

Darfur: Flexible Adaptation to Environmental Change – Subverted by Poor Policy.

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Abstract

With environmental change set to affect the developing world in significant ways, examination of the process of adaptation is increasingly being brought to the fore. Common to all forms of adaptation in rural livelihoods will be a process of change in resource use and the resource rights that will either facilitate or subvert adaptation. This article looks at Darfur and the repercussions to the multiyear drought and land degradation that led to forms of adaptation involving change in relationships between groups over land resources. As the case illustrates, effective approaches involving highly flexible customary institutions were used to effectively manage the change in land resource rights relationships inherent in adaptation, and considerable opportunity existed for positive interaction between customary and statutory law. But there were also actions in the domain of national policy that debilitated the opportunities and instead led to profoundly negative repercussions in relationships about land in Darfur in the context of adaptation. This debilitation became a primary driver in the current war--highlighting both the importance of land resource rights relationships to adaptation, but also how these can be changed (positively and negatively) by specific practices and policies. Subsequent to a brief review of the environmental changes and adaptation to these in Darfur, the analysis looks at how changes in land resource rights relationships were dealt with over time as adaptation developed. Initial success at adaptation was followed by interventions by the Sudanese government to manage these relationships for specific objectives that worked against adaptation and resulted in competition, animosity, confrontation and the subsequent collapse of the institutions, legitimacy, and trust necessary for successful management of land resource rights change.

Keywords: adaptation, environmental change, Africa, Sudan, land tenure

1. Introduction

Adaptations¹ to environmental change² for rural inhabitants of the developing world will inevitably involve a change in the way resources are used. And because all resource use operates through systems of rights of access, claim and use, such systems can either facilitate or subvert adaptation, the latter crippling its potential and even producing negative outcomes. Resources used in new ways in adaptation scenarios will necessitate ongoing modifications in resource rights, and importantly, continued change in resource rights relationships between groups, i.e., communities, lineages, tribes, livelihoods, production systems, commercial interests, and the state.

While adaptation can involve one-off planned programs and projects delivered or recommended by the international community and/or the state—which assume people will adapt once and get on with their livelihoods—much more common, and involving many more people and much larger areas, will be local autonomous efforts as communities pursue continuous forms of adaptation on their own. The latter will occur largely uncoordinated with the state or the international community and will involve a high degree of local variation and ongoing experimentation. As different communities robustly pursue new ways to use land resources, contention over rights to resources will be thrust to the fore, necessitating a policy environment able to mitigate negative repercussions at a minimum, and optimally encourage rights arrangements that facilitate adaptation. While the distinction between ‘planned’ and ‘autonomous’ adaptation is made in the literature (e.g., Smith et al 2000; Frankauser et al 1999; Adger et al 2003), this article argues that a fundamental aspect of both forms of adaptation in the developing world’s rural areas will be change in rights to resources, and this change can be supportive of adaptation or undermine it. This is important in a policy context, because resource rights regimes operate from systems of law (statutory, customary, indigenous, religious), thus they can be more responsive to policy attention than are other aspects of adaptation efforts.

While there are examples of resource rights systems that engage and support ongoing forms of adaptation, such as for water in Namibia (Thomas and Twyman 2005), as well there are cases where the ways in which rights are managed have had a negative effect, subverting not only the viability of adaptations but also basic livelihood stability, thus serving to actively degrade livelihoods—such as for locations in Sweden and USA (Vail and Hultkrantz 2000). Blomley (1989; 2008b) and Larson and Blomley (1990) also discuss important aspects of supportive and non-supportive land rights arrangements. This article examines a case of both. With a focus on Darfur, the analysis looks at how nomadic pastoralists from the north of the region sought to adapt to a changing environment and how the prevailing land rights system was able to

¹ Adaptation is meant to indicate changes in livelihoods that involve using resources in new ways, in order to adjust to biophysical, social, economic, cultural and political changes. In this article adaptation focuses on changing sets of rules for land rights, and use.

² The term ‘environmental change’ is used here to indicate aggregate changes in the resources that undergird livelihoods.. While this includes climate change, it also includes deforestation, desertification, widespread erosion, reduction in water supplies, and drought which may or may not be associated with large-scale climate change.

successfully accommodate changes in land resource rights. However significant subsequent modifications in the customary and statutory land tenure systems of Darfur, brought on by state policy, served to disrupt this initial adaptation success, constraining options and reducing the adaptive capacity³ of the in-place tenure system. This led to the pursuit of different adaptation options in order to obtain the desired rights to land resources, including armed conflict.

More broadly the topic resides within the economics of pastoralism and the ongoing debates over land rights regimes in Africa. While these are wide ranging discussions (e.g., Migot-Adholla, et al 1991; Place and Hazell 1993; Place and Otsuka 2001; Runge 1981; Sjaastad Bromley 1997; Sjaastad Bromley 2000; Larson and Bromley 1990), this article seeks to highlight the value of flexibility and even ambiguity in land and property rights for extensive arid and semiarid areas of Africa, as opposed to defined boundaries, rigid institutions, and clarity in demarcations and rights. Thus while the article will focus on the Darfur case, it seeks to contribute to the few other analyses that also describe the need for flexibility in resource rights regimes in Africa (Bromley 1989; 2008a; Chavunduka and Bromley 2011; Abdul-Jalil, 2008).

Subsequent to a description of methods and of the environmental changes in the areas inhabited by the Arab pastoralists of northern Darfur and their adaptation to these, this article looks at how the customary land tenure system dealt with this adaptation in ways that sustained productivity and livelihoods. The paper then examines the land resource rights policy interventions by the state that subverted the process and success of adaptations, aggravated the relationship between Arab pastoralists and the farmers of the neighboring *Fur* and *Zaghawa* tribes, and degraded the adaptive capacity of the overall land rights system, compromising the livelihoods of both pastoralists and farmers. The case illustrates that policy interventions on resource rights regimes can profoundly affect their adaptive capacity, with significant repercussions.

2. Methods

Fieldwork was conducted in Darfur and Khartoum in December of 2009, and comprised individual and group interviews totaling 196 people. The authors met with a wide variety of people and organizations, including government officials at various levels in ministries and departments in Khartoum, Nyala in South Darfur, and El Fasher in North Darfur; as well as representatives of the Native Administrations of North and South Darfur, internally displaced persons (IDPs), and officials of the UN and other international organizations. The authors also met with the Darfur Lawyers Association, the Darfur Land Commission, representatives of the tribal Shura Councils, the Darfur Peace and Reconciliation Council, the Darfur – Darfur Dialogue Committee, academics and prominent individuals and leaders of various tribal groups in Khartoum, North and South Darfur. These included Paramount Chiefs, local NGOs and local tribal elders and religious leaders among others. In addition the relevant Sudanese laws, peace

³ Adaptive capacity is meant to indicate the ability and competence of a livelihood group to make the changes that will allow them to adapt.

accords, and the academic, donor, and NGO literature were reviewed, as well as the position statements and pronouncements of the armed factions. Interview topics dealt with statutory, Islamic and customary land rights and how these interact and change over time, the role of land rights in the conflict and prior to the conflict, customary and formal resource rights institutions and how these changed over time, environmental and migration history, approaches to adapting to changes in the environment and to the conflict, and livelihood functioning.

3. Environmental change and adaptation in Darfur

While not the sole factor in the cause and maintenance of the Darfur conflict, there is significant evidence that environmental change has acted as a principle contributor to the onset of armed confrontation in the region (Chavunduka and Blomley 2011; Fadul 2006; Abdul-Jalil, 2009; Abdul-Jalil, 2008; Flint, and de Waal 2008; Suiliman, 2011). As the droughts of the 1970s and 1980s in the Sahel accompanied rangeland degradation in North Darfur and regions connected to it further north and west, the camel nomads along with the agropastoralist *Zaghawa* tribe (Figure 1) sought to adapt. While their adaptation approaches varied, a primary strategy was to utilize in different ways the wetter lands to the south which were less impacted by multiyear drought. Chavunduka and Bromley (2011) describe in detail the progressive drying of the Sahel in Sudan and the southern movements of pastoralists and agropastoralists, and so this will not be covered here. Historically nomadic pastoralists enjoyed negotiated transient land rights within customary tenure to these southern lands, and these rights were operationalized through special corridors that passed through the tribal lands of neighboring farming groups, facilitating seasonal livestock movements (Figure 2). These corridors were established by arrangements made between the traditional leaders of the nomadic and farming groups, with the customary rights of each group respected. However the change in land resource rights to these southern lands sought by the pastoralists in the course of adaptation, involved permanent migration to lands they had previously only transited through, alteration of the timing and location of seasonal nomadic livestock movements, and engaging in farming to offset the decimation of their herds. For example the migrant pastoralists sought a change in access rights to the eastern *goz*⁴ areas to the south of El-Fasher in North Darfur as well as in *goz* areas in South Darfur. Chavunduku and Blomley (2011) also document the eastward migration of Darfur pastoralists into Southern Kordofan. Historically large portions of South Darfur were less cultivated because a significant number of its inhabitants were cattle pastoralists. But with the Sahelian droughts large numbers of migrants began to settle on land in the South which was previously unclaimed for agricultural use, but resided within areas claimed and used by the cattle pastoralist groups (Figure 1). These areas eventually became saturated with new inhabitants, leading to tensions and numerous disputes with the native pastoralists. As in virtually all forms of adaptation involving change in land resource use, the first challenge is adjusting resource rights systems to accommodate adaptive approaches and the contention which emerges. In the Darfur context this meant

⁴ *Goz* are areas of stabilized sand dunes that are preferred for agriculture.

interaction between those migrating south, and those who already claimed and inhabited these lands.

The southward migrations over time meant that rights to grazing and farmland had to be secured for the new arrivals. And while the customary land tenure system in Darfur was by and large able to manage this, it brought with it certain tensions that needed locally legitimate institutions to manage effectively and quickly. Two of these tensions included a large decrease in available grazing land, and a reduction in the practice of fallowing as part of shifting cultivation. These tensions highlight the adaptive value of highly decentralized and flexible land rights mechanisms and institutions for resolving problems as forms of adaptation develop (also see Chavunduka and Blomley 2011). Policy efforts that support such mechanisms and institutions and that are seen as legitimate and viable by all parties will support adaptation and sustain livelihoods. Policies that reduce the viability of, or eliminate such mechanisms and institutions or their flexibility, will work against adaptation, compromise livelihoods, and exacerbate tensions as different groups continue to seek change in rights of resource use, access and claim.

Apart from migration, an additional form of adaptation on the part of the nomadic pastoralists included becoming involved in meat and live animal exports to the Arab Gulf countries.⁵ These expanding livestock export markets favoured sheep, and many nomadic pastoralists from northern Darfur began to concentrate more on sheep and less on camels, altering migratory routes and patterns (and associated rights to land resources) in order to adapt to sheep grazing. While this form of adaptation was able to produce cash flows, the reduced focus on camels compromised the drought resistance of their herds (Fadul, 2006; El-Amin, 1999). Nevertheless the adaptation to focus more on export markets did provide cash benefits, to the degree that farmers also increased their livestock holdings to augment incomes, occasionally competing with pastoralists. Some farmers even became pastoralists, highlighting that some forms of adaptation are successful enough to draw in participation by members of neighbouring groups.

Both migration in order to access new lands and greater participation in export markets necessitated interacting in new ways with the *Fur* tribe (farmers) whose lands were increasingly utilized by the Arab pastoralists from the north. In this regard what proved most valuable was the flexibility of customary tenure (traditionally one of its strengths), and hence its ability to manage land rights relationships in a stable manner between agriculturalists and the migrant pastoralists (Abdul-Jalil, 2008; and Blomley 1989 generally). This was by and large successful and encouraged certain forms of interaction between the two groups. Until the outbreak of the current civil war, many nomads used to keep animals for their farmer counterparts. These farmers would

⁵ This form of adaptation is ongoing with Egypt recently signing an agreement with Sudan to import meat from Darfur (Egypt State Information Service (ESIS) 2012).

reciprocate with gifts and provided the rights to access the in-field remains of crops for animal fodder.

4. Facilitating Adaptation

Customary land tenure in Darfur has a long history of flexibility, adaptation, and stable management of land rights relations which enabled the tenure system to deal with stresses. As a general rule the specific customary tenure system in Darfur (called *hakura* tenure) allowed movement, temporary use, and even permanent settlement of newcomers such as nomadic pastoralists both as individuals and groups, provided that they adhered to local customary rules. Farming, grazing, hunting and forest use were included in such arrangements. Nomadic groups participated cooperatively because such arrangements facilitated their overall livelihood system. Grazing rights for nomadic groups were generally not denied and were granted under a variety of situations and conditions depending on the location and status of unharvested crops. Pastoralists from outside the area who wished to farm were usually accommodated within uncultivated waste-land or fallow-land areas, according to local customary norms. If the newcomer was an individual or few families, they would join an existing village and come under the administrative jurisdiction of its *Sheik*. However, if the number of the newcomers was large enough to constitute a separate village--such as in the case of the large *Zaghawa* migrations following the mid-1980's drought from their original areas in the northwest (Figure 1), they were allowed to have their own village and *Sheik* who would be accountable to the Native Administration of the area (Abdul-Jalil, 2008). In such a case the *Sheik* would not have jurisdiction over land and so was called '*Sheikh Anfar*' (*Sheik* of people) as opposed to the more powerful and prestigious office of '*Sheikh Al-Ard*' (*Sheik* of the land) which was open only to natives of the area (Abdul-Jilal 2006). Thus the 'sheik of the people' was an adaptation of the tenure system to the arrival of migrants who needed land access.

A significant aspect of customary tenure in Darfur is the 'Native Administration'. Under the colonial policy of indirect rule, tribal leaders were confirmed as part of a pre-existing native administration system and were deemed to be custodians of land belonging to their tribes. This effectively connected the customary tribal land rights system to statutory law and policy, which the independence government also embraced, for a time. Paramount Chiefs, who represent the highest authority in the Native Administration system, performed their duties through a medium level leadership position (*Omda*), and the latter through the lower level leadership of a village headman (*Sheik*). The Paramount Chief was responsible for allocating land for settlement and cultivation. Any tensions or disputes regarding land rights or natural resources would first be processed through the village *Sheik* who then communicated with the upper level of the Native Administration to resolve the issue—with the highest frequency of disputes between pastoralists and farmers occurring just before the rains in April when planting is about to commence on areas still being grazed by livestock. Thus the Native Administration provided a system of local governance (legitimate to both statutory and customary tenure systems) which managed the use rights of land and natural resources and facilitated the various groups to live in relative cooperation. Native Administrators were also entrusted with the role of changing land rights and

resource allocation arrangements to meet a variety of circumstances. Such changes included regulation of the grazing and farming activities of different tribes and outsiders as these changed via adaptation, so as to avert conflicts and tensions between farmers and pastoralists. Some of the specific resource rights adaptations the Native Administration managed as increasing numbers of migrant pastoralists began to use the area included:

1. The enforcement of boundaries that demarcate grazing and farming areas; regulation of the seasonal movement of pastoralists in terms of timing and location of migratory routes from their dry season grazing areas to wet season areas; containment and resolution of tribal disputes in the grazing areas; and the opening and closing of water points (Abdul-Jalil, 2007).
2. The management of an arrangement prior to the war whereby if pastoralist groups wanted to cross from Chad or points north, into Darfur, they would be linked to a local 'advocate' or sponsor from the local population, or someone from the incoming pastoralist group that was known locally. Such an advocate would be able to speak for and attest to the good intentions and behavior of the group in question. In this way the pastoralist group would be allowed to stay and negotiate grazing. Benefits from such an arrangement would often flow both ways. Because livestock were one of the few ways to store capital, herders were frequently welcomed by local farmers for the investment options they presented (O'Fahey, 2008).
3. Facilitating a tenure arrangement called '*acolgum*' or 'eat and go' which provided land access rights for people under hardship due to drought, war, and other calamities. People suffering from hardship were allowed to cultivate land from one to three years or until their home area improved, or it was safe to return. Usually the newcomer would only pay a symbolic gift or occasionally rent to the owner.
4. Supporting the role of 'land *sheiks*'. The land *sheiks* were important in the rainfed areas and had a number of responsibilities, including negotiation with nomads regarding the timing of the use of livestock migration routes through the cultivated areas. But perhaps the most important issue for the land *sheiks* was to manage the timing and use of the post-harvest fields for grazing while livestock were progressing through the migration routes. Historically the land *sheik* would inform local farmers of the date by which they needed to have their harvested crops and possessions out of their fields, otherwise they would not be able to complain about any livestock damage that might occur. This was an important role because in different years and in different areas, crops would be harvested at different times.

Such forms of adaptation are what those in Darfur themselves note are examples of how valuable the flexibility and even ambiguity of customary tenure is (as opposed to rigidity and clarity), because it allows for the elasticity needed in the tenure system to: 1) accommodate livestock migrations, 2) pursue a wide variety of adaptation options in drought years, and 3) importantly, allow for local derivation of 'on the spot' solutions to land resource rights problems as they emerge in the course of adaptation efforts. Bromley (1989; 2008a) also describes in significant detail the dangers of assuming that private property and clarity of boundaries in extensive arid land uses is the solution to problems of land degradation and land conflict.

5. Reduction in Adaptive Capacity: policy, aspirations, alternatives

While policy approaches to land resource rights systems can support adaptive capacity, for example by providing legitimacy to local level institutions, experimentation and decision-making, they can also aggravate the tensions that are inherent in such adaptation. Such aggravation can restrict land access, ownership and use by some sectors of society while advantaging others; facilitate opposed and confrontational sources of authority over land resources that are attached to separate constituencies; and powerfully constrain, threaten or act against acutely felt needs for land resource rights as part of adaptation efforts. The result can be to reduce the adaptive capacity of the land rights system. In extreme cases, use of land rights regimes in certain ways can cause and justify a variety of forms of land-related violence, such as ethnic cleansing or forced dislocation.

But reduction in adaptive capacity can also occur as a byproduct of successful adaptation.⁶ As the aspirations of successfully adapting groups increase, unless these are met, and alternatives provided, or the associated tensions managed, the result can be setbacks or failure in adaptation efforts, a reduced capacity of the land rights system to support adaptation, and a search for alternative land rights approaches to meeting aspirations, some of which can be quite problematic. This section looks at both forms of adaptive capacity reduction--policy and as a by-product of success.

5.1 *Policy driven reduction in adaptive capacity*

Given the important role of the Native Administration in adaptation in Darfur, it was unfortunate that the Sudanese government dissolved the Native Administration in 1971, creating a precarious institutional vacuum. The government then reinstituted it later but with members selected by government instead of local constituencies—thus compromising the legitimacy of the institution. The result is that the Native Administration is now highly distrusted and ineffective (Elmekki, 2009). This is particularly the case for the resolution of conflicts between nomads and farmers, which the Native Administration previously played a crucial role in (Abdul-Jalil 2008). This crippled much of the functionality of the customary tenure system (conflict resolution, land administration, enforcement of boundaries and agreements), and did away with the primary institution for the customary and statutory tenure systems to effectively interface in a way that facilitated adaptation.

The institutional vacuum created by the lack of a viable Native Administration had a direct effect on land dispute resolution, particularly between tribes and between pastoralists vs. farming

⁶ Successful adaptation is meant to indicate the positive outcomes of changes in livelihood strategies to adapt to new conditions.

communities during ongoing adaptation efforts such as those noted above. The result was widespread tension and conflict over land resources. These conflicts became acute and unresolvable in the absence of the Native Administration's original, legitimate dispute resolution mechanisms, and the inability of the government to replace these with viable, legitimate mechanisms based on statutory law. Unresolvable disputes over land resources between tribes eventually fed into developing narratives of injustice, victimization, and retribution which became aligned with different sides in the current war. Aggravating the situation, increasing use of the long-dormant Unregistered Land Act asserted government ownership over lands already claimed by the customary *hakura* tenure system, allowing outsiders to gain control over large areas without engaging the *hakura* system because the Native Administration no longer served its interface role. The law's interaction with customary tenure facilitated confrontation between the *Fur* and *Zaghawa* tribes, Arab pastoralists, and government. With no way to resolve the inevitable tensions and disputes over land rights as adaptation proceeded, and adaptive capacity of the customary tenure system significantly reduced, migrants from northern Darfur who desired to settle further south, began to claim land rights under the Unregistered Land Act, ignoring the *hakura* approach to guest accommodation for migrants. Instead they argued that such land now belonged to the government, as per the Act, and so could be given to them by the government. This led to great animosity among the native farming population.

Most land laws in Sudan that are relevant to Darfur were initially derived to serve areas in and around towns and on development schemes along the Nile valley, and were not intended for the wider rural areas of the country. Nevertheless such laws were passed as national legislation applicable to the entire country. In practice however for much of the history of this legislation (Runger, 1987; Gordon, 1986) the government did not interfere in the administration of customary rights in many rural areas, and the laws caused little initial concern or problems for the inhabitants of Darfur. However they came to be applied to the region when it became advantageous for those from elsewhere in Sudan, or those not belonging to the customary farming tribes to do so. The most problematic of these included:

1. The Land Settlement and Registration Act of 1925 (GOS 1970) details how property rights can be acquired through registration, mainly on the basis of occupation in good faith. Customary rights such as those connected to *hakura* rights in western Sudan are recognized in the law but were never fully incorporated into it. In practice for most of the law's history the government did not use it in the administration of customary rights in many of the rural areas of the country. But it was subsequently used to extract lands from the customary tenure system.

2. The Land Acquisition Act of 1930 (GOS 1930) provides guidance for the expropriation of land for public purposes. Decision-making for such expropriation is directed to the Council of Ministers, without real possibility for judicial review. The poorly defined concept of what a ‘public purpose’ really can encompass in the law, constitutes a significant basis for interference and expropriation at will. The Act provides for compensation for expropriated lands, either in cash or in kind, and any disputes arising through expropriation could be settled by arbitration, but without possibility for a fair appeal.
3. The Unregistered Land Act of 1970 (ULA) (GOS 1970) introduced a dramatic change in both statutory and customary land law. The law stipulated that all land not registered before the enactment of the ULA via the Land Settlement and Registration Act of 1925 became government land, and was deemed to be registered in its name. No proprietary rights could be acquired over such land, only usufructuary rights in the name of individuals. While it was a national law, the ULA was initially not applied to Darfur, because it was intended for the Nile areas, and because Darfur already had the *hakura* customary tenure system in place. Instead, both the 1925 and 1970 Acts were aimed at the large mechanized agricultural areas along the Nile and the large fertile savannah areas of eastern Sudan. It was only later that they came to be applied to Darfur.
4. The Civil Transactions Act of 1984 (GOS 1984) partially recognized customary acquisition of land, stating that local communities have usufructuary rights over land they occupy, although legal ownership still remained with the state. This Act reaffirmed that ownership rights to land ultimately resided with government, thus solidifying the subjugated position of customary law and tenure.
5. The Emirate Act of 1995 (GOS 1995) was passed by the state of West Darfur to contribute to a larger effort to make the Native Administration more responsive to Arab pastoralists. One result of this law was the division of a large area known as ‘*Dar Masalit*’ (Figure 1, inset) into 13 estates, five for the native *Masalit* farmers and eight for Arab camel herders. Prior to this division all the land in *Dar Masalit* was claimed by the *Masalit* tribe. The *Masalit* viewed the division as a way for the Sudanese government to downgrade or abolish their longstanding customary claims to the land (Adam Abdul-Jalil and Abdal-Kareem 2011). The Act and the resulting division of *Dar Masalit* are thought to have played a major role in the armed conflict in 1997 between the *Masalit* and Arab pastoralists in the area. The recruitment of *Masalit* youth into the present rebel militias can be linked to the problems over land that the Emirate Act brought about (Adam Abdul-Jalil, and Abdal-Kareem, 2011).

6. The Investment Act of 1998 (GOS 1998) opened the door for the allocation of large tracts of land by central decision-making at the federal and state levels, without consultation with local customary inhabitants or recognition of their rights. The law built upon the 1970 Unregistered Land Act by allocating land for investment which was owned by government under the 1970 law.
7. The Local Government Act of 2003 (GOS 2003) devolved some powers regarding land to the locality level, but then reduced the number of localities by 80 percent. A 'commissioner' appointed by the President was declared head of the executive branch of each locality, and also head of the five administrative departments within each locality – agriculture; animal and natural resources; finance and planning; health, education and public affairs; and engineering and town planning. By reducing the number of localities, each one was much larger than prior to the Act. The positioning of the commissioner as head of the locality and of the five departments, concentrated decision-making in this position and undermined the role of locally legitimate authorities. The appointment of the commissioner by the President ensured that the priorities of the central state, and not that of local populations would be pursued by the locality administration. The Native Administration was deemed to be part of the locality government and was subverted to the interests of the state by having its authorities now needing to be appointed by state governors and commissioners as opposed to locally selected.

While some of these laws provided the opportunity for a much needed connection or interface with the more flexible *hakura* customary land tenure system, the opportunities were largely ignored. By far the most damaging legislation to the adaptive capacity of land rights in Darfur was the Unregistered Land Act—illustrating the influence that policy can have on adaptive capacity, in this case negative. The potential for using 'guiding principles' within the Unregistered Land Act for recognizing customary land rights acquired through occupation, were rendered meaningless by court decisions and thus a significant opportunity for statutory and customary law to become mutually accommodating was missed. A number of large-scale mechanized agricultural projects, which required large tracts of land with statutory tenure arrangements, have been introduced in southern Darfur using the Act. Chavunduka and Blomley (2011) note a similar process for Southern Kordofan. The government was also able to distribute large plots of farmland to urban merchant elites from outside Darfur (primarily from central and riverine Sudan). This process of land allocation by the state caused considerable animosity among many in Darfur's indigenous farming population. The original customary user of unregistered land became subjected to the government who could exercise its legal rights at will, thus significantly undermining the ability and authority of customary tenure structures and their adaptive capacity.

An additional policy prescription further compromised the adaptive capacity of the overall tenure system (statutory - customary). In 1990 the government bypassed the land *sheiks*, and simply announced the date by which livestock would be allowed into rainfed crop areas Darfur-wide. This occurred without negotiation between farmers and herders, or an appreciation of the variation in harvest times across space and time, particularly in the context of adaptation and the needed role of the land *sheiks*. The position of the land *sheik* was thus undermined significantly. In many areas this meant that livestock entered cultivated areas prior to harvest and destroyed crops. The reason for the government policy intervention appears to have been that in years of drought some areas were congested with livestock waiting to enter post-harvest fields, and pastoralists asked farmers to harvest quickly so as to allow grazing. Some pastoralists complained to government about the timing and access problem, and also claimed that farmers were expanding their cultivated areas. As a result the government decided on its own calendar as to when pastoralists could enter cropped lands, instead of supporting the negotiated approach of the land *sheiks*. This weakened the flexibility of customary tenure and its ability to manage relationships in a stable manner between farming and pastoral groups as they sought to adapt to each other in changing resource access and use circumstances. The farmers reacted to this government intervention and the large increase in crop damage caused by livestock that were herded into fields prior to harvest, especially near Jebel Mara where rainfed crops are harvested later (and where the current war began), by burning the bush grazing areas around their crops so as to discourage entry into the overall area by pastoralists. The nomads then reacted by taking their herds directly into the unharvested standing crops to graze, and by burning farming villages. The farmers then reacted by killing livestock.

Cases of crop damage in the past had the nomad and farmer in question going to a Native Court headed by a Paramount Chief to negotiate damage payment. But with the new government calendar and increasing use of statutory laws, the nomads no longer felt obliged to go to these courts or negotiate for damage payments, further undermining the customary tenure system, aggravating relations between the two groups, and reducing the overall adaptive capacity. This meant that if a farmer wanted to get damage payment for his crops he would need to go to a statutory court, which was expensive, and where statutory law meant that a different burden of proof was needed. Farmers regarded such courts as pro-Arab pastoralist and so did not engage them, which rendered the courts useless in terms of their ability to manage tensions that emerged as part of adaptation efforts. With no widely legitimate institutional way to resolve such problems, farmers instead began to burn more grazing areas, arm themselves, and take matters into their own hands. The pastoralists then armed themselves in response. Thus not only did this policy cripple adaptive resource rights arrangements⁷ and the management of tensions between pastoralists and farmers, but actively aggravated tensions such that they contributed to the current conflict. This scenario highlights the fragility of some forms of adaptation and their responsiveness to policy change and implementation for better or worse. Well-functioning approaches to important aspects of adaptation, such as land resource rights, can easily be turned

⁷ In other words modified land rights, or modification in the way land rights operate, that are able to engage changing and/or new situations.

by inappropriate policy change to produce outcomes which aggravate the tensions that are a part of adaptation, as opposed to easing them.

5.2 *Aspirations and alternatives*

The Darfur case is also important in an adaptation context because it demonstrates that with successful adaptation, subsequent problems can emerge which will need sustained policy attention in order to retain the viability of the adaptation. While the tenure system did successfully provide the customary land rights needed to adapt, as noted earlier representation of migrants in the tenure system was limited to the relatively low-ranking ‘*sheik* of the people’. The problem with this partial participation in the *hakura* tenure system is that ultimate control over land and political participation are inseparable in Darfur. Such that full political participation is kept away from communities of migrants such as the *Zaghawa* and Arab pastoralists, whose communities and in many cases wealth had grown considerably over the years, attesting to the success of the overall adaptation. But eventually the communities of migrants and their descendants began to want their own Native Administration, Paramount Chief, and permanent claim to large land areas. This highlights an important aspect of the adaptation process, which is that initial success can lead to subsequent aspirations, and then tensions which require appropriate policy attention when those aspirations are not adequately dealt with informally. Unfortunately however this aspiration on the part of migrants began to take hold when state land rights policy change noted above also began to have significant repercussions. This led to the aspiration for greater political participation to become aggravated as opposed to equitably resolved. With appropriate policies and institutions lacking, many farmers then began to no longer allow nomadic ‘guests’ onto their lands as they did in the past, for fear that they or their clansmen would follow through on their aspirations and claim lands under the Unregistered Land Act and drive out local native farmers. For the same reason many farmers began to keep their farms enclosed and prohibited livestock entry long after the beginning of the *talique*⁸ fallow season.

With the reduction in adaptive capacity of the overall land rights system due to the combination of state policy acting to degrade customary tenure and increased aspirations of pastoralist migrants, land tenure insecurity became a serious problem for all concerned, with the consequence being that fears about losing land access rights then drove the pastoralist migrants to search for and experiment with alternatives to the customary *hakura* system--such as further use of statutory law, Islamic law, and forms of resistance and armed confrontation. Widespread pursuit of these alternatives within *hakura* administered areas then degraded the *hakura* system itself, so that it began to have trouble functioning in a cohesive and adaptive manner. Not

⁸ Rain-fed farmland.

surprisingly those native to the *hakura* system resisted this degradation, also in a confrontational way. Thus while experimentation in an adaptation context can produce positive outcomes, it can also produce alternatives which are negative and disruptive.

As an example, various interpretations of Islamic law regarding land rights emerged, with one in particular having a significant role in the current armed conflict. This interpretation begins with invoking, ‘all land belongs to Allah’ and follows with ‘and is therefore open to any Muslim’. This allows those that invoke this interpretation to simply move onto and claim lands and ignore both the *hakura* and statutory system. The interpretation is used as a response to farmers who, in resisting the degradation of the *hakura* customary system, began to exclude pastoralists from land access. Use of this particular interpretation of Islamic law is confined to specific groups, primarily Arab pastoralists (including the *Janjaweed* and their constituencies) as well as foreigners from Chad and elsewhere. It is not used by the farming groups who have prior claim according to *hakura* law, and who are also Muslim. As a result this use of Islamic law (as a form of adaptation) causes considerable animosity on the part of the latter group.

6. Policy Lessons from Darfur

Change in land resource rights relationships between individuals, households, communities, livelihoods, commercial interests and the state will be at the forefront of both planned and autonomous adaptation efforts. But because such relationships can be significantly responsive to policy attention, supporting innovative ways of dealing with the inevitable rights-related changes in customs, practices, and forms of claiming and disputing beyond simple prescriptions that ignore local level adaptive capacities will be of high value. The Darfur case provides a number of policy considerations relevant to other regions, the most important of which are described briefly below.

There often exist latent opportunities to effectively connect existing statutory land law with customary forms of land tenure in order to maximize adaptive capacity, and these need to be spotted and their potential realized. These can exist as specific articles that are intended to interface with customary law. Unfortunately as in the Darfur example, a number of statutory laws presented such opportunities but these went unrealized, with significant repercussions on the overall land resource rights adaptive capacity of the statutory – customary mix.

Western perceptions of the pervasive value of clarity, predictability, and rigidity in land rights arrangements and their applicability across all situations in the developing world need to be re-evaluated. Chavunduku and Blomley (2011) discuss at length this need for flexibility in land regimes for Southern Kordofan. What is valuable in an adaptation scenario is a significant degree of flexibility, ambiguity and elasticity in resource rights regimes that can accommodate the variety of forms of adaptation that local communities will be experimenting with. This facilitates the derivation of much more localized ‘on the spot’ solutions by legitimate authorities to

adaptation-related tensions as they emerge. This aspect of adaptation needs to be appreciated and incorporated into adaptation programming, as opposed to insisting on clarity, demarcation, and registration of rights along the lines of the developed West, which will face a different set of resource rights adaptation scenarios.

There needs to be an appreciation that tensions over land resource rights will emerge as adaptation proceeds, even successfully. The need to resolve these tensions as they emerge highlights the primary role of legitimacy in land resource rights mechanisms and institutions. Policy efforts that support mechanisms and institutions that are seen as legitimate and viable by all parties will support adaptation and sustain livelihoods. Policies that reduce the viability of, or eliminate such mechanisms and institutions will work against adaptation, compromise livelihoods, and raise tensions as different groups seek change in rights of resource use, access and claim.

There needs to be a greater appreciation of the degree of responsiveness of land resource rights situations to policy intervention, for both improving and worsening adaptation scenarios. Thus considerable care needs to be taken in programming and support to governments and NGOs regarding the ability of specific policies to effectively support forms of adaptation and the accompanying tensions. In this regard successful adaptation scenarios can be easily ‘turned’ into unsuccessful scenarios or worse with the implementation of inappropriate policies, or the overly casual extension of policies designed for one area (or country) to an area with different adaptation and policy needs.

Processes (including policy processes) that thwart attempts at forms of adaptation which are acceptable to a broad mix of communities will not stop the process of adaptation itself for groups who need to pursue a change in rights to resources. Barred from pursuing certain forms of adaptation, groups will pursue alternatives, including those that affect society negatively. Certain land resource rights arrangements can flourish in policy poor environments, and these can look attractive in certain situations. These include certain interpretations of religious law; warlord law; highly discriminatory, exploitive and abusive land rights arrangements; resource extractive approaches which degrade lands; and as in Darfur’s case, armed conflict.

7. Conclusion

The efforts of the international development and environmental change communities in prescribing specific adaptations for livelihoods in the developing world are receiving considerable attention. However it will be impossible for efforts and actors external to local communities, lineages, and livelihoods to pre-determine all adaptation possibilities. Instead a great many of the more workable adaptation approaches will come about through localized processes of innovation and experimentation. As we learn more about the process of adaptation, it becomes increasingly clear that communities most affected by environmental change will pursue their own forms of adaptation whether they are assisted by state and international efforts or not. But regardless of where adaptation efforts originate for benefits to be realized and

tensions resolved, rights to resources will need to be reconfigured. How this reconfiguring happens, and its impact on the process of adaptation will be critically important, and policy considerations will need to focus on well thought out approaches in order for their impacts to be beneficial.

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Figure 1. Traditional areas of Darfur's ethnic groups.

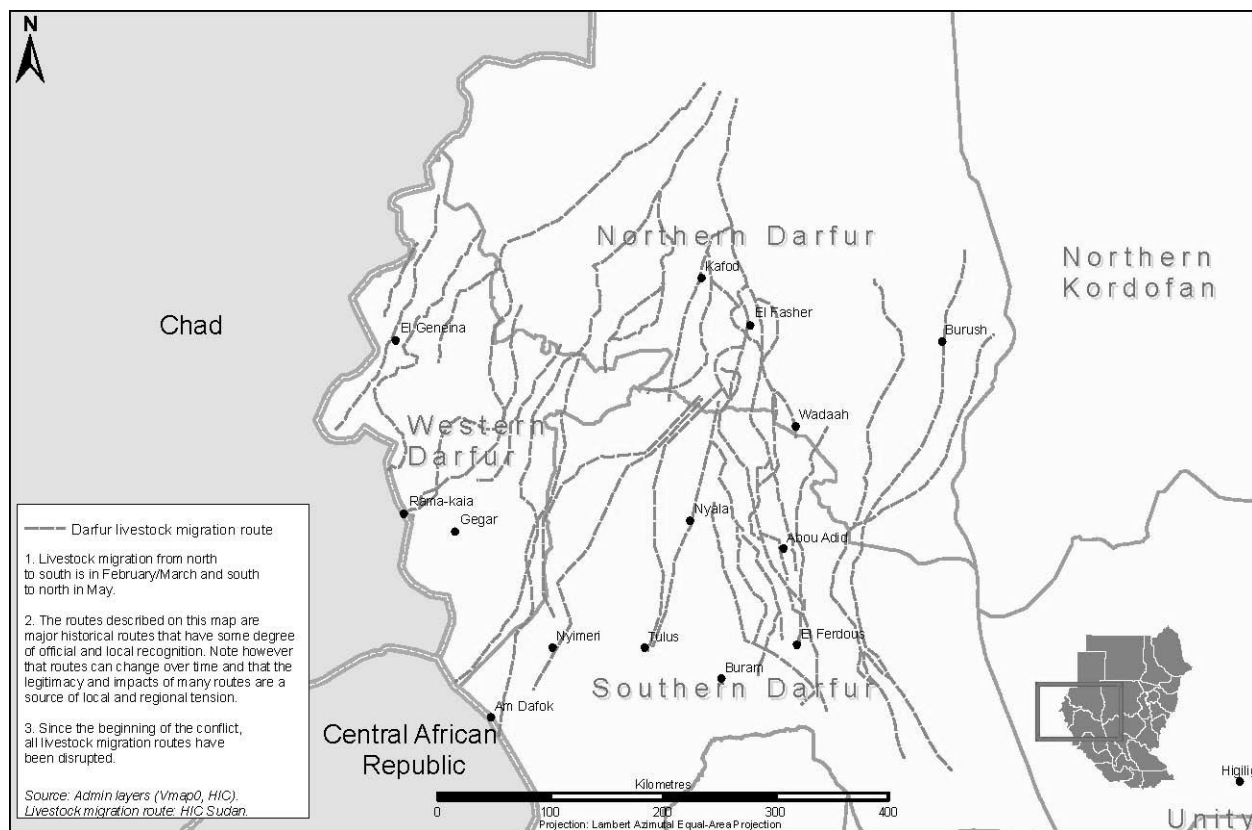


Figure 2. Livestock migration routes used by pastoralists in Darfur.