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Water Values in the Cuiabá River Basin and in the Brazilian Pantanal

Summary

The Cuiabá River Basin is located in the geographical centre of South America. It is almost entirely situated in the Brazilian state of Mato Grosso, which is well-known for its rapidly expanding agribusiness sector, as well as for hosting the Pantanal, the world's largest continental freshwater wetland. The paper to be presented explores multiple dimensions of water values in the Cuiabá River Basin and in the Pantanal, with a special focus on non-monetary values. It is based on qualitative interviews with representatives of different stakeholder groups and connects water values with concrete issues of water governance, such as water supply and sanitation, water charges, fishing and tourism, as well as the conservation of the Pantanal's biodiversity. Following a wide theoretical conception of value, the research not only presents specific values assigned to water, but shows how different high-level values shape the perception of water governance issues within different stakeholder groups.

Extended Abstract

The Cuiabá River Basin is located in the state of Mato Grosso, in the Central-West Region of Brazil. It supplies water to the regional capital city of Cuiabá, cattle ranchers and large-scale soybean farmers in the surrounding uplands, as well as to the Pantanal, the world's largest continental freshwater wetland and host to an extraordinary biodiversity. The paper to be presented outlines the values that different local stakeholder groups attach to water resources and examines how these are inserted into water governance in the area. It builds on previous work carried out in the framework of the *Pantanal International Network* (Martin-Ortega et al., 2011), which was carried out in partnership between Scottish and Brazilian researchers. However, it is the first to explicitly focus on the value of water resources in the Cuiabá River Basin.

Values have been studied in a variety of disciplines, including economics, philosophy, psychology, and geography. While environmental economists have developed a toolkit to quantify values of the environment in monetary terms, which can be incorporated for example in cost-benefit analyses and other governance instruments, scholars from other disciplines are consistently calling for alternative approaches to take non-monetary

dimensions of value into account. A prominent example are Joan Martinez-Alier's 'languages of valuation' (2002) which contrast economic, aesthetic, cultural, spiritual and livelihood values of natural resources, among others. Environmental philosophers have laid out the theoretical bases for value pluralism, arguing that there is a variety of basic values that cannot be converted into each other using a single measurement unit (O'Neill et al., 2008). In the policy arena, the Millenium Ecosystem Assessment (2005) and the UK National Ecosystem Assessment (Watson & Albon et al., 2011) have tried to capture different values of the environment, using the ecosystem service paradigm as a starting point.

Given the diversity of water uses in the area, the Cuiabá River Basin presents itself as an ideal location to study different dimensions of the value of water resources. While the Pantanal is home to a large number of species and sustains traditional farming and fishing lifestyles, the upstream parts of the Cuiabá River witness the rapid expansion of a modern soybean producing sector that is well connected to the world markets (Ioris, 2013). There are also a significant number of hydroelectric power stations on the tributaries of the Cuiabá River, including the Manso Dam, which have impacted on the natural flow regime (Zeilhofer & Moura, 2009).

The paper aims to study values around water governance covering two dimensions: On the one hand, it is important to understand how different stakeholder groups *assign* values to water resources in the area. This approach to values is commonly applied in human geography (see e.g. Ioris, 2011). On the other hand, the paper also investigates which values serve as *guiding principles* to actors in the water sector, i.e. it tries to understand the broader motivations and worldviews behind the actions and perceptions of different groups within the water sector. This perspective has been adopted from social and environmental psychology (see e.g. Glenk & Fischer, 2010), thus contributing to an interdisciplinary perspective on values and governance.

The research is based on participant observation and semi-structured interviews to representatives of different stakeholder groups in the Cuiabá River Basin, including government and NGO representatives, local researchers, the private sector, fishermen, domestic water users, and the tourism sector. These interviews have been conducted between October and December 2014 and serve to provide an in-depth understanding of values of water and how these are inserted into governance.

While the research has not been concluded at the time of writing this abstract, it is hypothesised that certain values of water are disproportionately represented in water governance, given the different levels of political influence that different stakeholder groups

have. The Cuiabá River Basin displays a highly polarised water user landscape in which subsistence farmers coexist with modern large-scale soybean producers, traditional fishing with sports fishing and tourism from Brazil's highly developed South-East, electricity production with environmental protection. This diversity produces an often equally polarised evaluation of a range of water governance issues, such as uneven access to water and sanitation, changes to water flows, decline in fish, water pollution, and the potential introduction of water charges. The evaluation of such governance issues in turn can be traced back to different values as guiding principles and different values assigned to water resources.

Water has been valued as a source of economic development, of livelihoods, of biodiversity, and of cultural traditions, to name just a few examples of fundamental approaches towards water valuation in the Cuiabá River Basin. Stakeholder's guiding principles equally vary, ranging from the desire to *conserve* the region's biodiversity by keeping traditional farming techniques alive, to a strong desire for *change*, to be achieved by a substantial modernisation of the local economy. However, positions are not strictly attached to specific sectors, but vary greatly within sectors, too.

While water values may be perceived as a somewhat fuzzy concept, understanding multiple dimensions of water values will help to design more effective and socially accepted water governance instruments. Mato Grosso has only recently introduced legislation and regulation of water resources; studying the different values of stakeholders at this particular point of time is thus useful to understand the context for the potential introduction of new water governance instruments, such as bulk water charges, river basin committees, and payments for ecosystem services.

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