

# 2nd Policy Forum on Natural Capital Accounting for Better Decision Making Applications for Sustainable Development

PART 2

May 2018





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2<sup>nd</sup> POLICY FORUM ON

# Natural Capital Accounting for Better Decision Making

Applications for Sustainable Development

Edited by Arjan Ruijs and Michael Vardon

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## PART 2 – Case studies

WAVES is a World Bank-led global partnership that aims to promote sustainable development by ensuring that natural resources are mainstreamed in development planning and national economic accounts.

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## 5. Ecosystem accounting to inform decisions about forest management in the Central Highlands, Australia

By Heather Keith, Michael Vardon and David Lindenmayer

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### Summary

Ecosystem accounts developed for the Central Highlands region, near Melbourne, informed government decisions about forest use. Currently, native forest timber harvesting conflicts with water provisioning, carbon sequestration, biodiversity conservation and recreation. The native forest on public land is managed under an agreement that guarantees wood supply within a defined area on public land and conservation within a national park boundary. This agreement is currently being re-negotiated. Synthesizing environmental and economic information in the form of ecosystem accounts allowed quantitative comparisons in physical and/or monetary terms that enabled trade-offs to be defined explicitly and spatially.

The accounts included values of ecosystem services and of economic value-added of industries that rely on the ecosystem services. Results demonstrated that a transition away from native forest harvesting would improve the condition of ecosystem assets, the conservation of biodiversity, and the provision of ecosystem services for other land uses, and would reduce the threat of extinction of critically endangered species. Economic gains from increased water supply and carbon storage exceeded the losses from ceasing native timber production. Results from the study are contributing to government decision making and public education.

### 5.1 The need for information to inform policy

This paper reports on the development and application of natural capital accounting (NCA) in the Central Highlands of Victoria, in south-eastern Australia. The accounts were developed over a 2-year period, specifically to feed information into government decisions about forest use in an area close to Melbourne, the capital city of Victoria.

Current land use activities in the Central Highlands of Victoria include timber production, biodiversity conservation, agricultural production, water supply, carbon sequestration, recreation and tourism. These activities are dependent on ecosystem assets and services, and their use can be either complementary or conflicting. Land can be managed for biodiversity conservation, water supply, carbon sequestration and ecotourism (minimal impact activities) in a complementary manner. Harvesting of native forests conflicts with the assets and services used by the previous activities. Agricultural production and plantations occur on different areas of land, but use some ecosystem services generated on the native forest land. The region is home to a wide range of species, including the endemic and critically endangered Leadbeater's Possum and Helmeted Honeyeater, the two faunal emblems of Victoria, as well as the world's tallest flowering plant, a eucalypt called Mountain Ash. The area provides practically all the water for Melbourne, a city of 4.4 million people, making it the second biggest in Australia. Water is also supplied for irrigating crops in

the surrounding farmland. The forests are some of the most carbon dense in the world and maintaining this stable and resilient store of carbon in a natural ecosystem is important for climate change mitigation. With its proximity to Melbourne, the region supports a large and growing tourism industry. There is a small timber industry that uses both wood supplied from native forests and plantations that produce paper pulp and sawlogs.

The region forms part of the Central Highlands Regional Forest Agreement that is due for re-negotiation in 2018. These agreements are made between state and national governments and legislate a 20-year plan for forest management that guarantees wood supply from defined areas. Proponents within the native timber industry have called for a guaranteed and expanded allocation of native forests for timber harvesting. By contrast, stakeholders within the environmental and tourism sectors have promoted an expansion of the national park network, proposed as the Great Forest Reserve System, to promote biodiversity conservation and eco-tourism. Negotiations of previous agreements have been protracted with controversial processes involving debates among public, industry, government and non-government organizations.

Managing the various activities within the region is complex and requires evaluation of the trade-offs between different land uses. Synthesizing environmental and economic information in the form of ecosystem accounts provided a basis for quantitative comparisons in physical and/or monetary terms that enabled trade-offs to be defined explicitly and spatially.

The study involved collating and synthesizing site and spatial data, and functions describing ecosystem processes to generate a time series. Data at different spatial and temporal scales required integration to develop consistent accounts that aligned with the area and timeframe of study. Data in the accounts were analyzed using physical and monetary metrics, ecosystem services and Industry Value Added, trends over time, and scenarios with changing land use to provide results relevant to natural resource management policy. In this paper, we describe briefly the process of developing the accounts; the outcomes in terms of results from the analyses and how they could inform decision making; communication strategies for the results about the Central Highlands to inform policy makers, scientific community and the public; and general lessons from this case study that are applicable for future work on ecosystem accounting. We compare experiences from this case study with the 10 living principles for making NCA fit-for-policy.

## 5.2 Process of developing ecosystem accounts

The study was undertaken within an academic institution using multi-disciplinary expertise. The need for information that can be provided by ecosystem accounts was identified by us as a useful input to the Regional Forest Agreement negotiations, as well as to inform both policy makers and

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