
Introduction

New Avenues for Pastoral Development in sub-Saharan Africa

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African pastoralism is a perplexing, controversial and misunderstood subject. Certainly, making sense of herders' lifestyles and livelihoods is made especially difficult – if not impossible – by the marked absence of consensus between scholars of pastoralism. Sharp disagreements exist as to whether pastoralism in sub-Saharan Africa is on the verge of extinction, or whether it is a resilient livelihood strategy. Similarly, authors diverge on the question of whether drought cycles have become increasingly recurrent and life-threatening, or whether they are part of the climatic variability that has always characterized arid and semi-arid ecosystems. Finally, different viewpoints exist concerning whether or not it is possible to maintain extensive production strategies and the mobility of herds and people in increasingly populous and circumscribed territories. Although a number of research fields and academic debates with regard to 'new range ecology', climate change, risk management or sustainable livelihoods have produced important insights for African drylands, there have been few attempts to conceptualize pastoral development more broadly and beyond disciplinary confines. This is precisely the objective of this special issue, which seeks to provide an overview of current research on the economic, ecological, political and social challenges and opportunities of pastoral societies in sub-Saharan Africa.

The study of pastoral groups, livelihoods and cultures in Africa offers captivating insights into how what are often described as 'marginal' people survive in adverse climatic, economic and political conditions. With notable exceptions, academic research on pastoralism itself occupies a rather marginal status within larger debates on rural development, pro-poor policies, decentralization or natural resource management in Africa. The difficulties of conducting research in many arid and semi-arid areas, which are often compounded by security problems, lack of transport in remote places and the mobile nature of its inhabitants might explain why relatively few academics study pastoralism. Yet the latter represents an intriguing and highly dynamic livelihood and lifestyle whose contemporary evolution deserves more scrutiny. Apart from being an intrinsically interesting research field, we believe that the study of pastoral development in Africa reveals many of the underlying themes, issues and problems, but also opportunities and potentials that are inherent to making a living in the drylands.

Presenting a wide range of empirical material across sub-Saharan Africa, the authors of this special issue highlight current avenues for the analysis of pastoral development in sub-Saharan Africa from multiple angles and empirical perspectives. Among the key questions they address are: what development challenges are pastoral societies currently confronted with and how do they address these challenges? What are the impacts of the multiple social, ecological, economic and political transformations – climate change, democratization, economic reforms and globalization, participatory development, land reform and so on – of the past two decades on development problems and interventions in pastoral areas? What are the contemporary practices and discourses of 'pastoral development' of various actors including development agencies and state

actors? What are the roles of indigenous knowledge and scientific knowledge systems in pastoral development? What are the development implications of the major research findings of different bodies of literature focussing on African drylands and their inhabitants? What are the continuities and ruptures in terms of pastoral development trajectories that are observable in contemporary sub-Saharan Africa? By addressing these and other questions, this special issue provides a timely update of earlier attempts at taking stock of the development challenges faced by African pastoralists (for example, Galaty *et al*, 1981; Baxter, 1991; Scoones, 1995).

Defining 'Pastoral Development'

Both 'pastoral(ism)' and 'development' are highly ambiguous concepts. The designation 'pastoralism' can, for example, give rise to a range of often quite contradictory interpretations, depending on whether the focus is more on ecological, economic or social dimensions. In addition, pastoralism takes place in very different ecological contexts across the African continent, including dryland and wetland grazing, and a combination of intensive and extensive production strategies (Homewood, 2008). Blench (2001, p. 6) defines pastoralism as 'the use of extensive grazing in rangelands for livestock production'. Others see pastoralism not only as a mode of production, but also as a 'mode of perception' (Baxter, 1990, quoted in Markakis, 2004, p. 14). Most scholars, however, agree that pastoralism as a method of livestock production defies easy classification, as it occurs 'under a variety of social and historical conditions' (Samatar, 1992, p. 105). In this editorial we have adopted (and adapted) the broad definition proposed by Nori *et al* (2005, p. 5), according to which 'pastoralism is the finely-honed (...) relationship between local ecology, domesticated livestock and people in rangelands, particularly in resource-scarce and ecologically-variable regions, often at the threshold of human survival'.

This characterization purposely includes a wide range of livestock species, ecosystems, varying degrees of mobility and very diverse livelihood strategies as pursued by nomadic, transhumant and agro-pastoralists. Drawing attention to the great variability of pastoral life worlds, Raynaut (2001, p. 14) cautions that 'we cannot identify one Sahel but much more realistically, many Sahels'. Simply put, one can distinguish between three (ideal-) types of pastoral livelihoods. *Nomadism* refers to herders who depend entirely on the sale and exchange of their animals for their livelihood, pursuing opportunistic and irregular migration routes. *Transhumance* describes regular herd movements between fixed points in function of the seasonal availability of pastures. Transhumant pastoralists mostly have a permanent homestead and practice herd splitting. *Agro-pastoralists* are sedentarized groups who engage in a mix of crop production and (usually smaller size) livestock herds (Blench, 2001, pp. 11–13).

While development has long been a contested concept (Schuurman, 2000; Rapley, 2004), this is arguably particularly so in the context of pastoralism. Historically and to a certain extent still today, development interventions in pastoral areas have often contributed to the continued marginalization rather than the betterment of livestock keepers' livelihood conditions. In the vast majority of cases, external actors who attempted to 'develop' pastoralists were not of pastoralist background, and often possessed little local knowledge. As a result, they operated on the assumption that their interventions and policy prescriptions contributed to the modernization of livestock production (Moritz, 2008). The papers in this special issue understand development of the pastoral groups in

their study areas mostly in terms of ‘social change’ rather than ‘directed progress’ (Lund, 2010) or, in other words, planned development interventions. Yet, given the omnipresence of humanitarian aid, development projects, large-scale investments and a wide array of other planned initiatives in African drylands by both state agencies and NGOs, pastoral development research must take into account both ‘social change’ of pastoral groups and (attempts at) ‘directed progress’.

Recurrent Themes of Pastoral Development

Pastoralism has been the subject of strongly contested interpretations ever since colonialists advocated development policies based on agricultural priorities, redrew boundaries detrimental to herders and accelerated the commoditization of livestock and barter trade. From the colonial period up to today, one can distinguish between two historic narratives that frame pastoralism and the viability of pastoral lifestyles in entirely opposite ways (Hagmann, 2006).

A *pessimistic* scholarly tradition views mobile animal husbandry as an outdated, unproductive or even irrational economic activity that has little to contribute to national economies. Although some of the blatant stereotypes about herders’ supposed irrationality, an idea inspired by Hardin’s (1968) powerful ‘tragedy of the commons’, have been deconstructed by common property scholars, new ones have emerged. With the expansion of the Sahel droughts in the 1980s and the early 1980s drought in East Africa, concerns became increasingly widespread that increasing desertification not only destabilizes arid and semi-arid eco-systems, but also irreversibly undermines pastoralists’ life-sustaining resource base. For instance, Fratkin and McCabe (1999, p. 5) pessimistically cautioned that ‘it is far from certain if subsistence herding as we know it will be in place in East Africa in the twenty-first century’. Increasing levels of absolute poverty, few employment opportunities outside of the livestock sector, progressive dependency on relief aid, and a gradual decrease of mobility challenged the socio-economic fundamentals of transhumant livestock production. Oba (1992) emphasizes a trend towards ‘pauperization’ as a result of the breakdown of reciprocity, which is accelerated by the combined effect of droughts, epidemics and cattle raids. More recently, Sandford (2006, p. 4) established a ‘continuing structural (...) problem’ of pastoralism in the Greater Horn of Africa, pleading for development strategies, which offer ‘a future outside of pastoralism’. Currently, predictions that climate change will reduce the length of growing seasons, add pressure on water availability and accessibility, increase deforestation and desertification and lead to more erratic rainfall in the drylands (Boko *et al*, 2007) have reinforced concerns about the fate of African pastoralism.

A more *optimistic* scholarly tradition emphasizes that mobile animal husbandry remains the only economically rational and ecologically sound strategy for managing sparsely available resources in arid and semi-arid environments. Proponents of this view refute the idea that transhumant pastoralism is doomed to extinction. Instead, they emphasize the extraordinary degree of resilience of pastoral land use systems, herders’ adaptability to erratic rainfalls and resource availability, and reciprocal wealth-sharing mechanisms between households. Particularly, proponents of the new range ecology school emphasize the flexibility and non-equilibrium character of pastoral systems (Ellis and Swift, 1988; Behnke *et al*, 1993; Scoones, 1995; Warren, 1995). According to their

interpretation, uncertainty, unpredictability and asymmetry of resource availability, particularly rainfall, must not be seen as aberrations but constitutive of dryland ecologies. Other authors underscore the boom and bust nature of the livestock trade, which includes rapid recoveries after droughts and pandemics and contradicts the idea of generalized poverty of pastoral groups (Waller, 1999). Similarly, they criticize the assumption that livestock populations are primarily affected by bioclimatic – rather than manmade – factors as a misunderstanding of pastoral economies (Turner, 1993). Political ecology writers have questioned global narratives about desertification and the one-sided interpretations of the supposedly negative consequences of climate change (Leach and Mearns, 1996).

Past efforts to ‘develop’ pastoral areas through technical interventions, particularly in the field of livestock marketing and rangeland management, have been marked by a long history of failed projects and unintended consequences (Niamir-Fuller and Turner, 1999). In many instances, the very livestock and water policies that colonial and post-colonial governments conceived to improve pastoralist resource management in actual fact brought about ‘the very conditions of open access to pastoral resources which they intended to prevent’ (Thébaud and Batterbury, 2001, p. 76). The arrival of new resource user groups, the increased commercialization of livestock production, and the described government interventions jointly transformed large parts of once communally managed rangelands into (semi-)privatized holdings or free access. As a response to the recurrent droughts that have hit the Sahel since the 1970s, donor-sponsored relief and rehabilitation programmes have gradually been expanded to include pastoralists. Particularly, humanitarian aid in the form of food aid has become a major phenomenon in many African lowlands, which in many cases supplements household incomes, but also creates fears of increasing dependency on donor-sponsored ‘hand-outs’ (for Ethiopia, see Sandford and Yohannes Habtu, 2000).

With the exception of measures destined to combat desertification, pastoral development was a minor preoccupation of international donors and national governments during much of the 1980s and 1990s. Development policies in pastoral areas thus gradually shifted from a top-down modernization paradigm, which was prevalent in the 1970s, to a combination of emergency relief aid and participatory community-based development projects in the 1990s (Oxby, 1999; Moritz, 2008). In addition to institutionalized food aid deliveries, pastoral communities are benefiting increasingly from cash transfers in return for labour-based public works in an attempt to address the structural causes of food insecurity and chronic vulnerability. More recently, the proliferation of resource-based and other conflicts, the US-led ‘war on terror’, and the impacts of climate variability on drylands increased international attention to the ecological, social and political challenges currently faced by African pastoralists. In countries like Ethiopia, Kenya and Sudan, pastoralism has become a recognized field of intervention by local and international development actors. Initially celebrated as a policy success, the inclusion of pastoralism on the development agenda has produced paradoxical outcomes. On the one hand, pastoralism as a lifestyle and economic activity has gained public recognition. On the other hand, pastoral interests are represented in national capitals by officials and development workers who often do not originate from a pastoral background and/or who belong to the urban elite. Despite these shifts in pastoral development strategies, interactions between externally sponsored development schemes and indigenous pastoral institutions continue to be fraught with mutual misunderstandings. Similarly, development planners in sub-Saharan Africa continue to grapple with the mobile and often highly

dynamic nature of pastoral livelihoods, as development projects typically rely on averages, fixed time frames and defined territorial entities.

New Themes in Pastoral Development Research

More recently, a number of new themes have emerged in the literature on contemporary pastoral development. Multiple processes including the expansion of agro-pastoralism, the multiplication of water points, recurrent droughts, the 'individualization' of land and water access, forced and voluntary population movements and increasingly sedentary lifestyles including urbanization are transforming African pastoral economies. A common denominator of these processes is the growing commoditization of natural resources, as pastoralists and their herds adapt their uses of rangeland resources in response to regional and global markets. While livestock has been commoditized already a long time ago as a major export product and income source (for Somalia, see Little, 2003), a range of renewable and non-renewable resources found or produced in the drylands are integrated into local and foreign markets. In East Africa dryland forestry, particularly *acacia* trees used for charcoal, has become a major energy source and export good, which is sold on local markets and exported to Arab Gulf States (Lindenback, 2001). Intensification of land use such as cultivation or fodder production in increasingly enclosed and privately owned rangelands represents another example of commoditization. Similar trends are observable in the case of water for irrigation, animal and human consumption, which often hinges on technological investments (drilling wells, water pumps for flood irrigation and so on) that further the monetarization of water resources at local level. Finally, a number of lowland areas (for example, southern Sudan, western and eastern Ethiopia) hold significant reserves of fossil energy, which are increasingly exploited commercially.

Land tenure and resource use questions are at the heart of extensive production systems, yet continue to be subjected to stereotypical assumptions by policymakers and, to a lesser degree, by researchers. Although development economists and state officials tend to emphasize the importance of more individualized (private) property rights, social anthropologists and new range ecologists argue for the need to uphold collective (communal) property rights in pastoral areas. New range ecologists and other scholars working on pastoral production systems have highlighted the central importance of mobility as the key condition for sustainable resource management in the drylands (Niamir-Fuller, 1999; Adriansen, 2005). Resource use of pastoral commons has become increasingly diversified and thus defies simple one-size-fits-all solutions in terms of land tenure rights. Better informed policies and legislation that take into account existing socio-cultural boundaries and agro-ecological parameters in pastoral areas are urgently required. Although not all resource uses are equally visible in drylands, appropriate land tenure policies must recognize the diversified and heterogeneous nature of pastoral resource uses, livelihoods and food economy zones in order to ensure access.

The nationalization of the range, sedentarization of groups and individualization of land constitute three historic parallel trends that contributed to the temporary or permanent breakdown of customary pastoralist tenure systems (Lane and Moorehead, 1996). Nationalization, sedentarization and privatization all highlight the problematic role that national governments have taken over from the colonial governments and played with regard to pastoral resource management systems. State officials have actively propagated

and silently consented to the continuous encroachment of non-pastoralist resource users onto pastoralists' rangelands. Huge increases in irrigated and rainfed agriculture, the development of large-scale mechanized farming, and the introduction of extensive networks of conservation areas for game and tourist parks have negatively affected pastoral livelihoods. Pastoral populations saw their land base diminish and their traditional migration patterns curtailed because of expanding and intensified crop farming in their semi-arid and arid homelands. Continuous expansion of agricultural land use and protected areas meant that pastoralists were pushed into more and more marginal areas. Currently, there is a danger that pastoralists' historic loss of dry season, reserve grazing areas and water resources is exacerbated by the acquisition of arable land by foreign companies and governments.

Biophysically, the drylands are characterized by a high rainfall variability, which might increase climate change up to 2025 (Paeth and Thamm, 2007; Jones and Thornton, 2009). However, the uncertainty in climate change projections and in the manifestation of other livelihood risks means that research and development interventions need to consider the possible range of climate changes and their implications for agro-(pastoral) livestock production. Considering this uncertainty, the multiple socio-economic pressures facing livestock production and the cumulative impacts of climate-related events, building resilience through multi-level strategies and interventions in ecological, economic and social dimensions, is crucial for improving adaptive capacities in drylands animal husbandry (Ifejika Speranza, 2010). These multiple pressures have contributed to worsen the food security situation of pastoral populations. Extended droughts have caused livestock values to depreciate and triggered livestock deaths, thereby reducing pastoral bargaining power (McPeak, 2004). In conjunction with market failures, and low infrastructure and services development, pastoral populations have become the major targets of food aid interventions fuelling the debate on whether pastoralism can continue to secure food security.

Numerous studies report a militarization of pastoral societies, an increase in the severity of resource conflicts, and particularly the rising number of victims of armed confrontations in the past two decades (Bruijn and Dijk, 1999; Salih *et al*, 2001; Mkutu, 2008). Historically and to this day, many semi-arid border regions have regularly been the locus of violent confrontations and recurrent political emergencies. In its initial stage, the discussion on resource-based conflicts in the semi-arid lowlands was very much triggered by growing fears that increasing desertification and the negative impacts of global environmental change disrupt pastoral livelihoods, diminish resource availability and thereby exacerbate violent conflicts (Baechler, 1994). While individual studies find ample evidence for quantitative (frequency) and qualitative (dynamics) changes in the occurrence of resource-related conflicts in pastoral areas, the causal links between environmental change, conflict and cooperation remain contested. The regained interest in the impacts of climate change on sub-Saharan African drylands, triggered by the recent publication of the Intergovernmental Panel on Climate Change (cf. Boko *et al*, 2007), provides an opportunity for renewed research on the causal links between climate change, land use changes and conflict.

National governments often argue that the dispersed nature of pastoral settlements, their mobility, perceived insecurity and conflicts make the provision of services dangerous to the provider, thus justifying the low level of development in pastoral areas. Many governments favour the sedentarization of pastoralists as the enabling condition for improved services and living conditions for pastoral populations. However, sedentarization is not

necessarily a viable alternative for the vast areas of pastoral production, particularly when taking variability and uncertainty in resource conditions and production into consideration. Yet pastoralists are often also settling or at least establishing satellite bases to which they return after herding cattle in distant places. Despite these changes that are explained by the advantage of being near a market centre and the pastoral marketing networks, the combination of (and alteration between) sedentary and mobile lifestyles, which has been the hallmark of African pastoralism, is likely to continue in the future.

The Contributions of this Special Issue

The contributions to this Special Issue of the *European Journal of Development Research* reflect many of the new themes identified above, and show that the pessimist–optimist dichotomies are too narrow for understanding the contextualities of pastoral development. The contributors provide a stimulating overview of pastoral development in sub-Saharan Africa. Rather than offering prescriptions concerning what pastoral development should be, they scrutinize past and present development trajectories of pastoralist groups in West (Benin, Mali, Niger) and East Africa (Ethiopia, Kenya, Somalia) from multiple thematic angles.

Krätli and Schareika's paper is a highly informative account of the way that Wodaabe herders in Niger feed and breed their herds. It is also a powerful critique of predominant conceptions of rangeland resource utilization. The authors underscore that nomadic pastoralism is essentially a production strategy geared towards the environmental variability and the multiple uncertainties characteristic of African rangelands. Hence, pastoralist groups such as the Wodaabe harvest the asymmetric distribution of rangeland nutrients most intelligently by carefully studying the nature of grasses and soils, and by directing and monitoring herd movements. By manipulating their animals to feed selectively, they enhance animal production above the rate that could be expected on the basis of the average nutritional value of the range they use. Consequently, pastoral development plans informed by analytical models that conceive of drylands in terms of averages, stability or homogeneity are of little value. Instead, the authors emphasize the need to conceptualize the reliability of rangelands through notions of asymmetry, instability and heterogeneity in space and time.

The intricate challenges of adapting to increasing climatic variability are the focus of Ifejika Speranza's paper. In the past two decades, droughts and dry spells have claimed the lives of large numbers of livestock of smallholder agro-pastoralists in south-eastern Kenya. Although short-distance mobility remains an important response to drought, Ifejika Speranza identifies a number of factors inhibiting the adaptive capacities of the local Akamba. She argues that the cumulative impacts of climate-related events undermine the resilience of livestock production in the drylands, making both agricultural extension services and diversification into non-agricultural activities crucial for improving adaptive capacities in drylands livestock production. A wide range of support measures are thus required to facilitate the emergence of more proactive adaptation strategies to climate change. These include the preservation of fodder, livelihoods diversification and partial intensification of livestock production.

In their paper on pastoral conflicts in Benin and Mali, Le Meur and Hochet elaborate a conceptual framework that allows for a more nuanced understanding of conflicts

over dryland resources. Their analysis highlights the complexity of conflicts over dryland resources. These are marked by multi-stranded relations between competing groups, a plurality of legal norms and a central role of contested narratives that frame resource use and collective identities. Pastoral conflicts are firmly embedded in constantly evolving inter-group relations, which defy simplistic attempts at classifying conflict parties in function of production system, ethnicity or locality. Rather than reducing conflict to competition over natural resource, Le Meur and Hochet underline the continuity between past property relations and identification strategies with current herder–farmer disputes or tensions between conservation and local livelihoods. The authors thus draw our attention to the importance of discourse, history and policy in making sense of conflicts over African drylands.

The two papers by Müller-Mahn *et al* and by Devereux offer valuable comparative insights into variegated livelihood trajectories of three pastoral groups in eastern Ethiopia. A multitude of factors have contributed to the changing socio-economic strategies of Afar, Karrayu and Somali pastoralists. Müller-Mahn *et al* assess these livelihood transformations in Ethiopia's Upper and Middle Awash valley in terms of 'development pathways'. Their historic analysis reveals that the Afar and Karrayu respond to incessant land encroachment, conflict and droughts by changing herd compositions (but continuing nomadic mobility), diversifying income sources through engagements in the non-pastoral sector and by adopting cropping and more sedentarized lifestyles. Relations between these and other pastoralist groups and the Ethiopian state remain strained as the latter continues to advocate for the sedentarization of herders in its lowlands. While the government – with the support of international donors – has broadened aid programmes in the pastoral areas, its development priorities often do not reflect local needs.

The marginalization of mobile livestock keepers by the political centre is recurrent across the African continent and certainly not particular to Ethiopia. Yet Ethiopia is a particularly relevant place to study the marginalization of pastoral groups, as Devereux's paper reminds us. His household survey on vulnerability and well-being of pastoralists in Ethiopia's Somali region reveals paradoxical results; although ethnic Somalis have suffered from historically unfavourable Ethiopian government policies, there are certain economic benefits of being marginalized. In spite of natural, economic and socio-political shocks and risks, the lucrative cross-border livestock trade has made Somali pastoralists comparatively richer than Ethiopian highland farmers. Contrary to conventional wisdom, politically marginal groups such as Somali herders dispose of, in the regional context, considerable wealth. Somalis' rejection of further state incorporation is thus a rational response by those who make their living on the margin. But Devereux's findings provide no cause for celebration for those outside of the reach of the state; among other worrying trends, his data highlight the vulnerability and marginalization within the state-marginalized Somalis and expose important gender differentials in mortality rates to the detriment of girls and women.

Nori's paper provides a rich and lively description of the booming camel milk marketing that has emerged in the autonomous Republic of Puntland in north-east Somalia. The phenomenal rise of camel milk trade was triggered by the Somali state collapse and accompanied by rapidly changing gender roles and urbanization. Once considered a social taboo, the commercialization of camel milk has developed within two decades from a niche activity to an important income generator for many Somali women. Nori shows how the rise of camel milk marketing has been accompanied by an extension of commercial networks and rural–urban linkages. These provide urban dwellers highly valued

camel milk and hinterland producers the consumer goods they crave from the city. Nori's article provides an intriguing empirical account of the dynamics, values and institutions associated with camel milk marketing. It shows that market integration can reduce social and gender inequalities. It also brings to light the multiple uses and exchange values of camel milk, but also the kinship and socio-political aspects that shape resource mobilization in the Somali pastoral economy.

The next three papers concern recent experiences by (agro-)pastoralists in Kenya, and address some of the legal, institutional and livelihood dimensions of pastoral development. Violent and non-violent conflict over rangeland resources has been a persistent feature of African drylands. In her comprehensive study of the legal wrangling over the subdivision of a group ranch in south-western Kenya, Mwangi unearths the judicial and political intricacies of pastoral land reform. Although sanctioned by the Kenyan state, the transition from communal to individual property has been fraught with persistent conflict over land distribution. For much of two decades, competing factions stalled the demarcation and adjudication of the group ranch, using legal means and mobilizing influential politicians to subvert one another. Mwangi's contribution demonstrates how long-standing tensions over land ownership, competing leaderships and plural dispute resolution mechanisms shape current and future access to pastoral lands. Ineffective law enforcement, bureaucratic inertia, lack of coordination and corruption further complicate the task.

The transformation from communal to more exclusive property rights must not necessarily lead to conflict, as Chiuri and Kyalo demonstrate in their analysis of institutional change in the River Njoro watershed. They highlight how the subdivision of pastoral commons in their area of study gave way to a renegotiation of resource use rights and inter-group relations between Ogiek farmers and Maasai herders. It also encouraged the Maasai to rent out their grazing lands as individual farming plots. Pastoralists can maintain access routes to water points and livestock feeds in the watershed because the settled farming communities derive various benefits from the presence of pastoralists. More problematical, however, are the multiple disadvantages that accrue to both female pastoralists and female farmers from the transition of communal individual property rights. While communal land rights ensured women's access to land, private land holding puts the land title in the hands of men without adequate provisions for women's access to land should their marriage disintegrate.

The last article by Wren and Ifejika Speranza investigates the development of bio-enterprises as a very recent strategy by Kenyan organizations and (agro-)pastoralists to respond to the very old challenge of diversifying livelihoods. This contribution discusses the successes and failures of an organic beekeeper association, an eco-charcoal and two aloe enterprises in the Rift-Valley, Eastern and Coast Provinces of Kenya. Wren and Ifejika Speranza highlight both the economic and non-economic benefits of these pilot projects. Among their findings is that the natural products sector in arid drylands has potential, but depends on adequate training of local producers, international certification, pre-market finance and a number of factors commonly associated with profitable businesses. Equally important is their conclusion that bio-enterprises initiated by the private sectors have fared better than those initiated by NGOs as part of development projects.

In sum, the papers of this Special Issue refute both the pessimist and the optimist narratives and assumptions about pastoral development in Africa. The contributors impressively demonstrate that the realities of pastoral production practices defy sweeping

generalizations. They are a call for more empirical analysis of African herders' complex and constantly evolving livelihood strategies, which must be researched through in-depth local and national case studies. Multiple adaptation and negotiation processes are best understood as the sum of diverse development strategies that pastoralists undertake at the interface of local, national and global trends. In this sense, pastoral development in sub-Saharan Africa must very much be comprehended in its plurality, as pastoral developments rather than pastoral development, defying the simplistic credo of a uniform trend of livestock production systems across the continent. While all papers attest that pastoralists are able to devise innovative ways to adapt to changing livelihood conditions, it is crucial to support pastoral strategies by increasing state interventions in the provision of public services.

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