

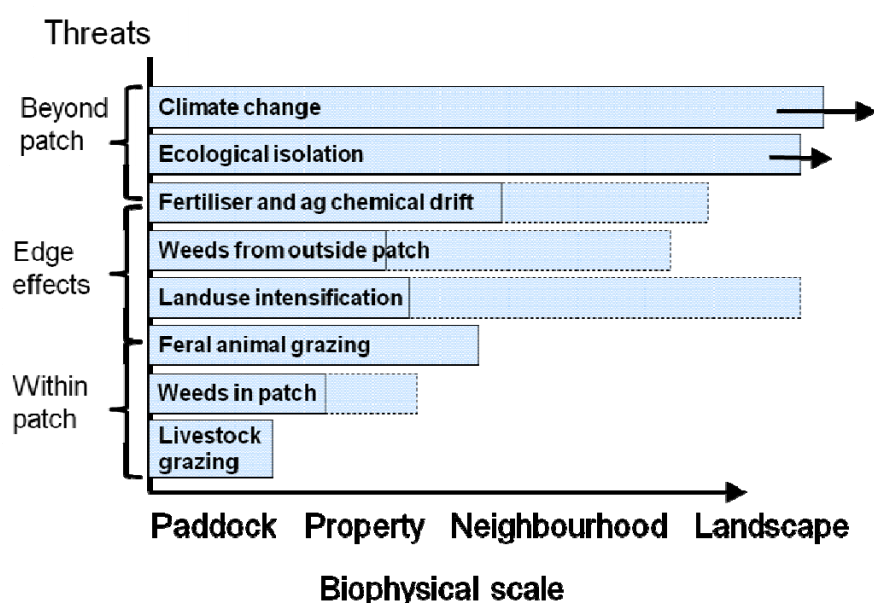
# Policy mixes for landscape outcomes in Australian agri-environmental settings: challenges, principles and potential for implementation

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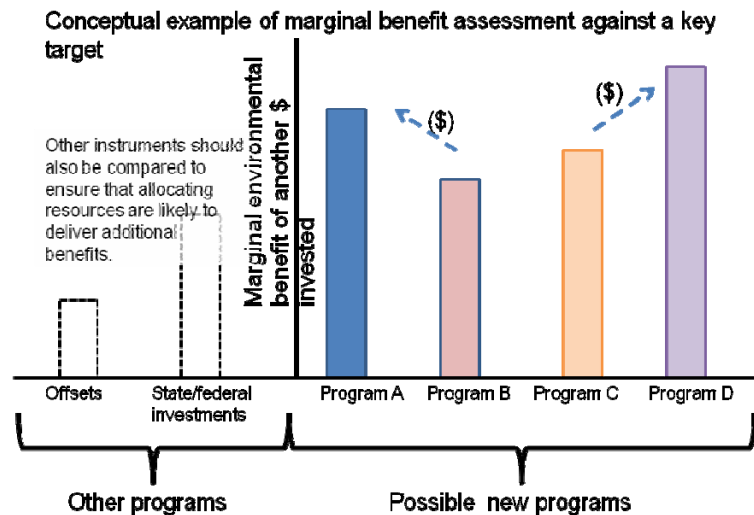
## Abstract

There is growing interest internationally and in Australia in coordinated landscape scale conservation actions to deliver the functional ecological connectivity required to ensure the persistence of biodiverse landscapes into the future. Functional connectivity moves beyond the human view of the connectedness of landscapes towards facilitating ecological processes across scales, which may include evolutionary and climate adaptation processes. Managing biodiversity across landscapes at such a these scales necessarily involves the private landholders who own or manage those tracts of land between areas managed specifically for conservation. Intervening tracts of land (the agricultural matrix) will likely need to generate multifunctional outcomes: agricultural production, direct support of ecological processes and ecosystem services, and buffering and protecting ecological processes and ecosystem services in core areas. Desired managements are will differ according to the nature of the interaction with biodiversity as illustrated in Figure 1.



**Figure 1:** Examples of threat to management scale interaction

A key organisational arrangement addressing parts of this challenge in Australia has been the creation of 54 regional natural resource management units one of which is the Wimmera CMA. Wimmera CMA has a finite amount of resources available and must target where to spend these limited resources in order to deliver against the targets that it has set. In this paper we first describe a more formal framework for selecting and designing mechanisms that might fit into an 'efficient' mix, which is applied in a conceptual way to the polymix employed by Wimmera CMA. Not only will Wimmera CMA face the challenge of effectively addressing a suite of management actions (Figure 1), limited by institutional constraints and by interactions with mechanisms employed by other organisations / layers of government that are also delivering against similar goals (Figure 2). These will have a range of interactions on CMA programs; complementary, perverse, or competitive. The effectiveness of instruments will also be impacted by the inherent heterogeneity in the landholder population (partly derived from biophysical variation (which could relate to the range of activities required), enterprise structure variation, and social and economic variations) mean that mechanisms will not influence landholders uniformly, and multiple mechanisms (or no mechanism) may be required.



**Figure 2:** Conceptual example of when new programs may be considered desirable

The obvious conclusion is that a mix of policy mechanisms will be required to deliver landscape objectives. A detailed analysis of the policymix implemented by the Wimmera CMA indicates that, while different mechanisms are effective for different purposes, mechanisms that account for landholder heterogeneity at different scales, and which are mutually supportive rather than direct substitutes, are likely to form core elements of any successful policymix. Some principles for deciding between elements of an integrated policy mix are identified along with practical guidance for their implementation.

**Keywords:** Policymix; landscape coordination; coordinated policy; landscape incentives.