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What can climate-smart agricultural landscapes learn from the *gestion de terroirs* approach?

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Highlights

- The *gestion de terroirs* approach, practiced largely in French-speaking African countries, is a potentially rich experience base for developing climate-smart landscapes
- When institutionalizing a climate-smart landscape approach, spatial variation of the landscape's boundaries needs to be taken into account
- Careful design and implementation of institutional mechanisms such as multi-stakeholder planning, clarification of rights and decentralized governance as well as strengthened stakeholder and institutional capacity are key elements needed for successful climate-smart landscapes
- Sustainability of climate-smart landscape approaches will require supportive policies at multiple scales and applying context-specific, locally-relevant incentives

1. Introduction

Climate-smart agricultural landscapes operate on the principles of integrated landscape management with explicit incorporation of adaptation and mitigation goals along with improvements in food security, rural livelihoods, biodiversity conservation and ecosystem services (Scherr et al., 2012; Harvey et al., 2014). Such approaches are driven by the ultimate goal of ensuring resilience, productivity and sustainability with emphasis placed on adaptive management, stakeholder involvement and the simultaneous achievement of multiple objectives at the landscape scale (Sunderland et al., 2013). While the concept of climate-smart landscapes is growing, its operationalization is limited and varied. There is still a need for a number of transformative changes in current policies, institutional arrangements, and funding mechanisms to bring climate-smart landscapes from concept to reality (Scherr et al., 2012; Harvey et al., 2014). In particular, institutional and governance concerns are identified as the most severe obstacles to implementation (Sayer et al., 2013).

To foster implementation of climate-smart landscapes, earlier methodologies and integrated management approaches can hold great potential to learn from. One of these earlier methodologies and approaches implemented to advance goals related to food production, biodiversity or ecosystem conservation and rural livelihoods is the *gestion de terroirs* (GT) approach. The GT approach emerged in the 1990s within the francophone West African states to cope with the failures of previous rural development programmes (e.g., Integrated Rural Development Programmes (IRDPs); the Sustainable Livelihoods (SL) approach; Community Based Natural Resource Management (CBNRM)) (Painter, 1993). Such previous programmes were technically-oriented, over-centralized, sectoral or multi-sectoral but without any real integration, or consideration of the social dimension of development and by-passing local participation (Dengbol, 1996). Therefore the GT approach was the first in this region which actually applied an approach including multidisciplinary, multi-stakeholders and community-driven management (Cleary, 2003). It was then adopted by a myriad of government projects, donors and Non-Governmental Organizations (NGOs) operating in West Africa to address agricultural development in a more holistic and participatory manner (Batterbury, 1998; Cleary, 2003). It featured prominently in environmental policy in Burkina Faso, Senegal, Mali, Côte d'Ivoire, and Niger (Batterbury, 1998). In 1994, in Mali alone, there were over two hundreds GT projects (Bassett et al., 2007).

Although the GT approach no longer forms a part of mainstream development, it has a longer history than most of the other approaches. Therefore, exploration of the strengths and weaknesses associated to the GT approach holds the potential for climate-smart landscape approaches to learn from. This chapter includes an outline of the concepts of the GT and climate-smart landscape approaches, and emphasizes their main similarities and differences. It then examines the main weaknesses of the GT approach and analyzes how lessons learned can be used to enhance implementation of climate-smart landscapes approaches.

2. Comparison of approaches: the *gestion de terroirs* versus climate-smart landscapes

2.1 The *gestion de terroirs* approach

The GT approach focuses on a socially and geographically defined space – so-called '*terroir*' – within which communities' resources and associated rights are located in order to satisfy their needs (Cleary, 2003). The *terroir* is not a concept of physical geography only but it is the basic management unit of rural development taking into account both the physical data and the socio-economic and cultural context (Bassett et al., 2007). The *terroir* represents the socio-natural heritage of a local community with its internal social organization and pattern of resource use (Bassett et al., 2007).

The GT approach calls for a rational utilisation of all resources of the *terroir* (natural, human, financial, etc.) and operates in three interrelated systems (Toulmin, 1994; Batterbury, 1998):

- **The technical system** (e.g., restoring and improving the potential of natural resources, improving the security of agricultural, pastoral and forest production, increasing soil fertility);

- **The socio-economic system** (e.g., training individuals and groups, reinforcing and strengthening local institutions at the *terroir* level)
- **The legal system** (e.g., enabling better security and enforcement of land rights)

The GT approach is a comprehensive multisectoral approach that requires multidisciplinary capacity at the local level. The GT approach is bottom-up, community-driven and decentralized to the *terroir* level. It builds upon the principle that local communities should be responsible for their own development (Cleary, 2003) and therefore seeks the empowerment of local communities through training and education. It relies on participatory appraisal, identifying local priority concerns and involving local communities in processes of planning and decision-making (Mando et al., 2001; see Figure 4.1). It also focuses on developing and reinforcing local-level institutions and bodies/committees to be able to implement sustainable management plans (Cleary, 2003). As part of this, the GT approach supports devolution of decision-making powers from the state and NGOs to the community or village level.

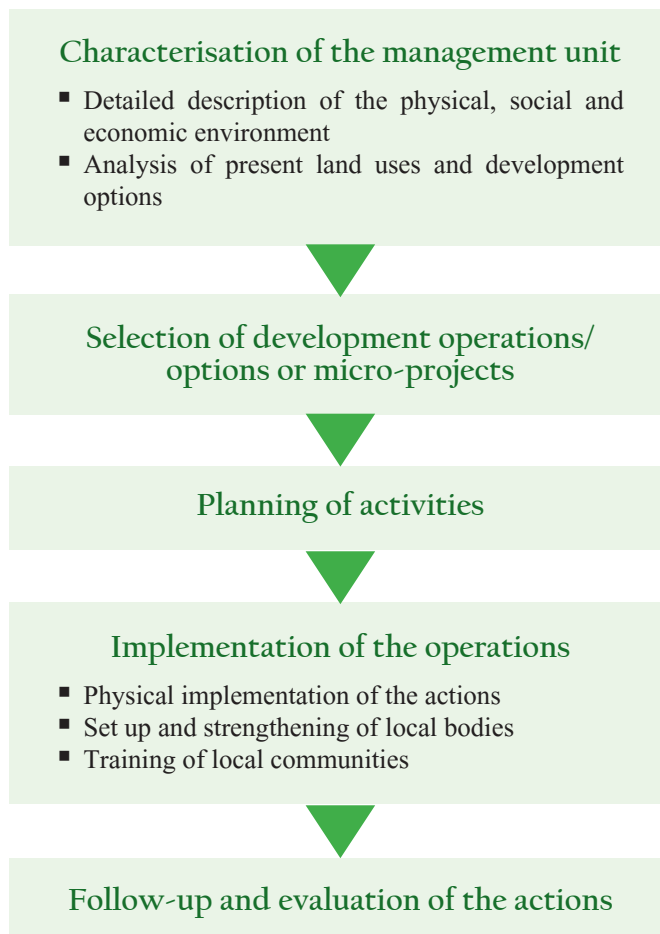


Figure 4.1 Key steps for implementation of GT (Mando et al., 2001).

2.2 The climate-smart landscape approach

Climate-smart landscapes have multiple functions, ecological, social and economic, and operate on the principles of integrated landscape management, but with focus on emission reductions, climate change adaptation and low emission development pathways. For example, Scherr et al. (2012) characterizes climate-smart landscapes by three key features with the overall aim to build resilience and enhance adaptation and mitigation:

- Climate-smart practices at the field and farm scale such as mixed crop-tree systems and integrated soil and nutrient management
- Diversifying land uses across the landscape
- Sustainable management of different land use interactions between field, forest, grasslands and other land uses at the landscape scale

Multiple scales are also a key feature of climate-smart landscapes as understanding processes at the landscape scale requires understanding interactions at scales within and beyond the landscape (Bernard et al., 2013). For instance, understanding emissions reductions in a given community would require understanding behaviour of practices at plot, farm or forest management unit level as well as the driving forces such as markets and policies that are beyond the community boundary (Bernard et al., 2013). Multi-stakeholder planning has also been identified as a founding principle of climate-smart landscape approaches ensuring that all relevant stakeholders from planning authorities, local communities, producer groups, civil society business, and private investors are involved in planning processes to define and negotiate their priorities (Scherr et al., 2012). Other key principles for successful implementation and long-term management of climate-smart landscapes include continual learning and adaptive management, strengthened stakeholder capacity, decentralized governance, and secure systems for land and resource ownership, use and access rights (Scherr et al., 2012).

2.3 Key similarities and differences between the GT and climate-smart landscape approaches

Climate-smart landscape and GT approaches share a number of similar features in terms of their multisectoral, multidisciplinary and multistakeholder approach as well as sharing the aim at achieving multiple objectives (see Table 4.1). Institutional and governance processes such as participatory processes, decentralization and clarification of land rights are emphasized as key levers in both approaches.

Key differences between the two approaches lie in the management unit itself and in their differing focus on linkages with other spatial levels. In many GT projects, the *terroir* has been limited to the village level (so-called *terroir* villageois) or to an inter-village space that would still share the same social and economic space. Therefore the *terroir* has mostly been limited to a tightly defined geographical area where land-use patterns were similar, whereas landscapes are much broader and often described as complex social-ecological systems made up of a mosaic of different land uses (Sayer et al., 2013; Milder et al., 2014). The GT approach focuses at a micro-level rather than tackling broader meso-scale development issues (Quan & Nelson, 2005) and does not address broader ecosystem management issues. Another key difference is that the GT approach has very little linkages with the macro-level, although some governments (such as in Burkina Faso) had introduced some change while cementing GT in national level policy-making. Generally, the GT approach does not provide a framework within which

Table 4.1 Key similarities and differences between the GT and climate-smart landscape approaches.

Feature	<i>Gestion de terroir</i> approach	Climate-smart landscape approach
Management unit	- <i>Terroir</i> , often limited to village or inter-village scale	- The landscape
Land-use patterns	- Homogenous (in the sense that farmer's practices are similar)	- Heterogeneous in land uses and land use patterns
Sectoral focus	- Multisectoral (but with a strong bias towards agriculture)	- Multisectoral
Field of expertise	- Multidisciplinary	- Multidisciplinary
Key objectives	<ul style="list-style-type: none"> - Restoration and improvement of natural resources, soil fertility and food production - Security of land rights - Capacity-building of individuals and reinforcement and strengthening of local level institutions at the <i>terroir</i> level (Batterbury, 1998) 	<ul style="list-style-type: none"> - Human well-being - Food and fiber production - Climate change adaptation and mitigation - Conservation of biodiversity and ecosystem services (Scherr et al., 2012)
Stakeholder involvement	<ul style="list-style-type: none"> - Incorporation of the local knowledge and identification of local priority concerns - Involvement of local stakeholders in processes of planning and development and in decision-making - Empowerment of local communities through training and education (Cleary, 2003) 	- Emphasis on participatory processes, multi-stakeholder negotiation and recognition of local communities
Integration of actions	- Drawing on synergies between actions to more efficiently generate benefits	- Ecological, social and economic interactions among different parts of the landscape managed to seek positive synergies among interests and actors or reduce negative tradeoffs (Scherr et al., 2012)
Flexibility	<ul style="list-style-type: none"> - Accommodates changing needs - Iterative process 	- Promotion of adaptive strategies based on dynamic social and economic changes
Linkages with other scales	- Focus at the micro level	- Linkages between the micro, meso and macro levels

different village communities, social groups and stakeholders can negotiate sustainable and equitable resource management arrangements or resolve resource conflicts on a wider territorial scale (Quan & Nelson, 2005). In this respect the climate-smart landscape approach is positioned to go beyond such challenges experienced by GT and promote both cooperation between the micro, meso and macro levels and increased connection with national and global strategies.

3. Enhancing operationalization of the climate-smart landscape approach

Building upon the different criticisms of the GT approach, here such limitations are examined to identify key lessons that can be drawn upon to ensure better implementation of the climate-smart landscape approach.

3.1 Space and boundaries

The *terroir* idea assumed that people belong in communities that are clearly locatable within fixed and bounded geographical spaces as argued by Keeley and Scoones (2003). However, the boundaries of the geographical area of intervention are variable and largely according to the type of people's activity. The agricultural *terroir* is not the same as the pastoral *terroir*, or the hunter or fisherman *terroir* for instance. The key limitation of the GT approach is that in most cases, the geographical area was identified almost exclusively in relation with the practice of agriculture and ignored for instance that of pastoralism. Yet migrant livestock farming is the main source of income for millions of persons in the world and in West Africa in particular, with pastoralism being defined by its spatial mobility. Therefore the limits of the geographical area of the *terroir* for a farmer do not correspond to those of a pastoralist. Holistic approaches to rural development such as GT or climate-smart landscapes should not ignore the needs of important livelihoods also present. When implementing and institutionalizing the climate-smart landscape approach, it will be necessary to take into account the spatial variation of landscape boundaries. Local diversity has to be acknowledged and it is important not to assume uniform community interests with the risk of ignoring the complex social, economic and cultural factors that affect how local communities can sustainably use natural resources.

3.2 Multi-stakeholder planning and local accountability

Various organizational committees (*Comités villageois*) have been set up to manage GT in francophone Africa. In some instances, pre-existing indigenous institutions were replaced by new externally imposed village councils rather than building upon the existing institutional entities (Quan & Nelson, 2005). A number of experiences in different provinces of Burkina Faso (Cleary, 2003) showed that institutions which failed to build on local culture were unsustainable despite being able to attract external funds (Quan & Nelson, 2005). Furthermore, due to their inability to effectively represent local interests, the composition of such *Comités villageois* has been problematic. Such experiences with the GT implementation has shown that balancing representation between the local communities, project staff and government agency representatives is critical insuring that local communities are not overlooked within technical debates (Sayer et al., 2013). But balancing interests within the local community is equally important as in many instances committees were dominated by local elites and/or excluded some resource users such as pastoralists, settlers and sharecroppers. The mode for determining those serving on the

planning committees was also important. In some GT projects there was a representative election allowing a certain degree of democracy, but in many cases this led to exclusion of some social groups, in particular, the poorest and most marginalized rural populations such as nomadic groups. Therefore, in other GT projects, the approach chosen was to appoint representatives based on locally-determined criteria to better reflect the existing balance of ethnic groups, gender, social groups and age (Cleary, 2003). Learning from these experiences, to better implement the climate-smart landscape approach, both composition and method of inclusion need to be considered with cautiousness to ensure effective representation of all stakeholder groups.

3.3 Effective decentralized governance over land resources

Transfer of decision-making powers over the management and use of natural resources from government structures to local people is described as a central feature of the GT approach (de Haan, 1998; Cleary, 2003). However, there has been a huge gap between the theory and the reality. Most GT projects have been implemented rather conventionally because the legislation never conferred legal right to community-based institutions to exercise public authority over their resources (Mando et al., 2001). Therefore institutional local structures or committees set up by GT projects or by donor agencies only had informal decision-making powers not legally recognized. This severely hampered their ability to effectively manage land use (Cleary, 2003). Despite sincere attempts in some countries, such as Mali, to apply a policy of decentralization through application of the GT approach (see Box 4.1) this has not gone in hand with serious steps towards redefining the role of the state vis-à-vis the local population (Degnbol, 1996).

In some GT projects, there was an attempt to transfer financial responsibility for rural land use planning and natural resource management to community-based land use and planning committees. The committees were given control of a credit fund provided by the project to implement its activities. These committees were in charge of setting priorities to allocate the limited funds available within the different communities. The committees were also expected to call for tenders, select and sign contracts to build infrastructure and

Box 4.1

Mali's Decentralization Programme and GT approach (Degnbol, 1996; Woodhouse et al., 2000)

In 1993, the National Assembly in Mali adopted a law illustrating its adherence to a policy of decentralization through application of the GT approach. *Collectivités* or legal entities (e.g., region, commune) were recognized as capable of managing their own natural resources within their *terroir*. However, the GT focused on decision-making structures at village-level through the formation of GT committees. This discrepancy between legal authority and decision-making responsibility did not allow the committees to have legal standing within the new decentralized framework. Therefore the resource management decisions of the GT committees were not considered legally binding hampering the credibility of such GT committees. Experience from Mali seems to suggest that the real challenge to the GT approach, in this case, was redefining the role of the state vis-à-vis the local population. For the initiative to have been successful they needed to have started with examining issues of power relations, ideologies and attitudes of government vis-à-vis local populations.

implement other development activities (Mando et al., 2001). In practice, however, the approach did not fully live up to expectations because in addition to the above-mentioned issues, there was a significant lack of capacity within a number of the GT committees.

If decentralized governance is to happen within climate-smart landscape approaches, there will first need to be clear policies outlining who is given decision-making power over resources as well as more reflection on how to transfer authority from central government authorities to local government staff, and from government structures to local populations. Second, operational decentralized governance requires strengthened stakeholder capacity-building for effective participation, and acceptance of various roles and responsibilities (Sayer et al., 2013).

3.4 Clarification of rights and resource tenure

The process of clarifying and recording land rights is perceived as critical in both the GT and climate-smart landscape approach. In an attempt to clarify resource tenure, the GT approach has used village mapping techniques that create the village *terroir* as a defined territory with distinct boundaries. However, in areas where resource boundaries have historically been flexible and negotiated, the delineation of village spaces has exacerbated existing or latent land-use conflicts (Bassett et al., 2007). The concept of '*terroir*' was sometimes reinterpreted as 'for locals only' and instrumentalized to exclude others in the name of local heritage (Bassett et al., 2007). This is what happened in Côte d'Ivoire where certain groups asserted their indigenous privileges to resources as a means of dispossessing immigrants of their farms. This produced *terroirs* of violence that were at the centre of the the September 19th Côte d'Ivoire rebellion in 2002 (Bassett et al., 2007). Rather than achieving increased productivity and conservation, such attempts for clarifying rights and resource tenure generally led to the opposite (Bassett et al., 2007). In order to avoid such pitfalls while implementing climate-smart landscape approaches, there should be specific focus on ensuring that secondary land rights of non-landholding groups are preserved. There will be need for carefully negotiated processes and a legitimate conflict resolution and recourse system (Scherr et al., 2012). These can be supported by improving the justice system, making courts more accessible, and devolving conciliation powers to local authorities or customary chiefs (Cotula et al., 2004).

3.5 Supportive policy and legal framework

Most GT programmes took place in a policy and institutional vacuum (Cleary, 2003) and many projects therefore operated in an autonomous manner even though formally attached to government structures (Degnbol, 1996). Without an overarching framework, there have been different methodologies and implementation approaches for the GT projects which have contributed to extend the boundaries of methodological innovation but which have also not always respected the principles of active participation of the local population (Cleary, 2003). The only exception to this lack of policy framework is the Government of Burkina Faso which made GT a specific policy in their efforts to promote rural development and created the *Programme National de Gestion de Terroir* within the Ministry of Agriculture to ensure a harmonised and coordinated approach (Cleary, 2003).

Furthermore, the focus of the GT approach at the micro-level has resulted in a very limited impact on influencing wider institutional and policy issues, and did not facilitate

cross-sectoral coordination of government programmes in responding to local priorities (Quan & Nelson, 2005). This suggests that for more effective and efficient programmes, there is a need for greater cooperation between the micro, meso and macro levels and above all, the need for acknowledging climate-smart landscape approaches within national decision-making processes. It is important that the landscape approach can influence wider policy and institutional issues so that effective land use planning and management can happen in a coherent manner from local to national levels.

3.6 Maintaining local incentives

In the history of GT implementation, there has been some disillusionment of local community involvement, much of which only encompassed participating in meetings and making plans over multiple year time frames without manifestation of any corresponding tangible benefits (Cleary, 2003). Furthermore, there has been a lack of attention to source sustainable financing for such projects with most GT programmes having been reliant on external financing (Quan & Nelson, 2005). Therefore, while climate-smart landscape approaches are being further developed, it is critical to develop local incentives which relate to direct, concrete benefits. Local incentives for climate-smart landscapes will be guided by demand for reduced emissions, high-carbon stock landscapes and by-products and can be financial (e.g., compensation for opportunity costs) or non-financial (e.g., increased range of livelihood opportunities, public infrastructure, access to technical and credit services, formalizing land tenure and local resource rights, and intensifying productivity on non-forest lands).

4. Conclusion

The GT approach was very innovative by leading the way in participatory approaches, empowering local communities, institution building and promoting decentralization. However, a review of the approach suggests the reality often fell far short of the rhetoric and promise of GT. Therefore lessons learnt from the GT approach are highly valuable in the process of operationalizing climate-smart landscape approaches. First, when implementing climate-smart landscape approaches, it will be necessary to take into account the spatial variation of landscape boundaries based on the various type of people's activity and livelihoods. Second, it is also crucial to emphasize the importance of careful design and implementation of key institutional mechanisms such as multi-stakeholder planning, decentralized governance and clarification of rights. Thus, effective multi-stakeholder planning processes need to build upon historical, cultural and institutional realities, acknowledge heterogeneous interests and support genuine accountability and representativeness. Furthermore, integration of local institutions into decentralized legal, economic and institutional frameworks should be encouraged. Additionally, clarification of rights needs to be included within the development of a legitimate conflict resolution and recourse system. Overall, the review of the GT approach revealed the importance of strengthened stakeholder capacity and extensive institution building. Eventually, climate-smart landscape approaches need to be included in a clear policy and institutional framework to support the long-term adoption of sustainable practices in landscapes. Context-specific local incentives are also needed to support the long-term adoption of sustainable practices in landscapes. These various lessons should inform future investments in institutional and governance development to support climate-smart landscapes.

References

- Batterbury, S. (1998). *Local environmental management, land degradation and the 'Gestion des terroirs' approach in west Africa: policies and pitfalls*. Uxbridge, UK: Department of Geography & Earth Sciences, Brunel University.
- Bassett, T. J., Blanc-Pamard, C., & Boutrais, J. (2007). Constructing Locality: The Terroir Approach in West Africa. *Africa*, 77, 104-129. doi:10.3366/afr.2007.77.1.104
- Bernard, F., Minang, P. A., van Noordwijk, M., Freeman, O. E., & Duguma, L. A. (Eds.) (2013). *Towards a landscape approach for reducing emissions: substantive report of Reducing Emissions from All Land Uses (REALU) project*. Nairobi, Kenya: World Agroforestry Centre (ICRAF).
- Cleary, D. (2003). *People-centred approaches: A brief literature review and comparison of types*. Rome, Italy: Food and Agriculture Organization of the United Nations (FAO).
- Cotula, L., Toulmin, C., & Hesse, C. (2004). *Land tenure and administration in Africa: lessons of experience and emerging issues*. London, U.K.: International Institute for Environment and Development.
- de Haan, L. (1998). Gestion de Terroir at the Frontier: village land management including both peasants and pastoralists in Benin. In: Bruins, H.J. & Lithwick, H. (Eds.), *The Arid Frontier. Interactive Management Of Environment And Development*. Boston, MA: Kluwer Academic Publishers, 209-277.
- Degnol, D. (1996). *The Terroir Approach to Natural Resource management, Panacea Or Phantom?: The Malian Experience*. Bodoe, Norway: International Development Studies, Roskilde University.
- Harvey, C. A., Chacon, M., Donatti, C., Garen, E., Hannah, L., Andrade, A., ... Wollenberg, E. (2014). Climate-smart landscapes: opportunities and challenges for integrating adaptation and mitigation in tropical agriculture. *Conservation Letters*, 7(2), 77-90.
- Keeley, J., & Scoones, I. (2003). *Understanding Environmental Policy Processes: cases from Africa*. Sterling, VA: Earthscan.
- Mando, A., van Rheenen, T., Stroosnijder, L., & Nikiema, R. (2001). Village Land Use in Burkina Faso: "Gestion Terroir". In: Stroosnijder, L., & van Rheenen, T. (Eds.), *Agro-Silvo-Pastoral Land Use in Sahelian Villages*. Reiskirchen, Germany: Catena-Verlag.
- Milder, J. C., Hart, A. K., Dobie, P., Minai, J., & Zaleski, C. (2014). Integrated Landscape Initiatives for African Agriculture, Development, and Conservation: A Region-Wide Assessment. *World Development*, 54, 68-80.
- Painter, T. (1993). *Getting it right: linking concepts of action for improving the use of natural, resources in Sahelian West Africa*. Issues Paper no 40. London, U.K.: International Institute for Environment and Development.
- Quan, J., & Nelson, V. (2005). *Territory and rural development: concepts, methods and approaches*. Land and Territory Research Paper No. 2. University of Greenwich, UK: Natural Resources Institute.
- Sayer, J., Sunderland, T., Ghazoul, J., Pfund, J. L., Sheil, D., Meijaard, E., ... Buck, L. E. (2013). Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses. *Proceedings of the national academy of sciences*, 110(21), 8349-8356.
- Scherr, S. J., Shames, S., & Friedman, R. (2012). From climate-smart agriculture to climate-smart Landscapes. *Agriculture & Food Security* 1(12). doi:10.1186/2048-7010-1-12
- Sunderland, T., Sayer, J., & Minh-Ha, H. (Eds.) (2013). *Evidence-Based Conservation: Lessons from the Lower Mekong*. Bogor, Indonesia: CIFOR.
- Toulmin, C. (1994). *Gestion de Terroir: Concept and Development*. London, U.K.: International Institute for Environment and Development.
- Woodhouse, P., Bernstein, H., & Hulme, D. (Eds.) (2000). *African enclosures? The social dynamics of wetlands in drylands*. Oxford: James Currey; Trenton, NJ: Africa World Press; Cape Town: David Philip, and Nairobi: EAEP.

