

Ecosystem services

Property rights and the management of aquatic ecosystem services

A completed WRC-funded study investigated property rights and how they fit in with the management of aquatic ecosystem services in South Africa.

Background

In South Africa, with a growing appreciation of water scarcity, we have seen a shift away from the notion of ownership to rights of use. This shift marks explicit acknowledgement that water and the associated ecosystems need to be understood and managed as common pool resources.

As our understanding of the links between ecosystems and society has developed we are encouraged to view ecosystems as providers of services from which we can derive benefits. Society's interest in aquatic ecosystems is thus focused on how the benefits of access to and use of services should be apportioned, a process that requires trade-offs and collective decision-making.

The need to allocate rights to benefit from ecosystem services that are highly variable in time and space stresses the central importance of understanding the concept of property rights in the context of common pool resources and embedding this in dialogue addressing the sharing of benefits.

It is believed that well-developed and specifically detailed property rights regimes might contribute significantly to the equitable and efficient governance of common pool resources.

WRC study

With this in mind, the WRC funded a study which among others:

- Explored the salient attributes of property rights regimes, particularly common property regimes that sustain cooperative approaches to management over long periods of time;
- Identified property rights knowledge gaps in the management of water resources in South Africa;
- Analysed national policy and legislation with a view to assess the extent to which property rights theory and understanding have been integrated;
- Developed a collective understanding of how property

rights regimes, particularly common property theory, influences the management of aquatic ecosystem services in South Africa; and

- Contextualised property rights within the water sector.

Property rights – Lessons for South Africa

The following key messages emanated from the study of property rights internationally:

- **There is a flawed understanding of what is meant by property rights.** This has caused the contribution of property rights to cooperative management to be overlooked.
- Despite its obvious importance to South Africa, **the subject of property rights is poorly understood.**
- Even at the international level, property rights regimes as governance mechanisms are poorly understood. Where they have been applied it has usually been at the reduced level of complexity of a single ecosystem service.
- Water resources in South Africa are primarily common-pool resources, and common property regimes are **appropriate governance mechanisms for common-pool resources.**
- Clearly defined property rights usually result in improved resilience of a social-ecological system. If the overall goal is to achieve the equitable and sustainable sharing of ecosystem benefits from aquatic resources, this is only possible within the context of a **clearly defined property rights regime.**

Water as a property right in South Africa

In South Africa, where water resources are scarce, defining and enforcing property rights to the water resource is critical to reduce conflict and to support sustainable use of the resource. This is achieved through a combination of formal (top down) and informal (bottom up) institutions.

Water rights in South Africa are entrenched in the Bill of Rights of the South African Constitution, while the National Water Act interprets these Constitutional rights as giving priority to the right to water for the Reserve.

In South Africa:

- Water right = authorised access to water for environment
- Water property = benefits arising from the authorised access to water for the environment (i.e. ecosystem services)
- Water property right = claim to the benefit arising from the authorised access to water for the aquatic ecosystem
- Water property right regime = management of natural resource with similar characteristics, i.e. management of water resources.

Present water institutional structure

The current water institution in South Africa was reviewed. The following key messages emanate from this part of the project.

The project found that it is not the water law or policy that requires adaptation and change to ensure equitable, efficient and sustainable allocation of water use, but rather the manner in which these policies and laws are interpreted in the implementation. The water allocation process would thus benefit from integrating ecosystem service thinking, analysis and approaches into the process.

There is an urgent need for the Department of Water Affairs (DWA) and the catchment management agencies (CMAs) to identify all the possible benefits provided by aquatic ecosystem services within water management areas, and to apply the economic value of these in the water allocation and authorisation decision-making process. This is particularly important in catchments where livelihoods of poor individuals are directly dependent on these aquatic ecosystem services.

Since Schedule 1 water uses and users are directly and implicitly related to the ecosystem service provided by the water resource, the right to this common-pool resource needs to be considered before allocation of water resources to the General Authorisation and water use licence (WUL) users. Most important is that the water property rights of these users need to be considered in water allocation decisions.

These Schedule 1 uses need to not only consider the direct use (benefit) of the common-pool resource but also other ecosystem services, such as watering of livestock, food production as part of survival strategies, survival strategies during disasters etc. Thus, to ensure equitable allocation of this common-pool resource, Schedule 1 water uses also need to be acknowledged and recognised in the water allocation process, including the aquatic ecosystem services which these Schedule 1 users benefit from.

Identifying and quantifying all the possible services within water management areas, and making decisions on water

authorisation and allocation based on these, can assist with the mitigation of direct and indirect impacts linked to a WUL.

While recognition of the aquatic ecosystem services from which water users benefit in the water authorisation and allocation procedure in South Africa can help identify trade-offs, this process needs to be supported by a process of negotiating these trade-offs. The water user associations (WUAs) are the ideal organisation at which these trade-offs can be negotiated.

Once water property rights have been recognised and included in the water allocation and authorisation process in South Africa, monitoring and evaluation is required to detect and correct violations, provide evidence to support enforcement actions and evaluate programme progress by establishing compliance status.

Recommendations

Based on the final report, the requirements for a robust institution to enforce compliance to the water property rights regime in South Africa will require addressing the following gaps:

- The water institution in South Africa is presently failing due, in part, to the poorly defined and applied water property rights regime;
- Water property rights are poorly defined in the water institutional environment and thus within the water sector as a whole. For the present property rights regime to function efficiently, water property rights need to be included in policy, legislation and regulations;
- A common property rights regime needs to be considered and recognised at a local level, which will support the national public property rights regime. Implementation of a local level common property rights regime, through the strengthening of the WUA role in the water institution, will devolve the decision-making to the users effected by the rules;
- The present understanding of the South African water institution does not necessarily reflect international experience. This needs to be reviewed given international trends.
- Transparency in decision-making and accountability in the South African water institution is weak. This could be strengthened through improvement in the property rights regime in the country, especially through the introduction of standardised water instruments in a consistent manner.

Further reading:

To order the report, *Embedding property rights theory in cooperative approaches to the management of aquatic ecosystem services in South Africa* (Report No. 2073/1/12) contact Publications at Tel: (012) 330-0340, Email: orders@wrc.org.za, or Visit: www.wrc.org.za to download a free copy.