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It takes more than a village: the challenges of co-management in Uganda's fishery and forestry sectors

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Decentralisation policies in least developed countries have emerged in response to failed centralised natural resource governance programmes because high-value natural resources are distributed unequally, with central governments often reaping more than local-level users. Current natural resource governance institutions have been created to remedy the problems that central governments formerly posed. Here, we argue that Uganda's forestry and fishery resources are biologically diverse and thus amenable to current decentralised management programmes, provided that there is compromise between market values and local cultural and subsistence values and uses. We observe, however, Uganda's current institutional arrangement favours the former over the latter and determine that successful natural resource decentralisation requires strengthening local-level natural resource institutions with increased fiscal flow, enforcement, monitoring and judicial powers. A strong and reliable partnership between local-level resource users and the central government is necessary for this to occur.

Keywords: decentralisation; Uganda; Lake Victoria; institutions; forest; fish

Introduction

Over the past 200 years, approaches to natural resource management in many least developed countries (LDCs) have transformed from locally devised indigenous self-governance, to state-centred governance, to current notions of shared responsibilities between local-level users and central government (Agrawal and Lemos 2007). In this article, we review current governance approaches used to manage forest and fishery resources in Uganda. We argue that the relationship between central government and local-level users in forest and fishery resource management is unbalanced, and thus ineffective. Despite attempts at decentralising management of forest and fishery resources in Uganda, market value takes priority over local-level development and resource sustainability. We argue that successful decentralisation of *any* natural resource requires an active and compromising central government that will empower local communities by sharing fiscal benefits and by legitimating judicial power. Biologically diverse resources need strong institutions at multiple government scales (1) to overcome high market value as the dominant influence on resource management and (2) to consider subsistence and ecological values, which benefit the development and livelihood of local-level users and increase the sustainability of the resource.

Our argument is guided by the concept of social-ecological systems, which acknowledges that natural resources are embedded in complex interactions occurring between ecological (biological) and human (social and political) systems (Ostrom 2009). This concept recognises that social and political institutions (formal and informal organisations, rules, regulations, sanctions and taboos

and customs) matter too. Institutions are affected by their biophysical, infrastructural, demographic, economic and socio-political contexts (see Bene 2003; Ostrom 2005; Agrawal and Chhatre 2006; Janssen et al. 2007). Our analysis of data collected in both the forest and fishery sectors of Uganda and of the literature emphasises the role of market pressures and socio-cultural aspects of governance to explain variations in resource governance and resource conditions (see also Agrawal and Gibson 1999; Agrawal 2006; Nunan 2006) in Uganda.

The case for decentralisation

Past natural resource management strategies in LDCs often failed because centralised policies were intrusive yet unable to enforce the underlying rules, and frequently interfered with local institutions that managed natural resources (Gibson et al. 2000; Agrawal 2003; Kajembe et al. 2003; Ribot et al. 2006; Larson and Soto 2008). Furthermore, such management policies have the potential to be biased in favour of market-based preferences while downplaying ecosystem health or resource sustainability (Ben-Yami 2007; Nelson and Agrawal 2008), which can lead to the deterioration of the resource and undermine development of local communities (e.g. see Harris 1999; Bavington 2010).

Decentralisation is defined as any act of formally ceding powers from a central government to lower-level institutions and actors within a political-administrative and territorial hierarchy (Agrawal and Ribot 1999). *Democratic decentralisation* refers to power being transferred to lower-level governments, whereby officials are elected by and accountable to those they represent (Ribot 2002).

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Devolution broadens power transfer to include non-governmental institutions such as community-based organisations (CBOs). Agrawal and Lemos (2007) categorise decentralisation and its variants as a form of 'hybrid governance', in which there is no one lead authority but rather a partnership between local, non-government, state or market organisations. Contemporary decentralisation strategies, they argue, have focused particularly on institutional arrangements that can motivate individuals at the local level to cooperate, while minimising the risk of powerful individuals co-opting the process. Haley and Clayton (2003) argue, however, that effective hierarchical organisation is still a prerequisite for bringing about effective solutions, particularly where central government change (e.g. policy or fiscal change) is required. Uganda's forest and fish co-management programmes exemplify a situation in which the central government is a significant stakeholder and thus continues to play an important role in the management of these resources.

Kaimowitz and Ribot (2002) argue that natural resources are viable candidates for decentralised management for several reasons. First, natural resources are utilised for subsistence, livelihood and income, at both local and national levels; they are 'wealth generators'. Natural resources that are wealth generators create incentives for those who benefit directly from the resource to manage it sustainably, whereas social services and infrastructure, or 'financial sinks', result in unregulated use. Second, while social services and infrastructure can be designed at a country-wide scale, natural resources are location-specific, and include variations in biophysical characteristics: species types, growth rates, breeding and fruiting cycles, and harvest times. Kaimowitz and Ribot thus argue that these characteristics make natural resources 'less amenable to central standardisation'.

Although natural resources, generally, are responsive to decentralisation, forests and fish are different biophysically and thus have different transaction costs, or social, economic and political costs related to undertaking their management (Nielsen 2003). In Uganda, transaction costs are lower for forest management than fishery management. Given that forests have distinct borders, there is a greater potential for all users of a particular forest to interact with one another to establish rules and conduct enforcement. In contrast, it is more complicated to physically delineate distinct management areas on a lake, and the size of Lake Victoria is too large to have all users meet. There must be a greater effort, or higher level of coordination for effective management to take place. Without an effective mechanism to coordinate management (resulting in larger transaction costs), inefficiencies emerge and often lead to tragedy of the commons-type Hardin (1968) harvesting of the resource. It is within this context of transaction costs that the 'achievable scope' against which the failures of the fishery and forestry sector should be judged.

Despite the importance of transaction costs, Ostrom (2007) posits that social-ecological problems are rarely due to a single cause and that the imposition of 'standard

optimal solutions' is the problem rather than the solution. To determine the success of a decentralisation policy, the relationship between the users and the resource, and the institutional arrangements that incentivise resource use must also be assessed. Institutional arrangements that include local communities in natural resource management are crucial given that many people living in LDCs are knowledgeable about and directly dependent on locally harvested natural resources for their livelihoods and subsistence needs, and for other ecosystem functions (Wilson et al. 1999; Bene 2003; Ostrom 2005; Agrawal and Chhatre 2006; Janssen et al. 2007). Active citizen participation can enhance the input from those affected by the challenges of natural resource governance (Lemos and Agrawal 2006; Nunan 2006). Recognition of and reliance on institutions – as well as the ways in which several institutions interact, and in some cases 'nest' – can promote management success and ensure the proper transfer of power (Eggertson 1996; Ostrom 2005). In other words, *the central government still has a crucial role in local-level natural resource management*. The challenges, however, of defining and implementing decentralised management, and the unwillingness or inability of central governments to relinquish control (Wunsch 2001; Ribot et al. 2006) to lower-level actors, has often hindered the integration of community participation and rendered the management approach paternalistic and quasi-colonial (Twyman 1998).

While there are plenty of examples of failed or failing decentralised natural resource management regimes, there are also examples of successful, or at least partially successful, regimes (e.g. Gibson et al. 2000; Pomeroy 2001, p. 124–129). Successful decentralisation must include the transfer of sufficient and appropriate powers, accountable representation (Ribot 2002) and an understanding of the extent to which fiscal, administrative and political control is transferred (Schneider 2003). Datta and Varalakshmi (1999) find that a forest co-management programme in India is sustainable and successful because locals have developed institutions to generate and fairly distribute funds. Hayes and Persha (2010) suggest that successful resource management depends on

institutional arrangements that (1) establish local residential rulemaking autonomy, (2) facilitate the flow of external financial and institutional assistance for monitoring and enforcement of local rules, and (3) buffer residents and their respective local institutions from more powerful, and at times corrupt, actors and agencies involved in forest exploitation.

When these conditions are not met, they argue, external non-government organisations (NGOs) can help support local institutions that are nested within larger central government systems.

Our analysis of Uganda's decentralised management programme of its forest and fishery resources reveals the (1) failure to transfer an appropriate amount of power to local-level users or representatives of those users,

(2) inefficient collection of revenue at the local level due to higher political-level authorities superseding this function, (3) inefficient distribution of revenue collected by higher political authorities returned to the local communities and local-level resource management entities for development and further resource management and (4) prioritisation of market value of natural resources over social development at the community level and sustainable management of the resource. The current institutional arrangements that govern Uganda's forestry and fishery resources allow for maximum resource extraction to take precedence over ecosystem health and resource sustainability and longevity.

Development and decentralisation in post-independence Uganda

Post-colonial development and natural resource management in East Africa is heavily influenced by international aid agencies, such as the World Bank and International Monetary Fund (IMF) (Stein 2008). During the 1980s and 1990s, the World Bank and IMF instituted structural adjustment policies (SAPs) that sought to overcome development-limiting conditions in the market that LDCs encounter. In order to procure loans, SAPs require that LDCs adjust their economies through stabilisation, rehabilitation, privatisation, deregulation, liberalisation and strict economy (Owusu 1998). The policies were designed to *reduce the role of government* by replacing state control with market incentives and by requiring political and economic reforms before loans from the IMF and the World Bank are released to the target country. SAPs, however, have been severely criticised for their failure to consider politics, demography and institutions (Hauser 1999; Platteau 2000; Mwenda and Tangri 2005) and for their rationale that says those who consume services are those who should pay, which in LDCs often excludes the poor because of high costs (Stein 2008). SAPs have also been criticised for their failure to recognise LDCs ill-prepared state of development, a problem caused, in part, by the failure of colonial systems to carry over to independent states (Bauer 1972). Thus, the ability, or willingness, of the central government to empower local resource management is embedded in post-colonial international 'development' programmes.

Uganda's fisheries and forestry resources share a common history rooted in Uganda's development trajectory from British protectorate to independent country to a 'darling' of the donor community (Cargill 2004). Although forest and fishery resources are biologically diverse, both types of resources were relied upon historically for subsistence, are wealth generators for the local user and the state and have cultural importance. The national-level government's natural resource management policies, therefore, include contemporary wording that suggests sustainable management to benefit the local communities (NFA 2008; Lake Victoria Fisheries Organization (LVFO) 2011). Through the two case studies below, however, we demonstrate that market value of natural resources (ultimately

beneficial to the central government) continues to take precedence over these natural resources' historical values and importance to local-level users, discourages sustainable resource harvest and inhibits development at the local level. As a result, devolution of power to the local-level fish and forestry management institutions is unsuccessful.

Case studies: decentralisation of natural resource governance in Uganda

Uganda's Decentralisation Statute of 1993 and Local Government Act of 1997 promised to cede power to local-level officials and resource users. The constitution calls for reduced central government control and increased local discretionary powers, including the creation of new local laws, revenue collection and the appointment of committees to carry out local-level priorities (Mugabi 2004). Despite multiple legislative efforts, however, the central government continues to suppress local capacity in several ways (Mugabi 2004): (1) local-level resource management institutions and governments are funded by the central government, but grants must be used in ways deemed appropriate by the grantor, not the grantee; (2) local revenue collection is uneven, sporadic and unreliable, especially in rural areas and is often undermined by higher-level governments collecting revenue first at the local level; (3) ineffective distribution to the local-level management institutions, of revenue collected – by the central government – through formal export lines; (4) external donor support often has the same restrictions that central government grants require; and (5) the judicial system is weak when pertaining to formal laws and rules established to protect the natural resource, making local community and government enforcement efforts impotent.

Case I: Uganda's forestry sector

Centralised forestry management was established by the British colonialists in 1898 under the Forestry Service, which became the Forest Department in 1927. Large swathes of land were declared Crown land via the Bunyoro Agreement of 1933, while smaller land blocks were kept private and were owned and controlled by their respective kingdoms. Crown land included forest vegetation, savannah grassland and woodland areas, the use of which required a permit (Hamilton 1984). In 1945, decentralised forest management was instituted via the creation of Local Forest Reserves (Turyahabwe et al. 2007). A 1948 statement by the governor of Uganda announced the main goal of the Forest Department: 'to foster, by education and propaganda, a real understanding among the people of Uganda of the value of forest to them and their descendants' (Forest policy . . . 1948). This devolution of management was limited, however, to 'minor reserves of purely local significance' (Forest policy . . . 1948) that were expected 'not to detract from the value of Central Forest Reserves', which still belonged to the colonial government (Hamilton 1984). Moreover, although the colonial

government's Forest Department encouraged tree planting and the establishment of local tree plantations as early as 1930 (Hamilton 1984), the exotic and water and nutrient depleting *Eucalyptus* was highly favoured (Karani 1972). This choice suggests economic, rather than ecological, priorities.

Decentralisation continued after independence until 1966, when governance structures and management policy changed drastically (Mugabi 2004). The Forest Act of 1967 revoked local, decentralised power over forest reserves (Hamilton 1984; Turyahabwe et al. 2007). Then, as a result of country-wide political chaos during the 1970s, corruption within the Forest Department skyrocketed, widespread mistrust of the entire government ensued, and forest cover was lost (Hamilton 1984). With rampant local encroachment on government-owned forested land, provision of central government extension services (e.g. agricultural and livelihood support) was almost impossible, given the mistrust of the centralised management regime. Further, the planting of exotic species such as *Pinus*, *Cupressus* and *Eucalyptus grandis* continued to be encouraged by the Forest Department (Struhsaker 1987). Thus, while indeed reducing the pressure on highland forest, centrally imposed management policies aided in diminishing hundreds of indigenous species.

In 1998, the Forest Department became the National Forestry Authority (NFA) and the District Forest Services (DFS). Policies emerging after the split decreed that sustainable resource use and collaborative forest management between the NFA, local governments (DFS) and local communities were important priorities (National Forestry Policy of 2001, National Forest Plan of 2001, National Forestry and Tree Planting Act of 2003). Currently, 24% of the total land area (4.9 million ha) in Uganda is forested (MWLE 2002). About 70% of Uganda's forested area is private or customary land and contains the largest part of tropical highland forest (38%). Although this suggests that the majority of forests are in 'the people's hands', very few individuals actually hold legal land titles and are thus susceptible to tenure security issues/removal (Place 1995; van den Brink et al. 2006). Perhaps due to this tenure insecurity, conversion to agriculture happens at a higher rate on customary land than on public land (Place and Otsuka 2002). The remaining 30% is considered Permanent Forest Estate (PFE), primarily managed by NFA, with the exception of 0.3% (5000 ha composed of small fragments) and is considered Local Forest Reserve and managed by the local DFS (Banana and Gombya-Ssembajjwe 2000; Kayanja and Byarugaba 2001).

The PFE is 'held in trust' by the government for the people of Uganda. Furthermore, PFE forest reserves are further demarcated into strict nature reserves (20%), low-impact buffer zones (30%) and areas managed for sustainable extraction of forest products (50%) (Howard et al. 2000) suggesting that the government is *still* managing 'the people's' forests for economic gains, rather than with regard to biological characteristics of forested land and the socio-economic needs of resource-dependent peoples.

As a result of both colonial control and a period of 'post-independence governmental adjustment', decreased incentives and increased risks of punitive measures have led to an overall lack of local participation in resource management (Banana and Gombya-Ssembajjwe 2000). While there have been many attempts at collaborative forest management among users, local governments, NGOs, CBOs and the central government, results have been consistently disappointing. Although partnerships enhance local management potential, financial and legal means to implement local resource extraction policies are lacking (Turyahabwe et al. 2006). There are weak relationships between local institutions and centrally devised policy (Turyahabwe et al. 2007; Hartter and Ryan 2010) and between people's perceptions and actual uses of forest resources (Watkins 2009a, 2009b). In regard to perceptions and uses, people, particularly women, did not know the full extent of their user rights: not only did many wrongly believe firewood collection was illegal, they allegedly endured harassment by forestry officials for collecting it (Watkins 2009b). These findings support Ribot et al.'s (2006) conclusion that central governments in multiple LDCs 'erect imaginative obstacles' in front of decentralised institutions, such that downward accountability and local-level discretionary power are lacking.

Importantly, this period of intense vacillation between decentralisation and recentralisation of forest management policies coincides with World Bank and IMF investments marked by particularly strict conditionalities (1992–1998) (Banana et al. 2007). Years of policies that claimed to increase local control, yet reduced local funding, have no doubt impeded the effectiveness of local government forest services, let alone village-level management capacity. The NFA lacks the monetary means and manpower to monitor Uganda's forests effectively as many are patchy and scattered. Further, political will is lacking and the chain of command between the NFA and DFS is confusing: District Forest Officers (DFOs) are central government employees, yet local government council members supervise them. On the other hand, Forest Rangers and Forest Guards who provide technical support to the DFOs are employees of District Local Councils (Banana and Gombya-Ssembajjwe 2000). The World Bank's involvement in the forestry sector remains contentious, given its lack of attention to poverty, inequity, local capacity and issues of control and ownership of, and access to, forest resources (Seymour and Dubash 2000; Francis and James 2003; Stein 2008).

Although the NFA recognises that policing forests is an ineffective management strategy and that the inclusion of local users can increase sustainable resource use (MWLE 2001), less than 1% of the total tree-covered area in Uganda is managed under collaborative initiatives between the central government and communities (NFA 2008). While 40% of profits made from revenues, licences and permits generated from the sale of Central Forest products (0.3% of the PFE) is given back to local government, it is used in the general district budget rather than specifically on

forest management activities (e.g. monitoring and enforcement), and even then it makes up only 10% (Banana and Gombya-Ssembajjwe 2000). The other 90% of local government budget comes from NGOs, which, although could act as an incentive for local governments to participate in collaborative management, is still unable to enact policy change at the central government level (Haley and Clayton 2003; Turyahabwe et al. 2007). Several studies have documented the importance, yet dearth, of forest use enforcement in Uganda (Banana and Gombya-Ssembajjwe 2000; Turyahabwe and Banana 2008).

According to Turyahabwe et al. (2007), collaborative forest management is limited in several ways. First, local organisations often lack technical and financial capacity to fully conduct management activities; confusion exists over who owns what type of land, which leads to disinterest in investing in tree planting and overall land management. Second, corruption and disrespect for formal laws undermine honest and legal attempts at collaborative management (Turyahabwe et al. 2007). Finally, the variety of forest benefits that people are concerned about (e.g. household consumable resources like firewood and water, economically advantageous resources like timber and ecological benefits such as wildlife habitat and climate control mechanisms) may hinder group consensus on the best forest management approach. All of these inefficiencies point to the lack of attention given to locale-specific needs and the local institutions that could enhance forest management – a task which otherwise is too large and diffuse for what is still essentially a centralised management approach.

While stakeholder linkages presumably may stimulate the movement of money to the local level, NGOs and CBOs do not have legal power to control forest-related activities. These responsibilities lie with the DFS, which is charged with the heavy burden of linking the legislative desires of the central government with the subsistence and livelihood requirements of local users (Turyahabwe et al. 2007). The DFS, which, again, legally manages only 5000 ha (0.3%) of local forest reserves, is also responsible for the needs of, or at least seen as a liaison to the central government for, local-level users. Watkins (2009b) found one DFO defeated: ‘I feel useless. I have a cell phone but no motorcycle [with which to get to the villages] . . . even if I did go there, what could I do?’ This anecdote emphasises the inability of the central government to facilitate local government capacity to manage forests and enforce policies.

Further evidence of the central government’s priorities on forest management can be found in the NFA mission, which purports ‘to contribute to a sufficiently forested, ecologically stable and economically prosperous Uganda’ and ‘to manage Central Forest Reserves on a sustainable basis and to supply high-quality forestry-related products and services to government, local communities and the private sector’ (NFA 2008). People use many types of trees (Watkins (2009a) documents over 20 types) for firewood, including exotic, indigenous, forest, woodland and plantation species (Tabuti et al. 2003; Watkins 2009a). To achieve

the latter goal, however, the NFA continues to focus on a small set of species that are market-favoured – mostly eucalyptus and pine (Uganda Policy, 2002, cited in MWLE (2009)).

In summary, forest management continues to be spread thinly across Uganda, leading to a disparate relationship between local and central governmental institutions and resulting in a lack of management in support of basic needs for livelihoods. Despite the necessary and ubiquitous need for firewood or charcoal at a local level, the central government has remained unable or unwilling to share financial and judicial control of forests. As Banana and Gombya-Ssembajjwe (2000; p. 17) stress, after

four decades of minimal involvement of local institutions and communities in forest management . . . it is going to take a long time and a lot of effort for . . . local communities to organise locally, develop the rules, develop a sense of legitimacy, and put in place a mechanism to monitor and enforce forest rules.

Case II: Uganda’s Lake Victoria fishery sector

Lake Victoria is the second largest freshwater lake by surface area in the world, and is the largest freshwater fishery in Africa. A multi-use resource, it is known for its highly productive fishery that employs 3 million people in Uganda, Kenya and Tanzania; produces an annual catch around 500,000 metric tonnes; contributes US\$600 million to the East African Community annually (Njiru et al. 2008); and provides food security for over 20 million people (LVFO 2011). Like many other freshwater systems around the world, Lake Victoria faces numerous threats, including environmental degradation, introduction of exotic species, eutrophication and over-fishing. Recent stock assessments indicate that unsustainable fishing practices have caused a serious decline of fish populations (Mkumbo et al. 2007). Exacerbating these stresses is a high human migration rate into many of the basin’s cities (~3% per year; Njiru et al. 2006) as a result of erratic rains, poor soils, crop failures and high unemployment outside of the basin. This migration threatens the integrity of Lake Victoria and other water-scarce areas of the world where populations are beginning to lose access to clean, freshwater resources.

The Lake Victoria fishery has been a part of Uganda’s economic system for centuries, mainly as a local producer of a tradable commodity and of a major source of protein. In the 1950s, the commodity fishery began to grow and it continued to develop well into independence (Awange and Ong’ang’a 2006). In the late 1950s, the colonial government introduced the Nile perch (*Lates niloticus*) in the hope of making the Lake Victoria fishery an economically powerful export industry (Mkumbo and Mlaponi 2007). Lake Victoria’s Nile perch populations reached commercial viability in the late 1970s, leading to fish processing plant development in the 1980s, which allowed increased exports

of Nile perch (World Trade Organization 2006) throughout the world, including to Israel, Japan, Australia, Hong Kong, Singapore and the United States, with the European Union accounting for up to 60% of fish exports (Awange and Ong'ang'a 2006). Exports of Nile perch have risen to the second largest export earner, second only to coffee, in Uganda (2004 and 2005 data (Uganda Export Promotion Board 2006)).

The introduction of this top predator invasive species, however, altered the Lake Victoria ecosystems upon which subsistence fishermen and the export fishery rely. This is evidenced by the decline of the endemic haplochromine (cichlid) fishes. These species constituted 80% of the estimated catch in the 1950s and 1960s but became less than 10% of the catch by 1987 as many of the haplochromines became extinct (Witte et al. 2007) or regionally extirpated within Lake Victoria. During that same period, Nile perch catches increased from non-recordable catches to 60–80% of total catches (Mkumbo and Mlaponi 2007). The economic benefits that the colonial government hoped the Nile perch fishery would provide included an increase in livelihood for many local fishermen and revenue for the state. The immigration of fishermen from outside the basin to the lake, promulgated by the promise of a share in the riches of the Nile perch fishery, is another indicator of the economic success of the fishery. This immigration has, unfortunately, created exploitative extraction practices that have greatly stressed the fish stocks, and the Nile perch has caused a major ecological shift in the native ecology of Lake Victoria (see Aquatic Ecosystem Health and Management Society 2007). Further, although beneficial to the country's foreign direct investment and gross domestic product, the financial outcome of the fishery disproportionately benefits the national-level government over the local-level fishing communities through higher returns on value added to the fish product up the commodity chain. The financial inequality is also caused by the inadequate return of financial support of the local-level management institutions by the national government. The government, in this case, does not have an incentive to return funds from the fishery back into fishery management because the perception is that the local-level communities are managing the fishery. It is this perception, however, that is creating inefficiencies on the effective management of the fishery, where inadequate commitment of finances or judicial power is given to local-level management institutions. Without proper funding or judicial power, the local-level management institutions lose legitimacy and the ability to effectively function. The livelihoods of those who depend on the fishery suffer as ineffective management causes a decline of the fish stocks and therefore the wealth generated from the fishery.

Prior to the late 1990s, fisheries management on Lake Victoria was centralised, determined on a country-by-country basis, with each country implementing separate and often conflicting fishing rules, and included little or no community participation (Ogwang et al. 2009). Extensive research suggests that this approach failed to sustain the

fishery for those who depend on the resource for their livelihood, which created a distrust of the central government and of centralised fisheries management (Abila et al. 2006; Mkumbo 2006; van der Knaap and Ligetvoet 2006). This distrust, in addition to poor enforcement by the central government, led to a culture of illegal fishing, resulting in over-fishing, use of illegal gear and harvesting under-sized fish (Ebong et al. 2003). Fishing was pursued in a 'tragedy of the commons' manner that has contributed to exploitation at more than twice the sustainable level (Hecky 2003), devastating the resource and subsequently diminishing the livelihoods of those who depend on it most.

Acknowledging the dire state of the fish stocks of Lake Victoria and to address other factors that affect the lake, including increasing poverty among those dependent on it, Uganda, Kenya and Tanzania developed national efforts to address common property fisheries problems. These efforts have been funded and influenced largely by the World Bank, including US\$77 million for fisheries management on Lake Victoria, of which the government of Uganda received almost US\$30 million to support its involvement in the first phase of the Lake Victoria Environmental Management Project, which includes establishment of a fisheries management programme for the lake (The World Bank 2006).

With the financial assistance of the World Bank, in 1997 the three countries created the LVFO – the fisheries management arm of the East African Community – to coordinate management efforts around the lake. Under its umbrella, the fisheries department of each country, fisheries research institutes and other organisations have collaborated to manage the fisheries. In particular, these efforts include the development of institutions that include *both* the central government and communities (co-management) in an attempt to avoid the shortcomings of decentralisation seen in past social and infrastructural programmes (The World Bank 1996).

To manage the fishery, Beach Management Units (BMUs) were created at pre-existing fish landing sites (Department of Fisheries Resources 2003). The BMUs are community-run governing bodies that manage the fishery and share policy development, enforcement and research duties with each state's fisheries department. The BMUs enforce the fishing rules established for the lake, serve as data collection points for monitoring and increase community members' capacity to manage their fishing profits (Ebong et al. 2003). The BMUs were created to standardise the rules of fisheries extraction throughout Lake Victoria, such that illegal practices are reduced and fish stocks remain sustainable. The LVFO and BMUs are designed to transcend resource issues across national borders and to overcome the differences in fisheries management that come with varying degrees of decentralisation among the three governments. The BMUs attempt to reduce constant external enforcement by the central government and to internalise patterns of behaviour with roles, rules, regulations and goals that are created and clearly defined by communities (Stein 2008).

The establishment of a decentralised, co-managed fishery should then, in theory, create an equitable climate for all stakeholders (specifically the local communities), and improve capacity for functioning as a sustainable management system. Nevertheless, illegal fishing has been observed around the lake (Abila et al. 2005, 2006; Njiru et al. 2006, 2008; personal observation). The reasons for this governance failure are similar to those in the forestry sector: decentralisation requires a downward movement of not only political power, including enforcement and monitoring, but of revenue. The Government of Uganda – and the other Lake Victoria states – has failed to provide enough money to the already limited staff of the fisheries departments. This shortfall has caused a two-pronged problem regarding the fishery: (1) a lack of enforcement equipment (e.g. boats, engines and fuel) needed for patrolling by the communities and (2) weak incentives for fisheries officers not to take bribes from those fishing illegally, which in turn makes illegal fishing profitable (Lawrence, unpublished data; forthcoming). Further, the weak devolution of power and financial resources to fishing community BMUs does not allow the BMUs to effectively execute their programmes, even though they were relegated to conduct the majority of fisheries management activities. National fisheries officers frequently let offenders go, which further undermines BMU power and often renders them financially and politically powerless (Lawrence, unpublished data; forthcoming).

The failure to define clearly what co-management on Lake Victoria means, in terms of the specific roles of each level of government and of the community, is partially to blame for the inefficacy of governance. With communities charged with implementing management activities, and thus given ‘power’ to manage ‘their’ fisheries resource, the central government can claim effective implementation of decentralised policies. Co-management, however, requires that each partner has a role in resource management. While the Nile perch fishery on Lake Victoria provides the three countries with about US\$350 million in export earning per year (Ogwang et al. 2009) (not including the dagaa and Nile tilapia fisheries, both of which also provide substantial income), evidence of financial returns from the central government to the BMUs is notably lacking. A study conducted from 2009 to 2010 observed inadequate funding for the BMU committees to conduct enforcement patrols (Lawrence, unpublished data; forthcoming). Data suggest that the national-level government inadequately finances the BMUs, nor allows sufficient revenue collection by the BMUs to conduct their operations. The LVFO’s annual budget, previously provided by international donors (ending in 2009), was US\$8 million, and thus management of Lake Victoria can easily be covered by revenue generated from each country through their Nile perch fishing industries alone.

In short, the Nile perch fishery produces enough money for the government of Uganda to provide sufficient support for fisheries management at the local level. The money, however, is not effectively moved from the central

government to the fisheries department (Lawrence, unpublished data; forthcoming). Further, community-level revenue collection is riddled with corruption, inefficiency and disempowerment (Keizire 2002; Lawrence, unpublished data; forthcoming). For example, BMU committee members are supposed to collect taxes and fines from fishing activities associated with their beach. These monies, however, are often collected by higher-level government officials, the police or a representative of one or the other. The amount of money that BMUs are given in return is usually not enough to purchase proper patrol and safety equipment or fuel (Lawrence, unpublished data; forthcoming). While the LVFO can suggest an effective governance process, it cannot direct resources from the national governments to the BMUs or to national-level fisheries departments.

The formal rules that are meant to foster legal fishing behaviour and allow fish stocks in Lake Victoria to regenerate are not being followed. The fisheries example, in which a theoretically sound management approach is failing, demonstrates the need to acknowledge context within a single resource sector. Further research must be conducted to understand how the market value traits of Nile perch alter the original intentions of fisheries management on Lake Victoria. Again, ‘simple blueprint policies do not work’ (Ostrom 2009) because markets, the lake itself and the outlook of governing institutions change in unpredictable ways, often making governance ineffective.

Discussion

The above case studies demonstrate Uganda’s management approach to fisheries and forest resources by various stakeholders – local users, local governments, the central government and NGOs. In both cases, the central government remains overwhelmingly in charge of monetary resources and policy development, and has failed to support local-level natural resource management institutions adequately.

Uganda’s central government has relinquished much of its management responsibility to local-level community organisations, which reduces its cost while still retaining revenues generated by these high-value resources sold abroad. Local-level organisations have the potential to be effective in managing these types of natural resources under various conditions. Uganda’s fisheries, however, have strong international markets, which makes effective management difficult because of over-fishing, lax enforcement and an influx of would-be fishermen seeking relief from poor economic conditions from outside the lake’s basin. As a result, management is challenging. In the case of forests, the state continues to perceive them as a potential source of economic prosperity, yet similar to the fishery, fiscal support for local-level management is lacking. In both the forest and fish industries, the products go through formal government export lines, and thus the national government benefits. The national government, therefore, has less incentive to invest in lower-level governing entities. Only when resources face depletion does

the national government work hard to sustain markets through increased management of resources, but often by recentralising administration.

Market pressures continue to influence how successful decentralisation can become. Lake Victoria's Nile perch fishery became a high-value, internationally important export requiring the need for a strong management system to govern multiple user groups. The failure of the co-management institution to curtail illegal fishing is, we argue, a result of inefficient execution of the management programme and *not* a weakness in a decentralised, co-management approach. Specifically, the central government failed to give the appropriate amount of financial support to lower levels of government and the communities, as evidenced by fisheries officers often having incentives to cheat the system, take bribes and release offenders, and by their inability to conduct their own patrols. The BMUs, therefore, are undermined authoritatively, which reduces their legitimacy in the eyes of fishermen (Ogwang et al. 2009). Financial support should result in policy-abiding officers that have enough equipment to patrol the lake and that do not provide incentives to undermine BMU activities.

Market pressures within the forestry sector, in contrast, are at sharp odds with household-level subsistence pressures (MWLE 2009). The failure to incorporate the vital role of fuelwood and charcoal at the household level, *for critical subsistence purposes only*, as well as the resources' link with subsistence agriculture practices, has profoundly weakened the relevancy and effectiveness of decentralised management plans. One persistent trend, in particular, has contributed to this failure. Although forestry export profits are low and subsistence use is high, exotic species are profitable. Thus, the central government refuses to allow local-level resource users to decide what species they want to plant, and planting exotics is credited as collaborative management. This trend is facilitated by two factors. One, the national government vacillates between centralised policy-making and enforcement and decentralised 'community-based' and collaborative management approaches, both of which can be favoured by the waxing or waning of international interest, a cycle that has complicated and hindered successful local-level forest management. Two, enforcement personnel are in short supply at the local level, especially given the diffuse and heterogeneous nature of the forestry resource. Decentralised forestry management appears weak as the national government retains too much control over resource management, contrary to recommended decentralised natural resource management approaches.

Following many calls for the incorporation of multiple causal factors (see Ostrom et al. 2002; Agrawal and Chhatre 2006; Janssen et al. 2007), our case studies suggest that decentralised management of Uganda's fishery and forestry sectors has been unsuccessful because financial resource and judiciary power sharing between local-level management institutions and the national government is inadequate and hostile relationships between locals, local

government and central government are prevalent. Blanket decentralisation policies, often instituted in the face of faulty centralised policies, provide neither financial nor institutional means for successful resource management at the local level.

Conclusion

Centralised management of natural resources in underdeveloped countries has largely failed in the past due to distrust of central governments by the people who depend on the resources for their livelihoods. Based on these results, natural resource management evolved to include local communities under the concept that ownership of the resource by those who extract that resource would lend local knowledge and reduce pressure on national government investment for support.

Although the success of decentralised management has not been conclusive (see Brooks et al. 2006; Larson and Soto 2008), we consider that the theoretical premise is strong, regardless of resource characteristics. Our case studies suggest that while Uganda's forestry and fishery sectors are distinct (e.g. transaction costs), given their shared history of colonial control, they both suffer from the same institutional weaknesses: the central government, although ostensibly participating in hybrid governance-type partnerships, has not allowed for equitable and sufficient power sharing (political or fiscal) (Datta and Varalakshmi 1999; Ribot 2002; Schneider 2003; Hayes and Persha 2010).

We demonstrate that decentralised management of high-value natural resources has created incentives for the central government to manage each resource for profit over limiting extraction for sustainability. The high value of Uganda's fishery and forest resources has led to the inadequate distribution of judicial power and financial resources to local communities managing them, thus making successful decentralised resource management difficult to achieve. The high value of natural resources create weaknesses – in an otherwise theoretically sound management approach – including (1) the inability of local communities to manage the resource because of outside pressures (e.g. increased number of users seeking livelihood gains) and (2) demands for higher gross domestic product by the national government resulting in little incentive to invest in resource management.

Although difficult, the solution to overcoming poor natural resource management in Uganda and meeting the objectives of the decentralised programmes enacted by Uganda's central government agencies includes the careful development of institutions that limit extractions, for the benefit of continuing cultural, subsistence and ecological values. Indeed, failure to manage based on sustaining the resource and providing for subsistence threatens future gains. The fishery and forestry sectors in Uganda illustrate how the success of decentralisation is dependent upon the extent that the national government empowers local users to manage their resources sustainably. The power

relationship between the national government and lower-level political entities in natural resource management is unbalanced, as evidenced by the lack of trust by the local-level communities of the national government in addressing natural resource management. Decentralisation has also often proven ineffective in Uganda's forest and fishery sectors because the national government withholds the amount of funding and judicial power needed for local-level management entities to be effective. Moreover, the national government has little incentive to increase funding and authority at the local level because extraction of these resources benefits itself. Until the central government relinquishes some control and allows for the development of nested institutions, ineffective natural resource management will continue.

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