

Recognising broader benefits of aquatic ecosystems in Australian water planning: an ecosystem services approach

Identification des bienfaits des écosystèmes aquatiques pour la planification de l'eau en Australie : une approche axée sur les services écosystémiques

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RÉSUMÉ

Les systèmes aquatiques d'Australie et du monde entier offrent de nombreux bienfaits qui doivent être identifiés de façon claire et détaillée et être rendus public pour pouvoir les prendre convenablement en compte dans les processus de planification des eaux et ainsi éviter toute mauvaise répartition de l'eau. L'Initiative nationale pour l'eau (NWI) a appelé en Australie à la mise en place d'un processus de planification visant à identifier les avantages en termes de production ou d'environnement et autres bienfaits d'intérêt public et de les prendre en compte de façon claire et transparente (Clause 25iii de la NWI). Cette étude présente les résultats d'un projet initié et financé par la Commission nationale de l'eau en Australie. Le projet a adopté une approche axée sur les services écosystémiques comme moyen permettant de mieux identifier, décrire, évaluer, expliquer et communiquer ces bienfaits tout au long du processus de planification. Le projet met en place une réflexion sur les services écosystémiques en fonction des Directives actuelles en matière de gestion et de planification de l'eau établies par la NWI. Il doit permettre de fournir aux responsables de la planification de l'eau des conseils sur une meilleure prise en compte des avantages et bienfaits offerts par les systèmes aquatiques et ripicoles dans les processus de planification de l'eau. Un manuel et des fiches d'information ont été publiés dans le cadre du projet pour fournir des renseignements, des études de cas et des exemples pratiques de planification de l'eau. Le public cible comprend les responsables de la planification de l'eau et de la politique de l'eau ainsi que leurs assistants, les inspecteurs du trésor public et les membres de la communauté chargés de rassembler des informations sur les processus de planification de l'eau. Cette étude fournit également quelques informations sur le contexte de la planification de l'eau en Australie, résume l'approche axée sur les services écosystémiques développée pour le manuel et présente des moyens permettant de l'appliquer concrètement. Enfin, l'étude aborde les défis qu'il reste à relever dans le cadre de la mise en œuvre de cette approche.

ABSTRACT

Aquatic systems in Australia and worldwide provide many public benefits that need to be clearly and comprehensively identified and communicated so they are adequately recognised in water planning processes and misallocations of water avoided. The Australian National Water Initiative (NWI) calls for 'planning processes in which there is adequate opportunity for productive, environmental and other public benefit considerations to be identified and considered in an open and transparent way' (NWI Clause 25iii). This paper presents findings from a project that was initiated and funded by the Australian National Water Commission. The project adopted an ecosystem services approach as a mechanism to better identify, describe, value, explain and communicate such public benefits throughout the water planning process. The project weaves ecosystem services thinking into current NWI Policy Guidelines for Water Planning and Management to provide Australian water planners with guidance on how the multiple benefits and values provided by aquatic and riparian systems could be more comprehensively considered in water planning processes. The project developed a Handbook and supporting fact sheets, offering information, case studies and worked water planning examples. Key audiences include water planners, water policy makers, Treasury officials, consultants assisting water planners, and community members providing input to water planning processes. The paper provides a brief background to current issues in Australian water planning, summarises the ecosystem services approach that was developed for the Handbook, and showcases how it can be applied in practice. The paper also discusses remaining challenges in implementing the ecosystem services approach.

KEYWORDS

Ecosystem services, trade-offs, valuation, water planning.

1 BACKGROUND

Aquatic systems in Australia and worldwide provide many public benefits that need to be clearly and comprehensively identified and communicated so they are adequately recognised in water planning processes and misallocations of water avoided. In Australia, the National Water Initiative (NWI), an intergovernmental agreement between the Australian, state and territory governments, calls for 'planning processes in which there is adequate opportunity for productive, environmental and other public benefit considerations to be identified and considered in an open and transparent way' (NWI Clause 25iii). Such other public benefits may include: mitigating pollution, public health (such as limiting noxious algal blooms), Indigenous values, cultural values, recreation, fisheries, tourism, navigation and amenity values (NWC 2011).

Benefits from aquatic ecosystems can be classified into two broad groups: extractive benefits and non-extractive benefits. Extractive and non-extractive benefits do not necessarily represent a trade-off, but rather an interdependence that should be acknowledged when making water allocation decisions (Postel 2008). Extractive benefits arise when water is taken out of the system and used for production purposes, which oftentimes generates private benefits. Extracting water as an input to irrigated agriculture, with private benefits arising from commercial farming, is a well-known example.

Non-extractive benefits arise from leaving water in the system, or 'giving water back' to the system. Non-extractive benefits – for example aesthetic beauty, disaster risk reduction, or catchment protection - are often of a public nature in the sense that they are not commercialised by trading them in the marketplace. This means that many public benefits can be obtained for free. Even though many public benefits cannot be directly monetised, they should still be examined in the water planning process.

This paper presents a project that was initiated and funded by the Australian National Water Commission. The project produced a Handbook for Australian water planners, adopting an ecosystems services approach as a mechanism to better identify, describe, value, explain and communicate public benefits throughout the water planning process as laid out under the NWI.

2 APPROACH

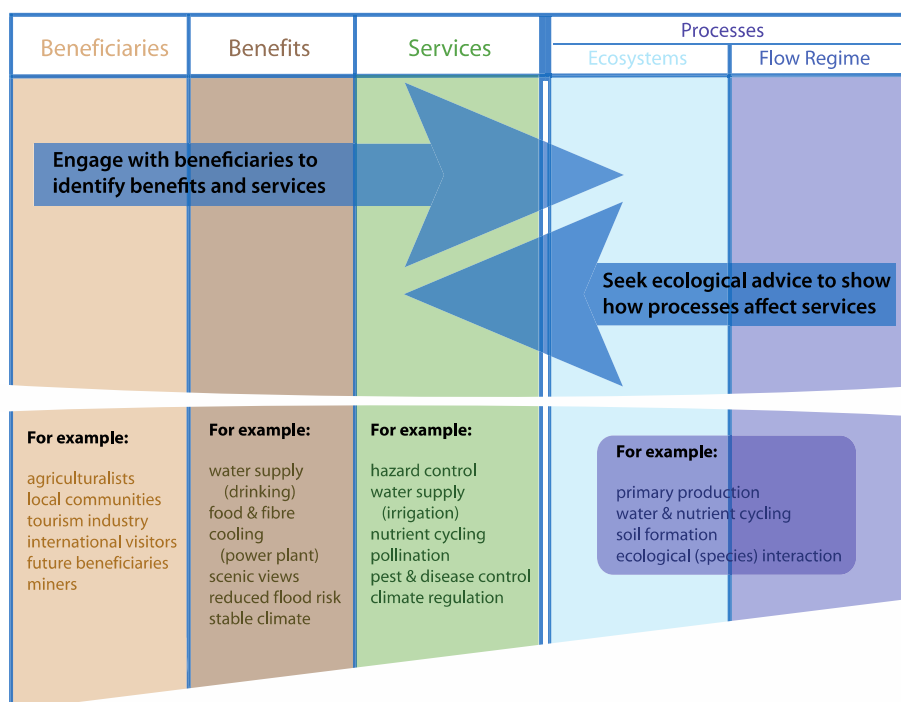


Figure 1 – Benefits Framework for water planning

The overall approach to the project was to weave ecosystem services thinking into the current NWI Policy Guidelines for Water Planning and Management to provide Australian water planners with guidance on how the multiple benefits and values provided by aquatic and riparian systems (such as

rivers, wetlands, floodplains and groundwater systems) could be more comprehensively considered in water planning processes. Following Daily et al. (2008), we interpret ecosystem services as the conditions and relationships through which natural ecosystems and the species that make them up, sustain and fulfil human life.

A tailored Benefits Framework (Figure 1) for water planning was developed as a conceptual aid for identifying beneficiaries of aquatic ecosystems and subsequently defining and classifying ecosystem processes, services and benefits with them. The Framework extends traditional descriptions of the water resource, which focus on the quality and quantity of the water available to consume, to also include a description of the non-extractive benefits yielded by aquatic ecosystems and the people to whom these benefits are important. The Benefits Framework helps water planners to comprehensively and systematically identify the beneficiaries of both extractive and non-extractive benefits that water in an aquatic ecosystem can provide. From this point a description of specific benefits, and the particular ecosystem services that provide these benefits, can also be made. The Framework also helps water planners develop an understanding of how knowledge of particular flow regimes might impact on ecosystem integrity, and the flow-on impacts to services connected to the ecosystem, and to the benefits and beneficiaries.

3 RESULTS

The project developed a Handbook and supporting fact sheets, offering information, case studies and worked water planning examples based on a dummy plan. Key audiences for the Handbook include water planners, water policy makers, Treasury officials, consultants assisting water planners, and community members providing input to water planning processes.

The ecosystem services concept is an ostensibly and deceptively simple one – hence its wide appeal. However, several challenges remain. In particular its communication to lay audiences and practical application in planning are still often mired in a lack of clarity about definitions and classifications, as well as confusion about the need for dollar values. Evidence from our project suggests that the specific ‘jargon’ of ecosystem services isn’t necessary useful to stakeholders – it is the concept of benefits from nature, and the naming of specific beneficiaries, benefits, services and processes that provides a common language.

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