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New Zealand's forest ecosystem services and their contribution to community resilience

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Abstract:

New Zealand's 1.7 million hectares of planted forests constitute a productive ecosystem that is increasingly recognised for its contribution to the nation's economic prosperity, environmental conservation and human well-being. Studies have shown that the social and environmental values from production forests can be greater than the benefits derived from timber and forest products. While previous studies have shown some indicative values from the market and non-market benefits of ecosystem services, this study provides examples of how such information can be used to demonstrate how key forest ecosystem services can contribute to human well-being and community resilience. These examples include: (1) a national government agency adopting a more targeted approach to afforestation; (2) a regional government agency managing land use change in a catchment; and (3) a forest company quantifying ecosystem services to support the renewal of their product certification (i.e. Forest Stewardship Council certification). For each example, we have quantified and valued key ecosystem services (timber, carbon sequestration, avoided sedimentation and recreational hunting) using a spatial economic tool called the Forest Investment Framework. Results suggest that the combined environmental (carbon, avoided sedimentation) and social (recreation) values, in many case study forests, were significantly greater than the economic value (profit from timber). This study provides evidence that although the primary goal of planting and growing forest trees is to produce profit from timber harvesting, it also simultaneously provides important environment and social benefits to communities who can access those services. We conclude that with the ecosystem services approach, both market and non-market benefits provided by planted forests can be better represented in policy and decision making so as to sustain their contribution to human well-being and community resilience.