loop and back-loop), social values and behaviour, native vegetation resources, water management and allocation (groundwater and surface water)

Slow Moving Variables

Biodiversity, temperature (emissions?), water (rainfall, allocation, surface water, groundwater), soil (health, agriculture, loss, chemicals), population (parcel size, distribution), land cover (ag type, stock, patch size)

Obviously it was not a surprise that the three topics above were interrelated, which could be seen by the lists that each group came up with. However, one of our challenges as a group for narrowing down these ideas into the focal building blocks of resilience was that our groups were made up of people from different regions and thus had different perspectives on the resilience of their systems. The next step would be to identify the linkages and influences each of these components has on each other for a particular region and particular system; resilience *of* what and *to* what?

Please feel free to continue the discussions with others.

Web site of interest

www.resalliance.org

Book

Resilience Thinking A book by CSIRO scientist and RA Program Director Brian Walker and science writer David Salt provides an accessible introduction to resilience research and argues for a dramatic change in how natural resources are managed. The resilience framework is explored by way of five case studies that demonstrate how communities are better able to withstand cycles of change when ecological drivers are better understood and when natural change is embraced rather than controlled. Copies of the book can be ordered online from Island Press.

Note: UB Library has a copy to borrow