2 Governance of the rangelands in a changing world

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Introduction: diagnosis of pastoralism and rangelands: drivers, constrains, impacts and consequences

Currently many countries around the world, including the most developed countries, consider pastoralism as a valuable economic and cultural asset (Kerven and Benke, 2011; Huntsinger et al., 2012). However, literature and research from the last decade of the twentieth century show a significant increase in the vulnerability of pastoralism, which has led to its decline (Dong et al. 2011). The reasons for this reduction depend on local and global drivers that have affected livestock keepers in different ways. Table 2.1 shows the status and tendencies of the main global pastoralist regions and some reasons for their situation.¹

Some of these drivers and trends may be addressed from a wider point of view, which suggests that pastoralism is evolving due to high-pressure global constraints that will continue to change pastoralism. These pressure factors are summarized in Table 2.2.²

Sweeping global changes, including but not limited to economics and climate, are applying great pressure on pastoralism worldwide and such impacts are likely to intensify in the future (Crane, 2010). These include changes in land use such as agricultural intensification, which displaces pastoralist activities, reduces livestock mobility or interrupts livestock tracks. Globalization implies major changes in pastoralist economies when they merge with nation-states (Galvin, 2009). There are also deep socioeconomic impacts affecting pastoralism, some of them closely related to land issues that are tearing apart the social framework of pastoralists, which often contributes to marginalization.

Despite of the global constraints addressed above, there are some common problems affecting governance and management worldwide. We try to describe the influence of common impacts over pastoralism worldwide and extract some generalizations from locally addressed factors in the case studies. Our analysis considers the different circumstances affecting pastoralists in developing versus industrialized countries. Weaknesses in governance observed in several developing countries reveals that intensification, encroachment, conflict or settlement affect territories similarly – whether caused by lack of governance or overregulation. Moreover, several social issues such as respect of traditional institutions, dealing
Table 2.1 Status and drivers of main pastoralist regions

<table>
<thead>
<tr>
<th>Zone</th>
<th>Main species</th>
<th>Status</th>
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<tbody>
<tr>
<td>Sub-Saharan Africa</td>
<td>Cattle, camel, sheep, goat</td>
<td>Reducing due to advancing agriculture</td>
</tr>
<tr>
<td>Europe</td>
<td>Small ruminants</td>
<td>Significant decline in some countries due to enclosure and advancing agriculture, but benefits from environmental subsidies maintaining some pastoral systems</td>
</tr>
<tr>
<td>North Africa</td>
<td>Small ruminants</td>
<td>Reducing due to advancing agriculture</td>
</tr>
<tr>
<td>Near East and South-Central Asia</td>
<td>Small ruminants</td>
<td>Locally declining due to enclosure and advancing agriculture</td>
</tr>
<tr>
<td>India</td>
<td>Camel, cattle, buffalo, sheep, goats, ducks</td>
<td>Declining due to advancing agriculture but peri-urban livestock production expanding</td>
</tr>
<tr>
<td>Central Asia</td>
<td>Yak, camel, horse, sheep, goat</td>
<td>Expanding following de-collectivization</td>
</tr>
<tr>
<td>Circumpolar</td>
<td>Reindeer</td>
<td>Expanding following de-collectivization in Siberia, but under pressure in Scandinavia</td>
</tr>
<tr>
<td>North America</td>
<td>Sheep, cattle</td>
<td>Declining with increased enclosure of land and alternative economic opportunities</td>
</tr>
<tr>
<td>Central America</td>
<td>Sheep, cattle</td>
<td>Declining with increased enclosure of land and alternative economic opportunities</td>
</tr>
<tr>
<td>Andes</td>
<td>Llama, alpaca, sheep</td>
<td>Contracting llama production due to expansion of road systems and European-model livestock production but increased alpaca wool production</td>
</tr>
<tr>
<td>South American lowlands</td>
<td>Cattle, sheep</td>
<td>Expanding where forests are converted to savannah but probably otherwise static</td>
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with local authorities, social backup of pastoralist activity, and interlocution may be addressed in the same way in any region of the world.

The loss of traditional management and institutions

Traditional management systems are losing authority, management capacity, civic representation and social integration as global economies and governance shift. Tribal, traditional and common institutions, based on social ties among densely
<table>
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<th>Factor</th>
<th>Impact</th>
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<tbody>
<tr>
<td>Introduction of high-input, high-output exotic breeds</td>
<td>Makes pastoralists dependent on effective infrastructure where input supplies irregular, creating periodic crises</td>
</tr>
<tr>
<td>World market in livestock products</td>
<td>Governments import cheap meat, milk, etc., to satisfy urban demand at expense of pastoral sector</td>
</tr>
<tr>
<td>Enclosing and fencing</td>
<td>Collapse of traditional ‘safety-nets’ in terms of long-distance migration in periods of climatic extremes</td>
</tr>
<tr>
<td>Encroachment on rangeland</td>
<td>Rangeland is being eliminated through the use of politically attractive but often uneconomic irrigation systems</td>
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<tr>
<td>International pressure for hygiene in slaughtering and dairying</td>
<td>Declining market for pastoralist and handmade products</td>
</tr>
<tr>
<td>Modern veterinary medicine</td>
<td>Increases in productivity and greatly enlarged herds</td>
</tr>
<tr>
<td>Modern weapons</td>
<td>Major decline in predator threats, increasingly violent ethnic conflict and high levels of insecurity</td>
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<tr>
<td>Declining prestige of dairy products</td>
<td>Terms of trade running constantly against pastoral livelihoods</td>
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<tr>
<td>Ideological interference by the state</td>
<td>Inappropriate social and management strategies adopted and maintained by a combination of subsidized inputs and implied violence</td>
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<td>Alternative calls on pastoral work</td>
<td>Pressure for children to go to school and younger people to earn cash outside the pastoral economy</td>
</tr>
<tr>
<td>Modern transportation infrastructure</td>
<td>Replaces systems where transport is a major element of economic production (llamas, horses)</td>
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<tr>
<td>Emergency relief, restocking and rehabilitation programs</td>
<td>Keeps non-viable households in pastoral areas, thereby accelerating the cycle of deficits</td>
</tr>
<tr>
<td>Conservation lobby</td>
<td>Pressure to turn previously pastoral land over to reserved wildlife/biodiversity regions with corresponding hard currency income from tourism</td>
</tr>
<tr>
<td>Legitimization of Indigenous and Community Conserved Areas</td>
<td>Growth in the number of ‘Community Based Natural Resource Management’ type projects with strong foundation in governance and participation and contributing to dual benefits from livestock keeping and biodiversity conservation</td>
</tr>
</tbody>
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populated rural areas, are now weakening due to urban migration, intensification of land uses, global market influence and loss of representation. Those systems, deeply rooted in rural societies, are suffering from new constraints as a result of their incapacity to adapt to current economic, social and political pressures. The reaction of governments, which is often to dismantle such institutions and replace them with government organizations, has serious social, economic and ecological consequences.

An alternative to such government practices could be modernizing, funding, empowering, assisting and advocating traditional pastoralist institutions so established populations can retain control over rangelands. Eleanor Ostrom’s pivotal work *Governing the Commons* (Ostrom, 1990) highlighted the efficiency of communal arrangements and the importance of self-regulation. Communal arrangements are more efficient than government alternatives because they do not require excessive costs for enforcement and control, relying instead on investment in social capital by the users, and the acceptance by them of certain rules and behaviours. However, these arrangements have evolved over time and it is not certain that such behaviours can be fast-tracked, although as the Botswana chapter in this book illustrates, emergence of such behaviours may be a natural tendency for some human societies.

**Inappropriate government policies replacing traditional systems**

Many traditional governance systems have been replaced or are on course to be replaced by government policies, which intend to be more respectful and democratic, following a western model that is based on ownership rather than on managing common rights. In many cases, this substitution harms rather than helps pastoralists’ ability to self-govern, which negatively impacts their herding and rangeland management strategies.

The analysis of land governance in developed countries shows a system based on hierarchical government levels (international, national, state, municipality, private owners), with specific competences implied for each rung of the governance ladder, focused and adapted to manage locally owned land. Even protected areas or state-owned land are governed with the assumption of local ownership (despite the reality that owners could be public or private, local or not). Land planning tools are often static, establishing exclusive rights for exclusive uses managed by ownership. Moreover, policy makers create laws that make it difficult to manage extensive and complex areas, especially tracts of land that involve multiple regions or departments like those needed for pastoral activities.

In many developing countries rangelands have been converted to government ownership (mainly controlled by forestry and environmental agencies), without assigning financial resources or personnel to develop land policies, which leaves decision-making processes to higher levels of governance, where it is impossible to effectively manage relatively small land patches. Both processes are involved in the loss of traditional (tribal, religious, community managed and even institutional)
governance systems that are currently losing their authority in political frameworks. Many drop out because of their lack of representation, insufficient funds, abandonment, or changes in political competences, all of which leaves traditional institutions out of decision-making.

There are two adaptations of traditional pastoralist systems that are missing in the systems of land governance: adjusted scale of management and land tenure rights to manage extensive areas without needing ownership. Where customary governance systems have been lost and the state has assumed ownership of rangelands, inappropriate management practices are common as pastoralists are unable to enforce rational management strategies and they are dissuaded from investing in or improving land capacities. These lands lose the application of traditional grazing methods – most notably seasonal herd movements – and thereby suffer from deterioration of rangeland productivity.

Finally, related to this flawed arrangement, there are some problems in public lands subject to fee exploitation. The establishment of fees for profiting from natural resources is not working well for rangelands because high fees are unsuitable and low fees beget poor investment in land improvements. There are very few examples of working systems of fee collection based on herd size with inducements to invest in good practices.

Privatization, claims and conflicts over ownership, rights and access

Common rights can be progressively transformed into ownership systems following recommendations of global institutions assuming that ownership will boost economic activities, investment and modernization of transformed lands. When governments take charge of communal lands they generally classify them as public property; thereafter, the legal framework proclaims such land as suitable for certain uses (e.g. for forestry, pastoralism or environmental uses). State owned lands could be leased to third parties to develop highly intensive activities – like industry, mining, wood trimming, infrastructure and urban development – even if they are governed by forestry or environmental agencies. This leads to unsustainable land exploitation that deteriorates productivity and damages pastoralist livelihoods. Often, government actions, which are intended to generate economic rights and access to natural resources like water, have the opposite effect on local communities, particularly on women who become more dependent on external institutions.

Even when livestock-breeding activity is maintained on government held lands, the absence of adequate rights management procedures results in imprudent practices that deteriorate land. Sometimes free access to public lands without traditional regulation systems effectively leads to the ‘tragedy of commons’, especially when livestock breeding intensifies with external inputs and is attached to demanding markets. In an open competence system, where traditional institutions are absent or overwhelmed and government is concerned only with short-term production, lack of regulation leads to deleterious practices whereby herders are unable to apply sustainable management techniques.
The lack of collective land tenure is also leading to the emergence of private ownership claims. The dominant position expressed by several governments and international institutions is to allow such claims as a way to instil a more dynamic economy, in the belief that private ownership will boost investment and production of these lands. However, private ownership of rangelands tends to give rise to overexploitation through intensive cropping, increased herds with higher rates of external inputs, which implies a loss of fertility and production capacity, and land degradation processes. Moreover, private land ownership is frequently behind some of the most common constraints upon pastoralist activity, such as grazing bans, fencing, encroachment, urbanization and closure of stock routes.

One aspect related to change in ownership rights is their relationship with poverty. Ownership in the western sense has been seen as a tool to fight poverty under the assumption that owners take care of their land more than others. Herders depend on land access rights to survive and losing those rights because of new ownership policies is driving them into poverty regardless of the intention of land ownership laws. Moreover, people living in extreme poverty are highly dependent on access to land and other natural resources for their livelihoods and when that access fails they become displaced. In general, land privatization policies by governments have helped wealthier herders and increased the vulnerability of poorer communal pastoralists.

The settlement of nomadic societies

Property claims are the first step for pastoralists to settle. Regulations and bureaucracy associated with land ownership frequently force nomadic or mobile pastoralists to abandon their activity when poverty and other difficulties arise. However, settlement of mobile pastoralists risks converting them into static livestock keepers, especially in developing countries and mostly in the same marginal territories they had previously lived. Sedentarization of herders increases pressure over neighbouring rangelands through overgrazing and intensification and misguided land management practices in fragile ecosystems. However, while herd mobility remains vital for rangeland productivity and sustainable pastoralism, settlement of the herding population does not necessarily have to be an impediment. Many pastoral societies have undergone profound change from being nomadic societies to becoming settled populations who managed mobile herds, often over large distances.

The disorientation of nature conservation policies

If contemporary societies want to preserve grassland ecosystems and biodiversity, they must apply proper grazing and livestock systems to slow down grassland degradation and maintain rangeland habitats. Research and practice indicate that preservation of other ecosystems, habitats, and landscapes also positively correlate to effective grazing management. Extensive (grazing-based) livestock production is a financially inexpensive means of conservation and is often the most effective and most profitable way to sustain valuable ecosystems like woodlands, wetlands, agro-silvo-pastoral lands, high mountain landscapes, savannah and tundra.
As a result of failure to understand the environmental benefits of pastoralism, pastoralists have been marginalized from protection policies and their activity has been frequently banned from protected areas, woodlands and fragile ecosystems, often with counterproductive results. Indeed, there are conflicts between the conservation sector and pastoralism related to two main issues: management of predators attacking herds and use of aggressive techniques in land management, like fire as a shrub control tool. Environmental conservationists and government agencies have often viewed such practices as a sign of an aggressive attitude towards nature conservation, mistakenly regarding pastoralists as their enemies.

Pastoralists have not usually been included in policies or negotiations about nature conservation, which excludes one of the most important collectives in decision-making processes concerning protected areas. As a result, those governing pastoral lands often conclude that pastoralism is a non-suitable or non-friendly activity for protected areas, discouraging herding from fragile lands, increasing bureaucracy, requiring permissions and even banning grazing in available lands.

Some opinion-forming institutions like FAO still address the environmental impact of livestock (Steinfeld, 2006) without properly disaggregating it into extensive and intensive livestock production; identifying environmental costs but ignoring environmental benefits of livestock production. Moreover, some deep impacts have been attributed to extensive livestock production without adequate characterization, assuming that extensive grazing still occupies and degrades vast areas of land and blaming livestock for impacts of global significance without distinction between the behaviour of production systems. This attitude indicates the still fragile position of pastoralism and extensive livestock and the persistent lack of public consideration for this activity.

A complex relationship with the authorities

Case studies in this work highlight difficulties in the relationships between authorities and pastoralists. These conflicts cover a variety of issues, including land tenure and property rights, disagreements with environmental agencies, lack of capacity for traditional institutions, marginalization from development and agricultural modernization policies and lack of interlocution. Moreover, mobile pastoralist and herder communities often do not fit neatly into modern political frameworks. Pastoralists often feel underpinned in conflicts with settled people (who are generally closer to local authorities and more integrated within local networks) and are not able to represent their interests.

When pastoralists are hardly represented politically and badly co-ordinated, misunderstandings and strained relationships arise. Weak co-ordination between governmental agencies and local communities or municipalities results frequently in conflicting approaches to the management of land and natural resources. Herders are often damaged by these conflicts because they lack proper interlocution with local or state authorities. Authorities tend to interfere with rather than create options for low-level flexible negotiations among local user groups. When land-use zones are created by planning tools – or by state or federal
laws – the possibility of negotiations between herders and other stakeholders and the ability of independent conflict resolution is remote. Despite this, at the local level in many countries traditional authorities often trump legal documents in practice when it comes to allocating land rights.

The industrialization of agricultural land use

An increasing number of people worldwide are leaving rural areas to live in urban settlements and this global urbanization, combined with global economic growth is driving up demand for meat and other livestock related products, paving the way for intensification of livestock production, especially in developing countries. This intensification has a deep environmental impact on global change (Steinfeld, 2006) and has consequences on livestock production systems, leading to a process of industrialization that is negatively affecting pastoralism and extensive production. Attempted intensification of land use is one of the major causes of reduction in pastoralism and rangelands culture. This intensification – particularly of capital inputs – varies by country and geography, but shows common patterns, particularly in developing countries. One common outcome of intensification is the concentration of production in one part of the landscape and abandonment, or major decline, of the rest. The associated losses are seldom factored into decision-making.

Intensification of agriculture and livestock production is one of the major drivers of land degradation (Benayas et al., 2007). The main factors in the degradation are overexploitation of local resources, the misjudged adjustment of graze loading and dependence upon external inputs. The consequences include the loss of herd fertility, desertification and increased damage from natural disasters. Furthermore, intensification is related to the spread of poverty (Scherr, 2000) despite the fact that it is usually intended to fight against scarcity.

The growth of external inputs and market dependence

One of the most important consequences of intensification and privatization is that even when such practices boost local economies, they are also making them more fragile and overly dependent on external inputs. The intensification of agriculture and livestock production demands fuel, machinery, fertilizers, plant protection products, water and other supplies that also require financial infrastructure to establish and maintain. Dependence on these external inputs affects livestock keepers by encouraging herders to keep a large number of animals that exceed the carrying capacity of a rangeland. In an effort to boost the livestock sector, some countries have subsidized inputs, but this has similarly encouraged overpopulation and diminished the relative value of rangelands in the pastoral system, with the outcome of serious desertification. Dependence upon external inputs – sometimes subsidized to maintain competitiveness, often artificially – makes it difficult for local herders to maintain a living wage. Livestock keepers often become dependent on loans and subsidies, losing resilience and land management capacity.
The employment generated by agricultural and livestock intensification is the main goal in developing such projects, but they are not providing enough employment to compensate the population loss. There is no evidence that this form of development is adequate to fight poverty in rangelands but its application in the rangelands has been proven to be a major driver of land degradation and loss of resilience.

**Vulnerability of pastoralist societies**

Pastoralist societies have shown extraordinary resilience in adapting to sudden changes and natural disasters while maintaining their activity in difficult conditions in poor and marginal lands. Mobility and customary governance and social arrangements are central to enabling pastoralists to manage extreme climatic conditions that include drought and freezing depending on location. As governance systems break down, and as relationships with authorities and settled societies are affected, women and impoverished pastoralists are becoming particularly vulnerable.

Female pastoralists are key to the survival of pastoralism; according to recent studies, women are the most valuable assets for the maintenance of pastoralism (Kristjansson et al., 2010; Joyce, 2007). Women act as guardians of locally adapted livestock breeds as the sector experiences high-input and large-scale production intensification. Women’s responsibilities in the reproductive economy are deeply ingrained in gender roles that restrict their range of activities. They tend to favour risk-avoiding livelihood strategies and while intensification is more often related to men’s activity women tend to adhere to locally adapted systems. Women are often marginalized in land rights in traditional societies but they are increasingly heading households in a context where men are forced to migrate to urban areas in search of employment (FAO, 2012; Kleinbooi, 2013).

The legal and cultural acknowledgement of women’s roles and responsibilities in pastoralist societies could lead to better frameworks and conditions for the survival of endangered pastoralist societies. On the other hand, in countries where land rights have been equal for women, there has been a process of rural masculinization where women have migrated to urban places, escaping the constraints and the conservatism of rural societies. The gender equilibrium in some developed countries has shown an increasing abandonment and fragility of rural communities.

**Rangelands and global change**

The decline of rangelands and pastoralism is also related to global change. Imprudent management practices and subsequent intensification of land uses contributes to global change (Society for Range Management, 2003) and climatic change. It is expected that these changes will increase the risk of land degradation and biodiversity loss. Climate change will modify the length of growing seasons, crop and livestock yields, and increase the likelihood of food shortages, insecurity, and pest and disease incidence, all of which place populations at greater health and livelihood risks (Neely et al., 2009).
Figure 2.1 Factors in pastoral women’s rights

Grasslands, by their extensive nature, hold enormous potential to serve as one of the greatest terrestrial sinks for carbon. Furthermore, livestock play an important role in carbon sequestration through improved pasture and rangeland management (Steinfeld, 2006; Tennigkeit and Wilkes, 2008). Rangelands also play a significant role in conserving biodiversity, and especially in providing livelihood benefits to local herders. Healthy grasslands, livestock and associated livelihoods constitute a valuable option for addressing climate change in fragile dryland areas where pastoralism remains the most rational strategy for maintaining the wellbeing of communities (Neely et al. 2009).

**Complex problems demand complex solutions**

We have so far described some of the key factors in the weakening of pastoralist governance in very different countries and backgrounds. However, it is also necessary to understand the way these factors interact with people and communities to create complex challenges that are particularly challenging to address. Complex systems are characterized by the constant adjustment of components in the system to changes in other components as well as to outside influences. When elements of the system are isolated and changed in order to make the system more efficient, the usual outcome is the opposite: a loss in efficiency of the system overall.

Shanahan (2012) explained the image problem pastoralism faces, making reference to the situation in Kenya. Mass media ignore pastoralists’ knowledge and skills, which have led them to become a cornerstone of rangelands and drylands economy and highlight, quite improperly, the conflicts related to pastoral activity,
focusing on bad stories without properly quoting the herders themselves. The authors played a game with Kenyan journalists, asking them for five words related to pastoralism. The results are mapped out below showing vividly how pastoralism is perceived by and portrayed in the media, and demonstrating the overwhelming absence of any reference to nature conservation, land management or any other positive role. Though this refers only to the situation in Kenya, the situation is not very different in the majority of countries.

In order to respond more effectively to the complex needs and contexts of pastoralism, we need an understanding of how the different factors involved interact. To address this, we have reviewed several of the case studies, identifying the principal drivers affecting the current scenario in order to map out the relationship between them. The aim is to show the emerging picture driven by several factors acting simultaneously and put them in a contextualized map of the situation. This mapping needs to be adjusted to each particular reality, addressing local drivers. The first example corresponds to the Garba Tula case study from Kenya. This is the simplest case study to analyse this way and provides a template for two more examples below.

The schema shows how private rights and intensification weaken pastoral governance and increase rangeland degradation, leading to a lack of productivity and increasing vulnerability of pastoralists whose livelihoods are affected.

The Jordan case map shows the same main drivers analysed in Kenya, but incorporating new drivers and actors that promote degradation by overriding traditional management systems. Intensification is shown as a main factor in rangeland degradation with strong consequences for the social fabric and land rights. The chart also shows the increasing private ownership claims and how rangeland degradation is related to poverty and settlement creating a negative feedback loop that ends in rangeland degradation. The role of government and private investors are also relevant for the loss of traditional land access rights.
On the other hand, the situation in a European country like Spain shows a close relationship between degradation and abandonment of extensive uses. Inland northern Spain, with a valuable heritage of common lands, is currently in the throes of a deep crisis affecting rural areas that is leading to depopulation and to polarization of intensive agriculture in the central region while mountains and rangelands are abandoned.

Some of the drivers behave in the same way in all cases. The lack of resources for nature conservation and land management, the failure of environmental and forestry authorities over rangeland management (represented by regional and national governments boxes), the rise of intensive agriculture as the exclusive production system are global trends, as are the loss of social fabric, interlocution and visibility of pastoralists and extensive farmers.

**Facing rangeland degradation by restoring pastoral governance**

Major changes like land use change, climate change, economic globalization, and urbanization, are seriously affecting rangeland and other grass-based ecosystems throughout the world. By degrading and destroying ecosystem services, these changes undermine the livelihoods of millions of poor people. One of the main drivers in rangeland degradation is the loss of traditional governance systems in
parallel with the abandonment of pastoral activities and the lack of involvement of pastoralists in land management.

For many people, rangelands are places of inspiration, yet their capacity to inspire is weakened when pastoralists are unable to be effective stewards. This book is intended to provide solid evidence that governance is the foundation of sustainable management, that pastoralists have the knowledge and institutions to manage rangelands effectively, and that when sustainably managed by pastoralists rangelands contribute greatly to conserving global biodiversity, mitigating climate change and providing high value livestock products.

The following cases studies give practical examples of how this can be achieved, through heavily process-oriented work with pastoral communities, strengthening their rights and their voice and enabling systems of natural resource governance to evolve within new social and legal frameworks. It is hoped that more actors will see the importance of further strengthening pastoral governance and re-enabling pastoralists to be the custodians of this hugely important part of our global heritage.

Notes
1 Adapted from Blench, 2001.
3 Extracted from FAO, 2002a.