

Repositioning Local Institutions in Natural Resource Management: Perspectives from Sub-Saharan Africa

By Jude Ndzifon Kimengsi* and Balgah Roland Azibo**

Abstract

Empirical evidence confirms the role of local institutions in natural resource management in Sub-Saharan Africa (SSA). While their exact actions in this aspect is important, even more pertinent is the way these institutions can be rekindled in the midst of seemingly weak formal structures to support resource management processes. Using empirical case studies from 8 SSA countries, complemented by field-based experience on local institutional dynamics, we analyse local institutions with a view to reposition them in resource management. Our analysis suggests that in repositioning local institutions, attention should be given to local institutional capacity, regulatory frameworks, institutional performance and transplantation.

JEL Codes: D02, Q20

1. Introduction

There is substantial evidence buttressing the fact that sustainable resource management systems prevailed among indigenous African people before the arrival of European colonists (Galanter 1981; DeGeorges and Reilly 2009; Tem 2016). Traditional institutions such as kings, chiefs, headmen and healers played an important role in regulating and monitoring the extraction and use of natural resources. For instance, the royal hunting preserves of the amaZulu and amaSwati people, and the *kgotla* system of land management practiced by the Batswana people (Ghai 1992; Fabricius 2004). Although natural resources formed an integral part of African livelihoods, efforts to promote natural re-

* Institute of International Forestry and Forest Products, Technical University Dresden, Piennert Str. 7, 01737 Tharandt, Germany. The author can be reached at jude_ndzifon.kimengsi@tu-dresden.de or jude.kimengsi@catuc.org.

** College of Technology, The University of Bamenda, P.O. Box 39, Bamenda, Cameroon. The author can be reached at balgazib@yahoo.com.

source management as a rural development strategy are still considered to be fairly recent. Increasing concerns by international development agencies and governments on natural resource management arose mainly from a widespread assumption that the rural poor are exerting unsustainable pressure on their natural environment. It was therefore argued that improved institutions¹ and practices could lead to an improvement in natural resource management thereby reducing environmental degradation (Fabricius and Koch 2004).

The consistent debate on the topic of decentralization led to a greater recognition and appreciation of the relevance of local knowledge and institutions in natural resource management. This recognition was precipitated by a number of issues to include the increasing realization by governments that they lack the capacity to single-handedly manage resources, and the romantic belief that local communities through their institutions have been able to live in harmony with their resources prior to colonialism (Ghai 1992; Buchenrieder and Balgah 2013). The application of instruments of decentralization in natural resources management is seen as a better way to accommodate diverse interests of people at the local level in the process of making resource management sustainable. This is largely due to the fact that it guides policy makers in deciding the appropriate measures for decentralizing natural resources management in most developing countries (Agrawal and Gupta 2005; Andersson et al. 2006).

The role that institutions can potentially play in the sustainable governance and management of natural resources has been widely recognized in the topical literature for more than half a century now; institutions support sustainable natural resource management (Hardin 1968; Hayami and Ruttan 1985; Ostrom 1990; Ostrom 2005; Hagedorn 2015), which, in turn, contributes to the development process of societies (Silberberger and Koeniger 2016). Institutions are the rules of the game in a society or, more formally, they are the humanly devised constraints that shape human interaction (North 1990). They are the 'people and the patterns of regular, repetitive interactions among them that transform inputs into outputs' (Ostrom et al. 1993). Institutions are equally viewed as the arrangements that structure the political, economic and social interaction among its members with their main aim being to reduce uncertainties that result from incomplete information due to information asymmetries and transaction costs (North 1990; Silberberger and Koeniger 2016). Leach et al. (1997) consider institutions as regularized patterns of behaviour based on rules in use.

¹ Institutions are defined along North (1990) as the formal and informal rules that facilitate co-ordination among people by helping them form expectations. They function as constraints that shape human interaction and the enforcement characteristics of these constraints. Institutions provide a set of working rules determining who is eligible for decision making in some setting, what actions are allowed or constrained, which aggregation rules and procedures must be followed and what payoffs (and sanctions) will be assigned to individuals based on their interactions (Ostrom 1990).

There is no gain saying that building sustainable institutions is a necessary condition for sustainable natural resource management. Sustainability in this respect is viewed as societies' compromise between institutions that integrate individual actors' decisions in a wider system, holding them fully responsible for more or less all of the effects of their choices and those institutions that partly free individual decision makers from parts of such responsibilities (Hagedorn 2015). This explains why achieving sustainability has become an issue of institutional change and institutional innovation – a process that will most likely lead to a higher degree of institutional diversity (Ostrom 2005) and to more complex governance structures (McGinis 2002). This assertion holds true because interactions between ecological and social systems (often also including technical systems), are complex and to a large extent unknown.

Local institutions have long been perceived as having local legitimacy in natural resource management, although the extent of their integration with centralized institutions remain a subject of much debate. Local governance institutions support the maintenance and strengthening of local capacity for dialogue and negotiation – this represents an essential prerequisite for the sustainability of resource use practices, rural livelihoods and local peace (Hilhorst 2008). These institutions used to be effective in exercising authority over access to and use of natural resources, and in conflict resolution. This scenario is best presented through perspectives on the community as 'shared understanding' and the community as 'a social organization.' As shared understanding, local communities through their institutions are viewed as organic units, in which members have common ties, interests and beliefs, with a propensity to act collectively that dispels alienation. As a social organization, it refers to a different set of attributes; a common and stable territorial location, stable membership and regular interaction over a range of issues (Agrawal 1999; Baumann et al. 2003). Their relevance is argued on the basis that local institutions shape collective interests and so align divergent interests, beliefs and identities based on caste, class, gender and religion (Agrawal 1999; Baumann et al. 2003). In addition, livelihood productivity and sustainability in rural communities depend on the state of the environment and on the institutions that govern access and management of natural resources (Department Environment and Water 2006). Local institutions are equally advantageous as they define access and management of natural resources and in sanctioning trespassers. This is reflected upon key aspects of governance such as the quality of decision-making processes, the exercise of power, and the functioning of accountability mechanisms (Hilhorst 2008). In emphasizing the role of local institutions, Dixon and Wood (2007) contend that local institutions are dynamic, flexible, and responsive to societal and environmental change; they are therefore more efficient in promoting sustainability. Local institutions form a store for indigenous knowledge and beliefs, and they have the potential to effectively link service providers and local communities in the natural resource management process. These institutions

could equally play an effective role in engaging the energies and social relations of citizens and in increasing the willingness of the citizenry to engage in natural resource management (Heltberg 2001). Local community members know each other better and exhibit a good sense of belonging. This provides opportunities for cooperation and collective action in natural resource management on a self-ruling and self-sufficient basis (Meliyo et al. 2006; Ramakrishnan 2004).

Despite these advantages, local institutional relevance has been undermined. The destabilization of these institutions could be traced from colonial times and this continued after independence. The destabilization is largely a reflection of the growing power of the central state, the expansion of statutory law, and changing social relations and new markets. Furthermore, the emergence of new resource management actors represents a dilemma for local institutions on how to deal with them. The emergence of new actors perhaps either led to the promotion of corruption in local institutions or ignores local decisions over centralized institutions (Hilhorst 2008). This is conspicuous in cases where centralized institutions portray a lack of transparency (Hilhorst 2008). It is further argued that local institutions are problematic as they contribute to the multiplicity of arbitrating authorities in rural areas – this could potentially contribute to poor coordination and even competition.

Following Garrett Hardin's (1968) article on the tragedy of the commons and its further expansion into the prisoner's dilemma, degradation has often been envisaged as a probable rational outcome whenever individuals use a scarce natural resource in common (Hardin 1968; Harsanyi and Selten 1988; Ostrom 1990). These models called for a leviathan: a strong personality that should enforce the management of common property resources. To avoid the tragedy of the commons, it was suggested to use force, so that the change required to sustain natural resources might be achieved. This coercive force to be imposed by a leviathan should be outside individual psyches, and is a precondition to avoid ruin from an overcrowded world (Hardin 1978; Hobbes 2006). From the Hagedornian (2008) perspective, this will entail the dominance of rules monitored and implemented within formal governance structures (such as relevant state ministries). In other words, if resources are to be successfully managed for present and future generations, they should be overseen by formal governance structures. Based on self-interested behavior, ruin will be expected on the commons as individuals irrationally appropriate resource units for personal gain. In fact, self-interest will not lead to the achievement of common goals, unless a special device (Leviathan) insures that individuals act towards the common or group interest (Hardin 1968). This conceptualization probably explains why the tragedy of the commons and the prisoner models have been used not only to explain the failure of community based resource management, but also the evolution from community based resource management to state imposed protected area management, which was very common in developing

countries around the 1960s and 70s (Inamdar et al. 1999; Balgah and Buchenrieder 2013). Little or no attention was directed towards a possible theory of self-organization, self-governance and collective action, grounded in the conception that interest in the consistency of economic returns is a key motivation for effective self-organization for the sustainable management of the commons (Ostrom 1990).

The large failure of state-based protection of natural resources in Africa stimulated re-thinking. The theory of collective action was then proposed as an alternative model. The fundamental tenet of this theory is that collective action does not naturally lead to degradation. In fact, if people will use a resource in common, and if they believe they will be better off by sustainably managing the resource base, then they are likely to collectively act in order to reap these benefits in the longest possible time, even if they are rational and self-interested (Ostrom 1990). This alternative approach calls for a theory of self-organization and self-governance (*ibid.*). The premise is that communities can organize themselves to supply adequate institutions that regulate and monitor the actions of members and enforce sanctions, in order to sustain a resource base and avoid adverse outcomes. This thinking was supported by Coase's (1960) contention that bargaining will always lead to a more efficient solution. This clearly deviates from the theories of the firm and state that undermines the logic of the tragedy of the commons and the prisoner's dilemma.

The failure of the "Leviathan approach" rekindled interest in the role of community based institutions in enhancing sustainable natural resource management in Africa. This approach did not yield the intended benefits especially for local communities that depend on natural resources. This article succinctly reviews the experiences that have emerged in this domain in sub-Saharan Africa. A special empirical interest is placed on the role that local, community based institutions in this region have played in enhancing the double goals of sustaining the resource base and the livelihoods of embedded communities.

This paper is organized in five sections. After the introduction which conceptualizes institutions and sustainable natural resource management, section two presents the methodology which largely centered on the careful selection of relevant literature which provides adequate insights on ways to reposition local institutions and on previous field experiences gained by the authors as institutional capacity assessment and capacity building consultants with WWF Cameroon and her partner Civil Society organizations in a number of National park communities between 2012 and 2016. In section three, focus is on empirical case studies on institutions and natural resource management with focus on Kenya, Tanzania, Ghana, Uganda, South Africa, Zimbabwe, Ethiopia and Cameroon. The key aspects identified in the empirical case studies provide insight into the identification of local resource management gaps which represents section four of the paper. In section five, we draw conclusions based on the pre-

vious analysis and also suggest a way forward to reposition local institutions in resource management.

2. Methodology

This study reviews existing literature on natural resource management using empirical case studies from some countries in Sub Saharan Africa such as Kenya, Uganda, Ghana, Ethiopia, Tanzania, Zimbabwe, South Africa and Cameroon. Taking into consideration the diversity of existing literature on institutions and resource management, the review of literature for this paper focused on scientific works which provide facts that can spur up reflections on the way forward in repositioning local institutions for sustainable natural resource management.

The review focuses on the typology and analysis of institutions in natural resource management, and their experiences in strengthening grassroots institutions. A distinction is made between the terms 'institution' and 'organization.' While organizations refer to groups of individuals who are bound together by some common purpose to achieve objectives, institutions form the framework upon which organizations are based (Hagedorn 2008). Many institutions are very durable, have inertia and robustness (Putnam 1993). Institutions are equally embedded in *governance structures* (such as contracts, bureaucracy, cooperation or markets) that make them effective. Under this constellation, one distinguishes formal institutions (such as rules, laws and constitutions) and informal ones (e.g. norms of behavior and self-imposed codes of conduct). In real life, it is possible to identify interactions and hybrids involving both formal and informal institutions in the management of resource systems. Institutions and their governance structures are therefore crucial determinants to the level of commitment, conformance and therefore sustainability of natural resource systems (Hagedorn 2008). In his analysis on the special traits of institutions that bring about sustainability, Hagedorn (2008 and 2015) employed the Institutions of Sustainability (IoS) framework, which structures sustainability analytically according to four main categories, namely, transactions, actors, institutions and governance structures. The author argues that the sustainability question rests on the need to balance two sorts of costs actors may face while being constrained by institutions – (i) costs from the integrative effects of institutions on individual decision making, and (ii) costs from the segregative effect of institutions. Integrative institutions relate to rules that make decision makers eligible for the beneficial effects they cause and hold them liable for adverse effects in resource management decisions. Segregative institutions deviate from this logic such that decision makers forego some benefits and are exempted from some adverse effects in resource management decisions. Consequently, the trade-off between integrative and segregative institutional costs defines the sphere of sustainability (Hagedorn 2015).

Perhaps, it is necessary to agree with previous scholars at this juncture that definitions and distinctions of institutions vary across disciplines and research experiences. In this study, institutions refer to locally organized social structures that use complexes of norms and behaviors that persist over time by serving collectively valued purposes and either prohibit or permit specific types of actions. They are responsive to livelihood opportunities and represent key channels of local level support in natural resource management. Institutions are often classified based on functionality and the services they offer such as market efficiency, claims/lobbying and *pro bono* functions (Thorp et al., 2005).

Unprepared and seemingly weak local institutions have the herculean tasks of engendering local natural resource management which is met with limited success. This is particularly crucial for local communities that depend on natural resources for sustenance. Focus therefore remains on how to identify missing links and seek ways of repositioning local institutions in livelihood sustenance and resource management in Africa. Drawing cases from local non-state institutions such as NGOs, cooperatives, community based organizations and village forest management committees which remain major actors in natural resource management, this paper undertakes an analysis of their hitherto local institutional approaches to achieve these targets, their capacities and levels of collaboration with other actors. Furthermore, the paper highlights the potentials to reposition such institutional arrangements for sustainable natural resource management in sub-Saharan Africa.

The review in this study is narrowed down to articles on forest, water and land, which are vital resources in Sub-Saharan Africa. Personal field experiences gained by the authors as local institutional capacity assessment and capacity building consultants with WWF Cameroon and her partner Civil Society organizations and conservation cooperatives in a number of national park communities in Cameroon between 2012 and 2016 have been employed to enrich the paper. During such consultancy exercises, the authors employed Participatory Rural Appraisal (PRA) tools such as focused group discussions and interviews with key informants (group leaders, members, other forest stakeholders) to gather information from over 70 local organizations and their role in forest resource management. Our field based experience in the technical and institutional capacity assessment of community based organizations and civil society organizations with respect to their role in resource management are invaluable in this paper. The reviewed data and field experience provided adequate information for analysis. The analysis is content in an approach focusing on key aspects, such as the nature of local institutions, institutional capacity, the regulatory framework and access to information for local institutions, institutional performance and transplantation. These aspects were judged to be crucial in the repositioning of local institutions for sustainable natural resource management within the Sub-Sahara African context.

3. The Environmental Entitlements Approach

The entitlements approach is the analysis of effective legitimate control over natural resources, and its various channels and determinants, including attention to the rules and institutions that control access, and to the distinctive positions and vulnerabilities of resource users (Gasper 1993). Entitlements are considered as social, political and economic processes that institutionalize resource rights, access and distribution in ways that are often path-dependent; this creates differentiated access and control over resources within communities (Goldman and Riosmena 2013). Entitlement examination assists in the provision of insights on how people gain divergent entitlements from their initial endowments to improve on their well-being. In this regard, multi-level governance institutions shape household entitlements to natural resources (Gupta et al. 2010). However, the inadequacy of entitlement approaches has been raised with respect to relationships between individuals and resources which are mediated by non-market and/or informal institutions. This lacunae suggests due recognition of the importance of non-informal institutions in determining entitlements (Devereux 2001). The environmental entitlements framework has been successfully used to examine gender relations and co-management of natural resources, land rights and forest resources, institutional empowerment and forest devolution (Orchard et al. 2015).

The entitlement analysis was first proposed by Amartya Sen (1981) in his attempt to explain the ironical phenomenon of want in the midst of plenty – a product of the collapse in their means of command over food. Entitlements are viewed descriptively in this case. The term does not refer to people's rights in a normative sense, but on the range of possibilities that people can have. Sen considered entitlements to represent the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces (Sen 1984). Entitlements arise through a process of mapping, whereby endowments (a person's initial ownership of land or labor power for instance), are transformed into a set of entitlements. Entitlement mapping is "the relation that specifies the set of exchange entitlements for each ownership bundle" (Sen 1981, 3). Such entitlement relations may be based on processes as production, own-labor, trade, inheritance or transfer. Sen's concern was therefore to examine how different people gain entitlements from their endowments and so improve their well-being or capabilities. It represents a descriptive approach which provides an understanding of how, under a given legal setting, people do or do not survive (Sen 1984). The approach has been further extended by different scholars.

For instance, the framework proposed by Leach et al. (1997) is used to enhance a proper understanding of how people gain access to natural resources. It is considered as a generalized theory of access to natural resources called 'environmental entitlements' (Figure 1). The theory contends that local people are

constantly in search of power and control (entitlements) over natural resources in order to attain other end goals. At any point in time, resource management initiatives can only claim to work if the main role players have acquired specific capabilities through effectively using natural resources. Secondly, the untapped ecosystem’s goods and services (populations of plants and animals, abiotic resources, habitats and ecosystems) in an area become useful through the impact of transforming structures or institutions (Leach et al. 1997). These mechanisms (structural and institutional transformation) serve as catalysts that convert ecosystem goods and services from resources with potential benefits to resources over which local people have rights and which they can put to use (called ‘endowments’) (Leach et al. 1997).

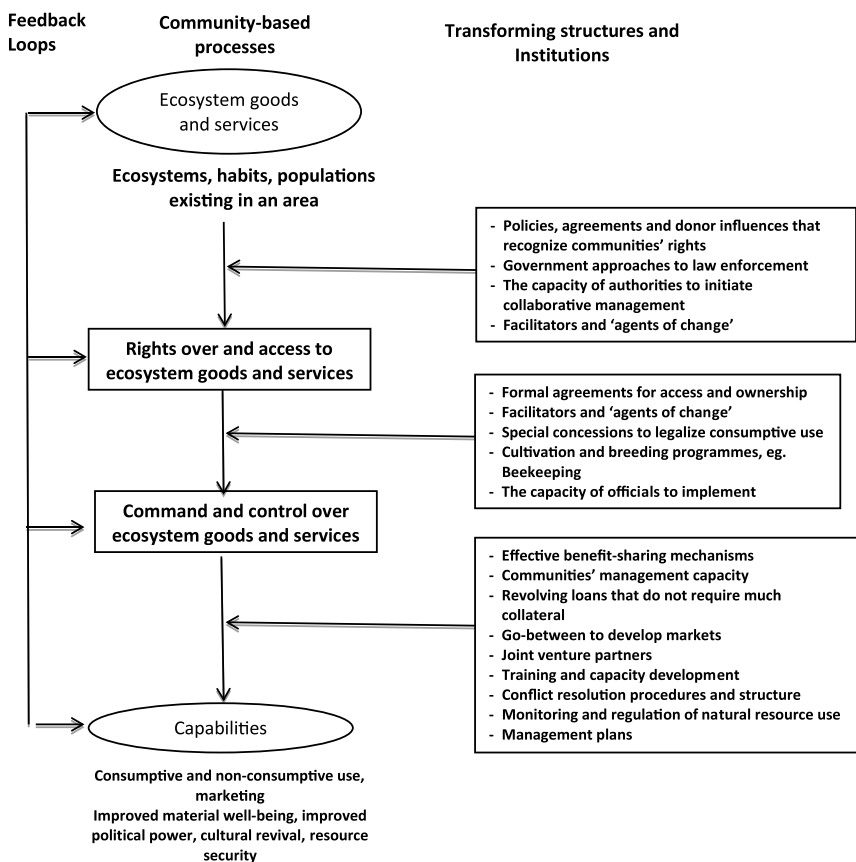


Figure 1: The Environmental Entitlements Approach (Leach et al. 1997)

These transforming structures and institutions are of particular relevance because they represent the main driving forces that determine whether ecosystems can become useful to communities as commodities over which they have rights, and assets of benefits over which they have effective command and control. At any point in time, the key criterion for success is whether local people have attained their goals and increased their capabilities (*ibid.*).

4. Empirical Case Studies

This section discusses some documented case studies on how local institutions have been involved in the sustainable management of natural resources in Africa. It does not purport to be a comprehensive view. However, the case studies are examined on the basis of how local institutions have (not) fostered the process, and to what extent governments were able to support or impair the functioning of such institutions. These case studies will form the basis for suggestions on the way forward regarding the repositioning of local institutions for sustainable natural resource management and livelihood sustenance.

4.1 Historical Perspective of Local Resource Management Institutions

Local institutions (norms, belief systems and practices for instance) formed part of African society. The African population generally appreciated the value of nature, and incorporated nature into their worldviews, metaphors, folklore and belief systems, many of which included rules and procedures designed to regulate the use and management of natural resources and the maintenance of ecosystem resilience (Folke et al. 1998; Fabricius 2004; DeGeorges and Reilly 2009). Customs that created small-scale disturbances such as pulse hunting (where animals were heavily hunted during certain months and then left alone for the rest of the year) and patch burning to enrich grazing for wildlife (Feely 1986; Kepe and Scoones 1999) – and customs to nurture biodiversity stocks to assist resource renewal after depletion formed part of African society. In addition, animals such as the python and lion were believed to be the custodians of important landscapes and resources, often through human spirit mediums that represented these animals, while sacred forests are scattered all over the African landscape (Barrow 1996; Fabricius 2004). The stability and durability of local institutions constitute essential ingredients that make the difference between communally managed and open-access systems since such institutions make decisions, formulate rules and enforce them (Ostrom 1990). For instance, traditional institutions in Lesotho under the administration of chiefs and headmen regulate livestock movement and proclaim livestock-free ecological areas dedicated to tourism as part of their natural resource management strategy. Local institutions in parts of Southern Africa do not rely on ‘winner takes all’ democ-

racy through simple voting; decisions for the interest of the community are either made through consensus or autocratically by traditional leaders (*ibid.*). For example, the inherited right of traditional rulers to receive benefits from natural resources is institutionalized in most societies. Such an important reality often conflicts with international development agencies and governments who insist on proper elections or referendum-type processes in decision-making (*ibid.*). In the case of the hunter-gatherer Basarwa community of Botswana, the people were able to move around in response to ecosystem change and wildlife dynamics, burn vegetation selectively, and choose a livelihood strategy from a range of possibilities that would best suit their particular circumstances. This suggests a situation where local institutional arrangements shaped the processes of endowment and entitlement mapping, providing avenues for local inhabitants to identify and access a range of resource management possibilities. The lessons from the Basarwa community could arguably offer a blueprint for the repositioning of local communities. However, the effectiveness of these practices is challenged today by high population densities and limited space. In the Eastern Cape Province of South Africa, a significant decline has been observed in the condition of indigenous forests after the headman (*Ibhodi*) system collapsed (primarily due to the corrupting influences of apartheid-era social engineering) (Rhodes University et al. 2001). Homman (2004) illustrates how local Borana pastoralists depended on community based institutions and indigenous knowledge to achieve the double objective of improving livelihoods and sustainably managing natural resources in southern Ethiopia. However, full success was impeded by emotionalised views on pastoralists' capability in natural resource management on the one hand, and the negligence of legal regulatory framework by pastoralist institutions on the other hand.

The increasing appreciation of local institutions is associated with the challenges that plague state or centralized management institutions. State effort to own and control natural resources led to the disenfranchisement of traditional institutions and local resource users leading to the destruction of existing resource management regimes (e.g., forests). These local structures have found it difficult to survive the super-imposition of economically motivated or market-driven management practices which have been introduced by the state in its nominal quest for efficiency. Consequently, local communities and their institutions have had to grapple with a new monetisation of their values and the imposition of an economic system based on individual material gain (Richards 1997; Carney & Farrington 1998). Furthermore, state intervention has rather precipitated the transformation of forests into open access resources (where existing local management regimes have been destroyed and not replaced). In addition, it has tacitly (or actively) encouraged unsustainable degrees of exploitation (Richards 1997; Carney & Farrington 1998). Considering the fact that institutional arrangements shape the processes of endowment and entitlement mapping, a society's appreciation of institutions and institutional change de-

finer the range of possibilities that its people can have in relation to natural resource access. The present scenario signifies a virtual neglect of local institutions and processes (and by implication local actors) in favour of centralized institutions. This lethargy, it should be noted, contributes to the unsustainable management of natural resources.

4.2 Local Institutional Capacity

Mapfumo et al. (2013) examine how the capacity of local farming communities in Zimbabwe and Ghana and their institutions influence their response to the new and emerging challenges in rain fed agriculture due to climate change. They conclude that the level of participation enhanced adaptive capacity. Institutional conflicts related to land tenure and sharecropping arrangements between migrant farmers and native landowners were addressed in Ghana, while local institutions supporting traditional social safety net mechanisms were revitalized in Zimbabwe. In both cases, it was apparent that farmers faced multiple stresses, at the core of which were poor and declining soil fertility and weakening local institutions. The authors conclude that participatory rural appraisal was a suitable mechanism for supporting self-organization and co-learning processes among smallholder farmers and their service providers, enabling them to strengthen their local institutions around natural resource management. In Uganda and Kenya, Mongoi et al. (2010) emphasized the important role of local institutional capacity building for natural resource and climate risk management. This view had been expressed earlier by Andersson (2002) who recognizes the delivery of this “possibility of decentralization” depends to a great extent on the performance of local institutions in place. In this regard, positive outcomes are associated with the strength of local institutions for downward accountability (Andersson 2004). The existence of local institutions is, however, just a necessary starting point but not a solution to successful natural resource management (Scherr et al. 2001); they need continuous support for capacity building and bridging efforts to link up with higher-level decision-making processes and the broader markets, before they can be expected to mobilize groups to transform into resilient communities.

While access to institutions matter, institutional needs assessment and capacity building is primordial as in the case of institutional capacity assessment and building for community-based organizations (CBOs) in Cameroon. For instance, WWF Cameroon sponsored CBO-specific institutional diagnosis and capacity assessment in 2014 on a number of aspects to include a rights-based perspective, negotiation skills, social mobilization, gender voicing and promoting the rights-based principles in natural resource management (Green Forest Foundation 2016). The assessment showed that gaps needs to be filled in these CBOs with respect to their knowledge on resource mobilization, technical capacity building, negotiation skills, social mobilization, gender voicing and a

rights-based approach to support their intervention in protected area management. A key limitation to such interventions lies in the fact that they target a limited number of CBOs, not providing room for extension to linked stakeholders (rights holders and duty bearers) whose limited technical and institutional capacities distort the process of forest resource management. In addition, the absence of local institutional policy documents and alliances limits the extent of intervention.

In an earlier study, Farrington and Boyd (1997) reported how the mobilisation of community institutions achieved a number of objectives to include support to strong local groups, committed local staff, and collaboration with other governmental departments in interdisciplinary planning and implementation, increased agricultural productivity, enhanced diversification into new enterprises, reduced resource degradation and strengthened ties amongst two independent neighbouring communities in rural Kenya. These occurred within a period of two years. The authors ponder, however, to what extent such achievements will be sustained if biophysical and socio-economic conditions are not considered, and higher level regulatory frameworks are not fully understood in the communities. This suggests the need for an effective interplay between centralized state-oriented institutions and local institutions. Such interplay can only work should local institutions understand and appreciate their role, and effectively overcome the virtual dominance of state institutions. In a rigorous assessment of governance outcomes of natural resource co-management, Cundill and Fabricius (2010) report that creating the conditions that facilitate self-organization, and particularly cross-scale institutional linkages, is the major challenge facing attempts to initiate adaptive co-management in South Africa. According to the authors, aspects requiring greater attention include community perceptions of support from outside agencies, access to long-term funding for adaptive decision making, and access to reliable information about changes in natural resources and legal options for the formation of decision-making bodies and social facilitation.

4.3 Local Institutions and Sustainable Natural Resource Management

In a regionally focused paper, Vanlauwe et al. (2014) reiterate the importance of local institutions if Sub-Saharan Africa (SSA) has to produce more food, feed and fiber in order to support its growing population. According to the authors, sustainable agricultural intensification for enhanced productivity must go hand in hand with the maintenance of other ecosystem services and increased resilience to shocks. However, because of the great diversity among smallholders in SSA, there is a need for a specific understanding of socio-technical conditions, famer typologies, production objectives, and the biophysical environment. This potentially generates a multitude of pathways from the current low productivity. The institutional context needs to be right for delivering

the necessary goods and services, ensuring inclusiveness across household types and facilitating local innovation. These conclusions are similar to those of Hounkonnou et al. (2012) in their study on innovation systems approach to institutional change, in which they focused on Smallholder development in West Africa.

Merry et al. (2005) comprehensively analyze the relationship between livelihoods and Integrated Natural Resource Management (INRM) in developing countries. Referring to a wide range of case studies, they conclude that INRM can empower poor people, reduce poverty, improve livelihoods, and promote economic growth. This was clearly visible in an empirical case study of Integrated Water Resource Management (IWRM) in Tanzania. The authors note that a strict livelihood approach that acknowledges farmers' priorities and time frames may only be problematic if it is used as a ritual, does not involve local institutions or does not bestow social responsibility towards minimizing negative downstream effects to such local institutions. Since such institutions are often weak in capacity and other resources, the authors emphasize the need for a strong supportive link of local institutions to hierarchies in order to enhance sustainability in multiple fronts.

Institutional capacity building is a step in the right direction towards sustainable natural resource management. Kimengsi et al. (2016) observed that conservation efforts in the Mount Cameroon National Park (MCNP), which have been directed towards assisting communities, were largely exercised through institutional capacity building with income generating activities (IGAs). A major setback in this area is the failure to assess the local intervention measures and to build options for synergy. The absence of synergy implies a lack of concerted efforts by local institutions in resource management. In a related dimension, Kimengsi (2014) examined major local institutional threats to forest resource management in the Lake Barombi Mbo Forest Reserve. The situation was viewed in the light of the lapses in the concerned institutions in successfully implementing the provision of alternative sources of livelihood to adjacent communities in protected areas. This is mirrored through poorly defined benefit sharing schemes in forest resource conservation in the area. In a rather controversial and contemporary contribution, Balgah and Buchenrieder (2013) question the fallacy that community based management is a sustainable alternative for failed top-down approaches to natural resource conservation. Contingent on property rights theory, they question the assumption that local participation in natural resource management results in sustainable structures. They rather argued that the level of access to the local institutions managing the natural resource can be crucial for sustainability behavior. To test this contention, they analyzed households with and without access to management institutions in communities around the Kilum-Ijim Mountain Forest in Cameroon. Their analysis revealed a mixed picture of the evolution of species in the community forests over time, questioning the role of the community in natural resource

conservation. By emphasizing that access to institutions matter, the authors emphasize the need for inclusion of this variable in subsequent analysis in order to enhance conservation efforts in natural resource hot-spots in sub-Saharan Africa. Although access to institutions matter, caution must be exercised on the type of institutions and their complementary roles in natural resource governance, at least in the Cameroonian context, where ample evidence exists on the failure of state driven natural resource management and conservation efforts (see for instance Oyono 2004; Egute 2012; Ngoufo et al. 2014).

5. Local Institutional Resource Management Gaps

Although there are diverse local institutions in Sub-Saharan Africa, a majority of these institutions are classified as status quo institutions² with a few hybrid institutions.³ Status quo institutions are often ‘weak,’ characterized by low capacity and poor leadership, governance and elite capture (Stroud et al. 2006; Battista and Baas 2004). There are however, very few hybrid institutions having some level of capacity in their effort to build the resilience of local communities. They (hybrid institutions) are an improved version of the status quo institutions which have built on some lessons and experiences, while utilizing indigenous knowledge in natural resource management. Most of the hybrid institutions represent local perspectives in policy making for more participation in policy dialogue, promote communication channels between higher and local policy levels for sustainable resource management (Mongoi et al. 2010). In sum however, both status quo and hybrid institutions are largely classified as embryonic based on the WWF institutional capacity tool since they fall short in most institutional governance aspects. Institutions are considered embryonic when they lack the key institutional strength to effectively contribute to natural resource management through IGA support, advocacy, partnership building, alliance and fund raising among others. In recognition of this situation, a series of technical and institutional capacity building interventions have been intro-

² “Status quo” institutions fail to exploit collective capital, knowledge sharing and access to information and are characterized by poor communication networks, poor linkages between grassroots institutions and higher level institutions and lack institutional coordination to respond to resource management issues (Mongoi et al. 2010).

³ We define “hybrid” institutions along Anne and Keeler (2010) as an institutional arrangement governing the interdependencies among discrete property holders and regimes, whether defined by structure (linkage among entities with jurisdiction over discrete property regimes) or mode of governance (balance between self-organization and formal regulation as complementary instruments of governance). This usage is similar to the definition employed by Sikor et al. (2008), who observe the emergence of hybrid institutions connecting public and private actors, actions, resources and property rights in natural resource governance. They are considered as ... an improved version of the status quo institutions which have built on some lessons and experiences, while utilizing indigenous knowledge in natural resource management (Mongoi et al. 2010).

duced across SSA. In the case of forest resource management in Cameroon for instance, institutional diagnosis revealed that local institutions do not have a well developed manual of procedures, tailor-made documents and systems to institutionalize best practices on rights-based resource management. This has formed the basis for the participatory development of specific institutional capacity strengthening plans for a number of local institutions for communities around a number of protected areas to include the Mount Cameroon National Park, the Bakossi National Park and the Bayang-Mbo Wildlife Sanctuary. Efforts began with community mobilization and sensitization through a series of technical and financial capacity building programmes. These efforts need to be complemented with capacity building efforts on partnership and alliance building, and advocacy.

Access to information could potentially contribute to conflicting views among local institutions and to institutional unpredictability. The increasing unpredictability of local people and their organizations even with the existence of local “rules of the game” represents a major frustration especially to external actors in natural resource management. This is applicable in cases where ‘communities’ constantly define and redefine themselves. This is caused by factors such as internal conflict over access to revenues and benefits, and the divergent views of local people and outside ‘experts’ on natural resources. Such conflicting views tend to compromise sustainability (Koch 2004). In rural South Africa, sharecropping and labour tenancy institutions have persisted for more than a century since the earliest efforts by the state to eradicate them. The legacy of apartheid lies not only in deep inequalities in access to land, capital and skills, but also in access to information, to the state’s welfare resources, to law enforcement measures and mechanisms for equitable dispute settlement (Putnam 1993). Therefore access to information in itself represents an important resource management institutional gap.

Resource management gaps are equally linked to the failure to analyse the performance of local institutions – be they segregative or integrative. According to Hagedorn (2015), the performance of segregative and integrative institution introduces transaction and opportunity costs. Transaction costs are the costs of information, coordination, negotiation and monitoring of natural resource management activities for instance. Integrating and segregating the effects of a transaction causes transaction costs (*ibid.*). In the case of integration, it can apply in cases where roundtables are organized to solve conflicts between nature conservation and agriculture or for discussing agri-environmental programs to be adjusted to the local specificities of ecosystems and farm structures. This cost tends to increase when the demand for integration comes from institutions that require considerable implementation efforts. In the case of segregation, transaction cost will arise, for example, when politicians have to produce plausible justifications for laws allowing excessive resource extraction and usage. This cost will increase when segregation is increasingly admitted by

the existing institutions, because it represents a burden to agents with unresolved conflicts. These costs are not equal in all cases, but depend on the properties of the transactions and the interdependence of actors involved. Opportunity costs, on the other hand, are the benefits of transactions from additional integration (and less segregation) forgone if the sets of rules and governance structures are segregative (rather than integrative), and vice versa (*ibid.*). By and large, these costs are a reflection of centralized institutional actions. If such actions are met with resistance from active local institutions (which are largely absent at the moment), a revision of the laws relating to access and management of natural resources will be unavoidable. Another issue that needs to be addressed relates to the process of institutional transplantation which is common for local institutions in SSA. Institutional transplantation is viewed as the adoption of institutions that have been successfully developed in other institutional environments (Polterovich 2001). This process has its own danger in that it produces different “reaction rates” with a high degree of incompatibility and failure rates registered. For instance, in the process of promoting sustainable natural resource management, development organizations tried to replicate the formation of local institutions and their support process without taking into consideration the dynamics that characterize them. This could be observed for some conservation projects in Cameroon such as the Ngoyla-Mintom project, the Green Business Initiatives in the Bakossi National park and the Bayang-mbo Wildlife sanctuary where conservation cooperatives and community based organizations were created. These actions failed to yield significant benefits in some communities due to their diversity. This corroborates Zweynert and Goldschmidt (2005) who contend that there are inherent difficulties connected with institutional transplantation. They argue that caution must therefore be applied in its application especially in developing or emerging countries where it is difficult to have a clear borderline between the polity and the economy. The results arising from the transfer of institutions mainly depends on the right selection of institutions to be transplanted, their adaptation to domestic conditions, and the political actors’ ability to ‘sell’ reform concepts in a way that makes them appear as fitting and familiar. This calls for a broad co-operation between the social sciences (Zweynert 2007; Zweynert and Goldschmidt 2005).

6. Conclusion and Way Forward

With a rainbow of status quo (formal) institutions championing natural resource management in Sub Saharan Africa, there is seemingly overwhelming evidence that it will be difficult for such institutions to cope with the demands of resource management, without involving local (informal) institutions. This is not easy as the latter institutions are very diverse. In order to rekindle a logical and systematic involvement of local institutions in natural resource manage-

ment in Sub-Saharan Africa, it seems primordial to classify and appropriately (re)group them, in order to synergize their interventions and potential contributions to sustainable natural resource management. Furthermore, local institutions need to be strengthened, for instance through capacity building and increased access to financial and other resources needed to enhance their contribution towards sustainable use of natural resources.

Assuming that local institutional sustainability is *sine qua non* for sustainable natural resource management, analysing the performance of segregative and integrative institutions and the opportunity costs of integration and/or segregation could provide a logical way forward to repositioning local institutions for sustainable natural resource management in SSA. This could be done bearing in mind that opportunity costs might increase in the process of integration. The current segregative approach however is sustained at the expense of long term natural resource sustainability.

The multiplicity of institutions, often with conflicting goals and overlapping competencies raises an important issue for concern. Restructuring local institutions to make them more service delivery oriented and increasing their collaboration and co-operation with formal structures responsible for local livelihood sustenance and resource management in Sub-Saharan Africa remains a daunting task. While the capacities of these institutions need to be developed to incorporate rights-based approaches, social mobilization, gender mainstreaming and advocacy to ensure more effective service delivery, the multiplicity of forms and the diversity of natural resources warrants caution in the integration process. In fact, including local institutions may not automatically lead to sustainable natural resource management. Efforts are therefore needed to identify the contexts within which the involvement of local institutions will meaningfully promote resource management. Research and experience over time will then provide the basis of broad based policy prescriptions to the actual level to which different local institutions could be integrated with existing formal institutions to enhance the sustainable management of natural resources in Sub-Saharan Africa.

Integrating local institutional perspectives in macro-level policy nevertheless offers an interesting possibility to some of the lapses observed in the formal institutional interference in resource management predominant in SSA at the moment. It is therefore essential to develop networks, partnerships and alliances between grassroots organizations and other civil society organizations, NGOs and key decision-makers in government line agencies and/or the private sector. Development organizations need to collaborate in the process of providing support interventions for local institutions. More frequent interventions are needed in this respect to yield consistent success. Social networking and partnership building among these groups could support the building of strong local institutions that can negotiate and cooperate with centralized institutions to sup-

port resource management. This suggests a repositioning which can redefine aspects of the environmental entitlements framework by providing avenues for local inhabitants to identify and access a range of resource management possibilities. Caution should however be applied as the integration process is likely to stimulate the emergence of several institutions with conflicting interests, as was observed for *Marantaceae* leaves in southern Ghana (Leach et al. 1999). From a policy perspective, there is an urgent need to develop institutional policies to shape and guide local institution-friendly interventions in resource management in Sub-Saharan Africa. The success depends, however, on the extent to which such policy packages integrate important factors such as organizational set up, roles, and responsibilities, coordination and rights-based negotiation. A unifying policy for SSA should best emerge for isolated individual country experiences. A starting point could focus on environmental entitlements.

References

- Agrawal, A. and K. Gupta. 2005. "Decentralization and Participation: The Governance of Common Pool Resources in Nepal's Terai." *World Development* 33 (7): 1101–1114.
- Agrawal, A. 1999. "Community-in-Conservation: Tracing the Outlines of an Enchanting Concept." In *A New Moral Economy for India's Forests? Discourses of Community and Participation*, edited by R. Jeffery and N. Sundar. New Delhi: Sage Publications.
- Andersson, K. 2002. "Can Decentralization Save Bolivia's Forests? An Institutional Analysis of Municipal Forest Governance." Ph.D. diss., Indiana University, Bloomington.
- 2004. "Decentralization Reforms: Help or Hindrance to Forest Conservation?" Presented at the Conference of the International Association for the Study of Common Property (IASCP) in Oaxaca, Mexico, August 9–13, 2004.
- Andersson, K. P., C. C. Gibson, and F. Lehoucq. 2006. "Municipal politics and forest governance: Comparative analysis of decentralization in Bolivia and Guatemala." *World Development* 34 (3): 576–595.
- Anne, L. and A. Keeler. 2010. "Hybrid institutions: applications of common property theory beyond discrete property regimes." *International Journal of the Commons* 4 (1): 571–596.
- Battista, F. and S. Baas. 2004. "The role of local institutions in reducing vulnerability to recurrent natural disasters and in sustainable livelihoods Development." Consolidated Report on Case Studies and Workshop Findings and Recommendations, Rural Institutions and Participation Service, Food and Agricultural Organization (FAO). Accessed 10 Nov 2017. <http://www.fao.org/docrep/009/a0879e/a0879e00.htm>.
- Baumann, P., R. Ramakrishnan, M. Dubey, R. K. Raman, and J. Farrington. 2003. *Institutional Alternatives and Options for Decentralised Natural Resource Management*

- in India*. Working Paper, Overseas Development Institute. Accessed 10 Nov 2017. <https://www.odi.org/publications/1795-institutional-alternatives-and-options-decentralised-natural-resource-management-india>.
- Buchenrieder, G. and R. A. Balgah. 2013. "Sustaining livelihoods around community forests. What is the potential contribution of wildlife domestication?" *The Journal of Modern African Studies* 51 (1): 57–84.
- Carney, D. and J. Farrington. 1998. *Natural Resource Management and Institutional Change*. Routledge: London.
- Coase, R. 1960. "The Problem of Social Cost." *The Journal of Law & Economics* (3): 1–44.
- Crush, J. S. 1980. "National parks in Africa: A note on a problem of indigenization." *African Studies Review* 23 (3): 21–32.
- Cundill, G. and C. Fabricius. 2010. "Monitoring the Governance Dimension of Natural Resource Co-management." *Ecology and Society* 15 (1). Accessed 10 Nov 2017. <https://www.ecologyandsociety.org/vol15/iss1/art15/>.
- Dalal-Clayton, B., D. Dent, and O. Dubois. 2003. *Rural planning in Developing Countries: Supporting Natural Resource Management and Sustainable Livelihoods*. London: Earthscan Publishing Ltd.
- DeGeorges, P.A. and B. R. Reilly. 2009. "The Realities of Community Based Natural Resource Management and Biodiversity Conservation in Sub-Saharan Africa." *Sustainability* 1 (3): 734–788.
- Department Environment and Water (Dutch Ministry of Foreign Affairs). 2006. "Knowledge, innovation and research strategy." The Hague: Ministry of Foreign Affairs.
- Devereux, S. 2001. "Sen's Entitlement Approach: Critiques and Counter-critiques." *Oxford Development Studies* 29 (3): 245–263.
- Dixon, A. B. and A. P. Wood. 2007. "Local institutions for management of wetlands in Ethiopia: Sustainability and state intervention." In *Community-based water law and water resource management reforms in developing countries*, edited by B. van Koppen, M. Giordano, and J. Butterworth, 130–145. CAB International.
- Donnelly-Roark, P. K. Ouedraogo, and Y. Xiao. 2001. "Can Local Institutions Reduce Poverty? Rural Decentralization in Burkina Faso." The World Bank, Policy Research Working paper No. 2677. Accessed 10 Nov 2017. <https://openknowledge.worldbank.org/handle/10986/19551>.
- Egute, T. O. 2012. *Modern law and tradition in forest heritage conservation in Cameroon. The case of Korup*. Cottbus: Bradenburgische Technische Universität.
- Fabricius, C. 2004. "Historical Background to Community-Based Natural Resource Management." In *Rights, Resources and Rural Development Community-based Natural Resource Management in Southern Africa*, edited by C. Fabricius, C. and E. Koch. Oxfordshire and New York: Earthscan.
- Fabricius, C. and E. Koch. 2004. "Introduction." In *Rights, Resources and Rural Development. Community-based Natural Resource Management in Southern Africa*, edited by C. Fabricius and E. Koch. Oxfordshire and New York: Earthscan.

- Farrington, J. and C. Boyd. 1997. "Scaling up the Participatory Management of Common Pool Resources." *Development Policy Review* 15: 371–391.
- Feely, J. M. 1986. "The Distribution of Iron Age Farming Settlements in the Transkei." MA thesis, University of Natal, Durban.
- Folke, K., F. Berkes, and J. Colding. 1998. "Ecological practices and social mechanisms for building resilience and sustainability." In *Linking Social and Ecological Systems*, edited by F. Berkes and K. Folke, 414–436. Cambridge: Cambridge University Press.
- Galanter, M. 1981. "Justice in many rooms: Courts, Private Ordering, and Indigenous Law." *Journal of Legal Pluralism* (19): 1–47.
- Gasper, D. 1993. "Entitlements Analysis: Relating Concepts and Contexts." *Development and Change* (24): 679–718.
- Ghai, D. 1992. "Conservation, Livelihood and Democracy: Social Dynamics of Environmental Changes in Africa." Discussion Paper 33. United Nations Research Institute for Social Development. Accessed 10 Nov 2017. [http://www.unrisd.org/unrisd/website/document.nsf/\(httpPublications\)/1CB8A06B642CCFE680256B640053997B?OpenDocument](http://www.unrisd.org/unrisd/website/document.nsf/(httpPublications)/1CB8A06B642CCFE680256B640053997B?OpenDocument).
- Goldman, M. J. and F. Riosmena. 2013. "Adaptive capacity in Tanzanian Maasailand: Changing Strategies to Cope with Drought in Fragmented Landscapes." *Global Environmental Change* 23: 588–597.
- Green Forest Foundation. 2016. "Technical capacity building report of FORUDEF and CAD." Unpublished Report.
- Gupta, J., C. Termeer, J. Klostermann, S. Meijerink, M. van den Brink, P. Jong, S. Nootboom, E. Bergsma. 2010. "The adaptive capacity wheel: A Method to Assess the Inherent Characteristics of Institutions to Enable the Adaptive Capacity of Society." *Environmental Science Policy* 13 (6): 459–471.
- Hagedorn, K. 2008. "Particular requirements for institutional analysis in nature-related sectors." *European Review of Agricultural Economics*. 35 (3): 357–384.
- 2015. "Can the Concept of Integrative and Segregative Institutions Contribute to the Framing of Institutions of Sustainability?" *Sustainability* 7 (1): 584–611.
- Hardin, G. 1968. "The tragedy of the commons." *Science* 162 (3859): 1243–1248.
- 1978. "Political requirements for preserving our common heritage." In *Wildlife and America*, edited by H. P. Bokaw, 310–317. Washington DC: Council on Environmental Quality.
- Harsanyi, J. and R. Selten. 1988. *A General theory of Equilibrium Selection in Games*. Cambridge, MA: MIT Press.
- Hayammi, Y. and V. W. Ruttan. 1985. *Agricultural Development: A Global Perspective*. Baltimore: Johns Hopkins University Press.
- Heltberg, R. 2001. "Property rights and natural resource management in the developing countries." *Journal of Economic Surveys* 16 (2): 189–214.

- Hilhorst, T. 2008. "Local Governance Institutions for Natural Resource Management in Mali, Burkina Faso and Niger." KIT Working Papers Series G1. Amsterdam: KIT.
- Hobbes, T. 2006. *Leviathan*. London: A&C Black.
- Homman S. 2004. *Indigenous knowledge of Borana pastoralists in natural resource management: a case study from southern Ethiopia*. Göttingen: Cuvillier Verlag.
- Hounkonnou, D., D. Kossou, T. W. Kuyper, C. Leeuwis, E. S. Nederlof, N. Niels Röling, O. Owuraku Sakyi-Dawson, M. Traoré, and A. and van Huis. 2012. "An innovation systems approach to institutional change: Smallholder development in West Africa." *Agricultural Systems* 108: 74–83.
- Inamdar, A., H. de Jode, K. Lindsay, and S. Cobb. 1999. "Capitalising on nature: protected area management." *Science* 283: 1856–7.
- Kepe, T. and I. Scoones. 1999. "Creating grasslands: Social institutions and environmental change in Mkambati Area, South Africa." *Human Ecology* 27 (1): 29–54.
- Kimengsi, J. N. 2014. "Threats to Ecotourism Development and Forest Conservation in the Lake Barombi Mbo Area of Cameroon." *Journal of International Wildlife Law and Policy* 17 (4): 213–230.
- Kimengsi, J. N., R. A. Balgah, and J. N. Tosam. 2016. "Improving Cocoa Processing and Marketing for Conservation in the Mount Cameroon National Park Communities: Challenges and Way Forward." *Greener Journal of Social Sciences* 6 (1): 1–10.
- Koch, E. 2004. "Political economy, governance and community-based natural resource management." In *Rights, Resources and Rural Development Community-based Natural Resource Management in Southern Africa*, edited by C. Fabricius and E. Koch. Oxfordshire and New York: Earthscan.
- Leach, M., R. Mearns, and I. Scoones. 1997. "Challenges to community-based sustainable development: Dynamics, entitlements, institutions." *IDS Bulletin* 28 (4): 4–14.
- 1999. "Environmental Entitlements: Dynamics and Institutions in Community-Based Natural Resource Management." *World Development* 27 (2): 225–247.
- Mapfumo, P., S. Adjei-Nsiah, F. Mtambanengwe, R. Chikowo, K. E. and Giller. 2013. "Participatory action research (PAR) as an entry point for supporting climate change adaptation by smallholder farmers in Africa." *Environmental Development* 5: 6–22.
- McGinnis, M. 2002. "Polycentricity and the core of governance." In Proceedings of the Preliminary draft Prepared for the Discussion in Political Science Y673 Seminar, Vincent and Elinor Ostrom Workshop at Indiana University, Bloomington, IN, USA, 20 March 2002.
- Meliyo, J., H. Mansoor, and J. G. Mowo. 2006. "The Baga Watershed characterization: A step for scaling out technologies." In *Integrated natural resources management in practice: Enabling communities to improve mountain livelihoods and landscapes*, edited by T. Amede, L. German, S. Rao, C. Opondo, and A. Stroud. Accessed 10 Nov 2017. <https://cgspace.cgiar.org/bitstream/handle/10568/56567/10.1.1.99.5702.pdf?sequence=1>.

- Merrey D. J., P. Drechsel, F. W. T. Penning de Vries, and H. Sally. 2005. "Integrating "livelihoods" into integrated water resources management: taking the integration paradigm to its logical next step for developing countries." *Regional Environmental Change* 5 (4): 197–204.
- Mogoi, J., E. Obonyo, J. Tanui, D. Catacuta, J. Mowo, and P. Ongugo. 2010. "Strengthening Local Institutions as Avenues for Climate Change Resilience." World Agroforestry Centre. Accessed 10 Nov 2017. <http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/7105/839.pdf?sequence=1>.
- Mowo, J., Z. Adimassu, K. Masuki, C. Lyamchai, J. Tanui, and D. Catacutan. 2011. "The Importance of Local Traditional Institutions in the Management of Natural Resources in the Highlands of Eastern Africa." World Agroforestry Centre, Working Paper No 134. Accessed 10 Nov 2017. <https://www.worldagroforestry.org/downloads/Publications/PDFS/WP11085.pdf>.
- Murphree, M. W. 1997. "Articulating voices from the commons, interpretation, translation and facilitation: Roles and modes for common property scholarship." *Society and Natural Resources* 10 (4): 415–417.
- Ngoufo, R., T. D. Hubert, and M. Waltert. 2014. *Improving the legal framework of wildlife resources in Cameroon*. Göttingen: Georg-August-Universität Göttingen Universitätsverlag.
- North, D. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
- Orchard, S. E., L. C. Stringer, and C. H. Quinn. 2015. "Environmental Entitlements: Institutional Influence on Mangrove Social-Ecological Systems in Northern Vietnam." *Resources* 4 (4): 903–938.
- Ostrom, E. 1990. *Governing the Commons. The Evolution of Institutions for Collective Action*. New York: Cambridge University Press.
- 2005. *Understanding Institutional Diversity*. Princeton: Princeton University Press.
- Ostrom, E., L. Schroeder, and S. Wynne. 1993. *Institutional Incentives and Sustainable Development*. Boulder, Co.: Westview Press.
- Oyono, P. R. 2004. *Environmental governance in Africa. Institutional deficit, representation and decentralized forest management in Cameroon*. Washington DC: World Resources Institute and Center for International Forestry Resources.
- Polterovich, V. M 2001. "Institutional Traps." In *The New Russia: Transition gone Awry*, edited by L. R. Klein and M. Pomer, 93–116. Stanford: Stanford University Press.
- Putnam, R. 1993. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton: Princeton University Press.
- Ramakrishnan, R. S. 2004. "Sustainable cultures to sustainable development." Paper presented at the Interdisciplinary Research and Management in Mountain Areas Conference, Banff, Canada. 23–26 September 2004.
- Rhodes University, Unitra and Fort Cox. 2001. "A Monitoring System for Community Forestry: Combining Scientific and Local Knowledge in the Eastern Cape." Department of Water Affairs and Forestry Research Report RU1/100.

- Richards, M. 1997. *Missing a Moving Target? Colonist Technological Development on the Amazon Frontier*. London: ODI.
- Sen, A. 1981. *Poverty and Famines: an Essay on Entitlement and Deprivation*. Oxford: Oxford University Press.
- 1984. *Resources, Values and Development*. Oxford: Basil Blackwell.
- Sikor, T., E. Barlösius, and W. Scheumann. 2008. “Introduction: Public–Private Relations and Key Policy Issues in Natural Resource Governance.” In *Public and private in natural resource governance: false dichotomy?*, edited by T. Sikor, 1–18. London: Earthscan.
- Silberberger, M. and J. Koeniger. 2016. “Regulation, Trade and Economic Growth.” *Economic Systems* 40 (2): 308–322.
- Stroud, A., E. Obin, R. Kandelwahl, F. Byekwaso, C. Opondo, L. German, J. Tanui, K. Kyampaire, B. Mbwesa, A. Ariho, Africare and Kabale District Farmers’ Association. 2006. “Managing Change: Institutional Development under NAADS: A Field Study on Farmer Institutions Working with NAADS.” AHI Working Paper No. 22. Accessed 11 Nov 2017. <http://www.worldagroforestry.org/downloads/Publications/PDFS/RP13690.pdf>.
- Tem, P. M. 2016. “Flaws in the native administration system in Southern Cameroons. A factor for the 1949 creation of local government.” *Afro Asian Journal of Social Sciences* 7 (1): 1–24.
- Thorp, R., F. Stewart, and A. Heyer. 2005. “When and how far is group formation a route out of chronic poverty?” *World Development* 33 (6): 907–920.
- Uphoff, N. 1986. *Local Institutional Development: An Analytical Sourcebook, with Cases*. West Hartford: Kumarian Press.
- Vanlauwe, B., D. Coyne, J. Gockowski, S. Hauser, J. Huising, C. Masso, G. Nziguheba, M. Schut, and P. Van Asten. 2014. “Sustainable intensification and the African smallholder farmer.” *Current Opinion in Environmental Sustainability* 8: 15–22.
- Zweynert, J. 2007. “Interests versus Culture in the Theory of Institutional Change?” Hamburg Institute of International Economics (HWWI) research paper 5–3. Accessed on 11 Nov 2017. http://www.hwwi.org/publikationen/research-paper/publikationen-einzelansicht/interests-versus-culture-in-the-theory-of-institutional-change.html?no_cache=1.
- Zweynert, J. and N. Goldschmidt, N. 2005. “The Two Transitions in Central and Eastern Europe and the Relation between Path Dependent and Politically Implemented Institutional Change.” Freiburg Discussion papers on Constitutional Economics 05(3). Accessed on 11 Nov 2017. https://www.econstor.eu/bitstream/10419/4350/1/05_3bw.pdf.