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Micro-level crafting of institutions within integrated catchment management: Early lessons of adaptive governance from a catchment-based approach case study in England

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ABSTRACT

There has been considerable interest and discussion surrounding institutional design and governance in the areas of planning, political studies and policy development and more recently natural resource management. Within England, like much of Europe, an integrated catchment management, called the catchment-based approach (CaBA), has been developed when implementing the European Union (EU) Water Framework Directive (WFD). This is seen as both a driver for stricter standards for water quality and ecological status in water course and encouraging the active involvement of stakeholders and communities in both planning and action. This paper analyses institutional design at the local level from the perspective of two concepts, namely institutional governance and social–ecological systems. The intension is to highlight synergies between the two concepts. Through this a new aspect of institutional design is revealed, the micro-level or 'crafting' of institutions by local actors. The paper identifies criteria that are associated with this aspect and analyses an integrated catchment case study in England. The paper concludes that the current policy approach in England, and potentially elsewhere in Europe, offers potential for the 'crafting' of institutions and at the local social–ecological systems scale this has potential for positive benefits such as great understanding and locally effective governance. Both would assist in achieving policy objectives, such as those of the WFD. The case study utilised an effective participatory approach that was, according to the criteria, robust and transferable in developing an adaptive governance approach.

1. Introduction

There has been considerable change in the past 20 years regarding the governance of natural resources, the way institutions view those resources and the diversity of these arrangements (Ostrom, 2005, 2011). The management of natural resources and the environment was highlighted at the UN Rio Earth Summit during 1992 and led to a focus on sustainability issues for the next 20 years. More recently, the Millennium Ecosystem Assessment (MEA) has indicated that two thirds of the world's resources are being depleted by human activity (MEA, 2005). This has led many to ask what needs to change, and this mostly hinges around adjusting systems to incorporate new environmental issues, making the right decisions and ensuring they are implemented

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(Anderies and Jansson, 2013). All three of these aspects involve changing institutions, either adjusting or expanding existing ones or creating new ones (Thiel et al., 2015).

The aim of this paper is to bring together institutional design and social–ecological systems (SES) perspectives around the current discussions on and changes in governance within integrated catchment management policies across Europe. The literature reviewed in the paper suggests that the connection between SES, in the shape of co-management (Carlsson and Berkes, 2005) and the ecosystem approach (Waylen et al., 2014), and institutional design, especially micro-level or 'crafting' of institutions (Alexander, 2006; Thiel et al., 2015), is strong. However, the SES literature assumes an ability of institutions to change or the need for change. Therefore there is a mutual synergy in extending the institutional design literature with the concept of SES. The benefit would be to increase understanding of the micro-level or 'crafting' of institutions and potentially be able to assess the effectiveness of such an approach where it takes place. One pilot catchment is examined in detail using an action research approach (Zikos and Thiel, 2013) where an integrated bottom-up participatory framework is being trialled.

The move away from a sector or issue-based approach (e.g. flooding, water quality and agriculture) towards a place-based approach (e.g. catchment or sub-catchment) has been long predicted. Lowe and Ward (2007) saw this as a part of Government policy in the mid-2000s and a new way forward for rural policy. This is also true of developments in spatial planning (Scott et al., 2014) and the rise in policy based around the ecosystem approach (MEA 2005). From an institutional perspective Gualini (2001) also suggests that the move towards a 'collective framing' is required to make sense of a complex situation. This suits a spatial or place-based approach and involves some reflective thinking rather than an issue-driven process. Alexander (2006) suggests that this reflective processing is a key driver for institutional change.

The management of water within river catchments has to some extent been at the forefront of the change from sector to place-based approaches within developed countries (Bissett et al., 2009; Marshall et al., 2010). As Rijke et al. (2012a) outline developed countries have focussed on civil engineering and 'controlling nature' with a range of structures and interventions concerning flood management and fluvial flow. Nevertheless this sectoral based approach covering flooding, drinking water, abstraction and irrigation quality is now being replaced by 'an integrated approach that covers many disciplines' such as spatial planning, ecology, hydrology and water management (Rijke et al., 2012a, p. 369). Increased integration around the governance of water resources has coincided with a heightened awareness of the various goods and services that ecosystems provide society (Fish, 2011). Key elements include the provision of clean water and the regulation of water flow and these were identified in the MEA and the UK by the National Ecosystem Assessment (NEA) (NEA, 2012, 2014). The UK NEA also highlighted the need for a systems approach, which has in turn influenced the development of the catchment-based Approach (CaBA) (EA 2012). Both are frameworks that reveal the shift towards a territorial or catchment-based approach, which seeks to recognise the links between the ecosystems and society (MEA, 2005).

The Environment Agency (EA), the government agency in England which implements national policy on issues concerning rivers, flooding, and pollution, has been developing proposals to take forward the Government's commitment to integrated catchment management. The approach is similar to that of 'Room for the River' in the Netherlands (Rijke et al., 2012a). Phase one of CaBA was to introduce pilot projects in 25 catchments across England during 2011 and 2012 as a 'proof of concept' for a more integrated and participatory approach at the catchment scale (Catchment Change Management Hub, 2013). Previous participatory work by the EA had been around issues, such as flooding or fish stocks, rather than integrated at a spatial scale. The prime driver behind this initiative is the European Union (EU) Water Framework Directive (WFD) and its requirement that all water course will reach 'good ecological status' by a particular date, for the UK this is 2027. WFD provides a statutory framework and timetable for making improvements to the whole water environment and introduces new stricter standards for water quality and ecology. However, the Directive also contains a specific objective that encourages the active involvement of stakeholders and communities in planning and action, a trend that is present in planning more generally (Healey, 1998). In this sense there is the potential for institutional change in the way that catchments are governed and understood by a wider range of stakeholders than has hitherto been the case.

2. Institutional design and integrated catchment management

According to Alexander (2005), institutional design emerged from debates across planning theory and institutional analysis and he defines it as

> 'the devising and realization of rules, procedures, and organizational structures that will enable and constrain behavior and action so as to accord with held values, achieve desired objectives, or execute given tasks' (Alexander, 2005: 213)

As Healey (1998) notes planning had already recognised the value of engaging a wider range of stakeholders and interest groups and Alexander (2005) notes the impact that these have on institutions. This is further developed in spatial planning (Scott et al., 2014), water resource management (Kidd and Shaw, 2007), integrated catchment management (Blackstock et al., 2014) and within other areas focusing on institutional change (Anderies and Jansson, 2013). However the approach of Alexander (2005, 2006) is valuable for the development of institutions associated with a multi-scale challenge such as integrated catchment management as it attempts to break down the variations within institutional design. Alexander does this by identifying three scales (macro, meso and micro) and by highlighting the variations across three key terms in associated with institutional design; namely governance, coordination and agency (2005:218). Governance operates at the *macro-level* and includes all relevant 'processes of regulation coordination and control' and therefore spread across a number of disciplines (Alexander, 2006, p. 9). Within the UK a