The Namoi Catchment Action Plan: Resilience theory into practice at the Catchment (regional) scale in Australia.

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Abstract

Natural resource management plans in New South Wales (Australia) are developed on river catchments. In 2009 the Government trialled the use of a resilience framework for developing resource management plans to 2020. The Namoi Catchment Management Authority was one of two regions to pilot the approach.

The Namoi Catchment is a rich agricultural region. Its natural resources are governed by a complex array of laws and policies. Natural resource management is co-ordinated through a Catchment Action Plan (CAP) whose goal is the management of land, water, biodiversity and communities to achieve resilient communities and landscapes. The CAP relies on collaboration and co-operation for its implementation.

A resilience assessment was completed in 2010 for the Catchment based on the resilience alliance workbook. Conceptual models of social-ecological system function were developed around the themes of land, water, biodiversity and people. Critical underpinning assets were identified. Trends and thresholds were identified in relation to those assets. An evidence base was established and resilience concepts synthesized into plain English principles to assist with engaging with all stakeholders.

A process was designed to transparently develop implementation plans based on the CAP by prioritising thresholds based on contribution to overall system function, proximity to threshold, trend, temporal risk of threshold being breached along with an assessment of triple bottom line outcomes, achievability, time lag to benefit and cost. The resilience-based CAP has resulted in more targeted priorities for on ground investment, and tightly focussed knowledge gathering projects to target strategic information needs.

Resilience based planning has resulted in a much more focussed and simplified set of priorities – an "uncluttering of the agenda" – which if addressed can mean maximum choices for the region in future. The resilience approach has allowed all stakeholders to focus on the few key issues that if not addressed will potentially undermine the regions capacity to cope with future shocks and changes.

Within the CAP, triggers for adaptive management and continuous improvement were embedded to ensure the Plan was based on the most up to date knowledge and understanding

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of system function. This process includes an annual review cycle and adaptive management triggers identifying the scale of change that would require resubmission of the CAP to Government and community. A range of innovative tools and methodologies have also been developed to support implementation of the CAP for example a landscape scale cumulative risk assessment tool for mining developments.

Several challenges have emerged:

- Thresholds perceived by some as de facto development targets.
- Obtaining unanimous acceptance of current trends and trajectories based on evidence.
- Ensuring community ownership and understanding of resilience concepts.

Our experience has shown that a resilience based natural resource management plan can play a role in supporting decision-making that leads to more equitable and beneficial social development paths. The Resilience thinking framework stimulated new insights into how to address development issues arising from changes in the region including shifting demographics, climate change and a rapidly expanding mining sector competing with agriculture.

**Keywords:** adaptive governance, community engagement, decision, making, development, governance, land management, planning, resilience, resilience assessment, social, ecological systems, stakeholder engagement, threshold, water management