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**Comparing the effectiveness of informal and formal institutions in sustainable common  
pool resources management in sub Saharan Africa**

Mastewal Yami<sup>1\*</sup>, Christian Vogl<sup>1</sup>, Michael Hauser<sup>1</sup>

<sup>1</sup>University of Natural Resources and Applied Life Sciences (Boku), Department of Sustainable Agricultural Systems, Gregor Mendel Strasse 33, A-1180 Vienna, Austria, E-mail: [mastewalyami@yahoo.com](mailto:mastewalyami@yahoo.com)

**Abstract**

This paper compares the effectiveness of informal and formal institutions for sustainable common pool resources (CPRs) management in sub Saharan Africa and investigates the social, political, and demographic conditions which influence the institutions' effectiveness. By focusing on publications addressing micro-level CPR management, a comprehensive literature review was conducted. Articles were grouped, based on main themes of the study, including types of institutions and conditions that influence their effectiveness. A qualitative meta-analysis was conducted using a deductive coding approach. Results revealed that informal institutions have contributed to sustainable CPR management by creating a suitable environment for joint decision making, enabling exclusion at low cost for CPR users and using locally agreed sanctions. Although the published evidence suggested less support to formal institutions under decentralised governmental reforms, they play an important role to implement technologies for sustainable CPR management. Conditions that influence effectiveness of both types of institutions include high population growth on limited CPRs, the growing scarcity of CPRs due to land use change, and lack of human and financial capacities. Emphasis should be given to enhance the effectiveness of both types of institutions by improving the conditions which hinder their contributions to sustainable CPR management. Moreover, policies and development interventions that recognise the strengths of both types of institutions and build the capacities of institutions depending on the local context are crucial to achieve sustainable CPR management.

**Keywords:** *Common pool resources, Formal, Informal, Institutions, sub Saharan Africa*

**Introduction**

In Africa, common pool resources (CPRs)<sup>1</sup> management plays a crucial role for livelihood security and conservation of natural resources. Recent estimates indicated that 98 per cent of forests (Barrow *et al.* 2009), and almost all of pastures in Africa (that account for 28 per cent of the global pastures) are owned by the public. When managed in a sustainable manner, CPRs can be a key factor in poverty reduction and livelihood improvements of the rural poor (Beck and

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<sup>1</sup> Common pool resources (CPRs) include forests, grazing lands, and wetlands that have multiple users and /or user groups. In CPR management, exclusion of individual users is difficult to achieve and joint use involves subtractibility, i.e., the use of a resource by one person will subtract from another persons' enjoyment of the resource (Steins and Edwards, 1998).

Nesmith, 2001)<sup>2</sup>. However, Berhanu and Swinton (2002), among others, pointed out that degradation of CPRs is among the major threats to sustainable rural development in sub Saharan Africa (SSA).

Past efforts to reverse CPR degradation in SSA have often focused on technological interventions that neglected the social and cultural dimensions of technological adaptation (UNRISD, 2004). Most governments and development agencies have underrated the capacity of local communities to participate effectively in CPRs management programmes for decades. Some observers noted that even those projects that relied on community participation have not been particularly effective at targeting the poor (Mansuri and Rao, 2004). Development projects on CPRs management were implemented without an adequate basis of knowledge on strengths and weaknesses of existing institutional arrangements. This has led to the undermining of important institutions which are involved in sustainable CPR management and then to inefficient use of financial resources (Bremner and Lu, 2006).

The term institution is conceptualised by different authors in different ways. Most definitions, however, translate the term by referring to structures, mechanisms, and processes as well as rules and norms that govern human behaviour and social order. In this paper, the definition by Douglas North (1990) is used as the main point of reference, because it emphasises the differences between the informal and formal nature that institutions could have. Informal institutions are systems of rules and decision-making procedures which evolved from endogenous socio-cultural codes and give rise to social practises, assign roles to participants, and guide interactions among CPR users (Appiah-Opoku and Mulamootil, 1997). Formal institutions refer to the rules that guide access, control, and management of CPRs, and which are backed up and enforced by the state. This paper compares informal and formal institutions, because both types, with their remarkable differences (as shown in Table 1), could have distinct influences on human behaviour towards sustainable CPR management.

*Table 1. Overview of Differences between Informal and Formal Institutions*

Aspects	Informal institutions	Formal institutions
Nature of evolution	Endogenous	Exogenous
Functional and structural arrangements	Site specific	Common at district or national level
External input and material support	Low	High
Consideration of social and cultural embedded ness	High	Low
Ownership	Local community	State
Enforcement and monitoring	Based on agreement of community	Legally by state

### **Methods of Literature Review**

For this study, secondary data was collected by computerised searches of databases. During November 2007 to June 2008, recent publications on institutions relevant for micro-level CPR

<sup>2</sup> Sustainable CPR management implies that the needs of present generation cannot be the sole basis for deciding on appropriate solutions to CPRs use problems; needs of future generations and society in general need to be considered as well (Muchena and van der Bliet, 1997).

management were reviewed. The various research findings on the informal and formal institutions governing the management of CPRs were integrated and interpreted using the main themes that emerged from descriptive texts like types of outcomes of CPRs management, elements of institutional mechanisms, and the conditions which influenced the institutional mechanisms to achieve sustainable CPR management. Then, qualitative meta-analysis method, which is also referred to as qualitative meta-synthesis, was used.

## **Results and Discussion**

### **Informal Institutions and Sustainable CPR Management**

The past attempts by donors and governments to import practises, rules and values of sustainable CPR management from one environmental and cultural context to another had limited success. This has turned the attention of development agencies to the importance of already existing informal institutions within the 'target environment' (Watson, 2003). Informal institutions are established on different grounds and for various reasons, like economic reasons (i.e. groups run common economic activities, such as labour sharing during harvest seasons, informal healing and hunting; and religious reasons (i.e. groups have common religions and beliefs such as taboos and sacredness (Bhagwat and Rutte, 2006).

Even though not explicitly mentioned in the reviewed studies, this motivation of setting rules as part of an informal institutional arrangement could arise from the increasing recognition of critical roles CPRs play in sustaining livelihoods of various rural communities. There is a general consensus among studies that successful informal institutions served as mechanisms to achieve sustainability outcomes by regulating access to and control over CPRs, managing CPRs use conflicts, sharing benefits equally among CPR users, and mobilising social capital for sustainable CPR management (Chisholm, 1998). Moreover, as informal institutions are embedded in communal structures, they allow the incorporation of the communities' mechanisms and knowledge about the sustainable management and utilisation of CPRs into the CPRs management (Zealelem and Leader-Williams, 2005). A common pattern in all these cases points to the fact that informal institutions have evolved internally from the society and enacted in the interest of the community which has developed commitment, ownership, and responsiveness among the CPR users. This in turn contributes to achieve sustainability outcomes particularly prevention of CPRs degradation and improvement of the CPRs conditions in terms of quantity and quality.

In summary, the literature analysis implied that informal institutions contribute for sustainable CPR management by regulating access to CPRs at low cost for CPR users; developing and mobilising social capital; acknowledging incorporation of local knowledge and mechanisms of the community in CPRs management; and enhancing collective action among CPR users at low transaction costs. These contributions are enhanced mainly under conditions of active community participation in CPRs management, high social capital and shared beliefs among CPR users, and in the presence of well-established village structures. On the contrary, CPRs use conflicts, high population growth on limited CPRs, and the growing scarcity of CPRs due to land use change hindered the effectiveness of informal institutions in sustainable CPR management.

### **Formal Institutions and Sustainable CPR Management under Decentralised Conditions**

In SSA, governments were criticised for establishing highly centralised and bureaucratized formal institutions instead of building upon local and decentralised decision-making mechanisms for sustainable CPR management (Platteau, 1992). Recent literature, however, underlined that decentralisation of formal institutions, i.e. the deliberate and planned transfer of CPRs

management responsibilities away from the central state institutions to peripheral institutions, has acquired considerable popularity since 1990s (Olowu, 2001).

In the vast literature on CPRs, considerable attention is given to formal institutions in SSA due to decentralisation of the formerly centralised, top-down approaches towards CPRs management, which was unsustainable (Benjaminsen, 1997). Accordingly, with devolution of power, governments allow CPR users to participate more fully in shaping rules of access, maintenance and allocation of CPRs. Furthermore, formal institutions are suitable for the implementation of new CPR management strategies, because of their ability to build on existing bureaucratic structures and the authority often vested in state organisations (Shyamsundar *et al.* 2005).

In summary, the literature analysis highlighted that formal institutions play an important role in implementing technologies in sustainable CPR management although CPRs scarcity caused by land use change, high population growth on limited CPRs, and inadequate human and financial capacities reduced their effectiveness to achieve sustainable CPR management.

### **Conditions that Influence Effectiveness of Informal and Formal Institutions in Sustainable CPR Management**

The institutional arrangements in rural SSA have determined the success or failure of efforts towards sustainable CPR management (Bandstein, 2005). This review disclosed six main sustainability outcomes in CPRs management in SSA, namely, enforcement of rules with mutual agreement among CPR users, regulated use of CPRs, equal benefit sharing among CPR users, improved CPRs conditions in terms of quantity and quality, meeting the economic needs of CPR users, and prevention of CPRs degradation.

The published evidence so far supported the argument that informal institutions in many rural settings of SSA have contributed to sustainable CPR management by mobilising social capital, solving collective action problems, and serving as entry points for interventions in sustainable CPR management. Additionally, when compared to formal institutions, informal institutions have higher potential to survive, regardless of the changing socio-economic and political conditions (Ylhäisi, 2006). Under current conditions, formal institutions contributed less to sustainable CPR management than the informal institutions. However, formal institutions have important contributions to make during the implementation of strategies and technologies to sustainable CPR management. Based on this, it is argued that formal institutions have also crucial role to play in sustainable CPR management if they are equipped with appropriate power and legitimacy.

### **Conclusions**

The informal institutions have contributed to achieve most of the sustainability outcomes because they acknowledge local knowledge of the community in the CPRs management and they can be enforced at low cost for CPR users. The formal institutions in most situations contributed less to sustainable CPR management due to several factors including unclear responsibility and power sharing in the decentralisation reforms, and their low endurance to change with political conditions. In conclusion, high population growth on limited CPRs and insufficient human and financial capacities are among the many conditions that affected the well-functioning of both types of institutions to achieve sustainable CPR management.

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