

Chapter 4

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**The Sahel and the climate security debate**

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## Summary

With climate change becoming a leading global political issue, the idea that there is a close link between global warming and violent conflicts has also caught international attention. The Sahel, in particular, is pointed out as the clearest example where there are climate-driven conflicts. Many politicians and international civil servants in particular, seem attracted to this idea. For instance, in a newspaper article UN Secretary-General Ban Ki-moon made a connection between global warming and the Darfur conflict (Ban 2007). The idea was also at the crux of the decision to award the 2007 Nobel Peace Prize to former US Vice President Al Gore and the Intergovernmental Panel on Climate Change (IPCC). According to the Norwegian Nobel Committee, human-induced climate change is one of the main causes of violent conflict and war in the world today. In his presentation speech at the award ceremony in Oslo, chair of the committee Professor Ole Danbolt Mjøs said:

“The consequences (of climate change) are most obvious, however, among the poorest of the poor, in Darfur and in large sectors of the Sahel belt, where we have already had the first ‘climate war’. The wind that blows the sand off the Sahara sets people and camels moving towards more fertile areas. The outcome is that nomads and peasants, Arabs and Africans, Christians and Muslims from many different tribes clash in a series of conflicts. There are many dimensions to this, but it is growing increasingly obvious that desertification is a central underlying factor. The pattern from Darfur has now spread to Chad and the Central African Republic. Large parts of the Sahel belt, from the Sudan to Senegal, are coming under threat.”

([nobelpeaceprize.org/en\\_GB/laureates/laureates-2007/presentation-2007/](http://nobelpeaceprize.org/en_GB/laureates/laureates-2007/presentation-2007/))

This is the essence of an argument about the climate-conflict link in the Sahel that consists of two elements:

- Global climate change leads to drought and desertification, which in turn lead to resource scarcity.
- This resource scarcity leads to migration and the emergence of new conflicts, or it triggers existing, latent conflicts.

This chapter takes a critical look at both these claims and assesses them on the basis of available international research. But before assessing these two claims, a brief review the climate security literature on the Sahel will be presented.

## The climate security debate: theories, politics and missing evidence

The idea that climate change leads to violent conflicts in general can be regarded as a continuation or revised version of the Malthusian concept of scarcity of resources as a cause of environmental degradation, poverty and an escalating struggle for resources. Thomas Homer-Dixon is the best-known proponent of the so-called environmental security school. According to Homer-Dixon, resource scarcity can be caused by population growth, environmental degradation or social inequality (Homer-Dixon, 1994, 1999). He also believes that arid regions in Africa are particularly prone to scarcity-induced conflicts. More recently, he has also focused on climate change as a cause of resource scarcity and war (Homer-Dixon, 2007).

A team of Swiss researchers associated with the Swiss Peace Foundation have also been prominent representatives of the environmental security school. They have had an even more pronounced focus on the Sahel as a crisis area (Bächler and Spillmann, 1996; Bächler 1998). According to Bächler (1998), the Sahel is a typical example of an area where conflicts are caused by environmental



The concept of scarcity as a cause of war and violence has taken root in the media and popular scientific publications.

degradation. In this region, animal husbandry and farming have led to erosion of the landscape (p. 69), population growth has led to deterioration of the vegetation (pp. 67 and 70), and livestock herding has led to general overgrazing (p. 69). Bächler (1998) presents a list of 11 conflicts that allegedly demonstrates the link between environmental degradation, socio-economic change and violence in the Sahel.

The concept of scarcity as a cause of war and violence has taken root in the media and popular scientific publications too. The American journalist Robert Kaplan has been particularly influential. In a well-publicised article from 1994, he claimed that the conflicts in Liberia, Rwanda and Somalia were unequivocally the result of overpopulation and subsequent environmental crisis in Africa (Kaplan 1994).

Since then, a range of journalists and popular-science writers have played a significant role in spreading a Neo-Malthusian message to politicians and the general public (e.g. Diamond’s 2005 bestseller). The scarcity perspective has also been promulgated in a special edition of *National Geographic Magazine* focusing on Africa in September 2005 (see Moseley 2005 for a critical commentary).

A major criticism of the security school is that the term “resource scarcity” is defined so vaguely and broadly that it loses all meaning (Gleditsch, 1998; Fairhead, 2001; Richards, 2005). Since armed conflicts are almost without exception about control over land, such conflicts will necessarily have a resource dimension. However, it does not ensue that this dimension explains the conflicts. It is also misleading when such different processes

as environmental degradation, increased population pressure and inequitable access to resources are forced together into a single concept of resource scarcity. In this way, the concept loses its analytical power.

Peluso and Watts (2001) also argue that conflicts cannot be understood on the basis of a simple chain of events triggered by resource scarcity, via reduced economic activity and migration, to a violent outcome. Instead, violence is context-specific, and at the same time it is a result of over-arching power and production relations.

Elinor Ostrom, who received the Nobel Prize in economics in 2009, also represents a perspective that stands in contrast to the environmental security school. She and her collaborators have shown how scarcity of resources might lead to co-operation and sustainable use instead of conflicts (Ostrom, 1990; Poteete *et al.* 2010).

Some critics claim that population growth can actually serve to increase the resource base and lead to sustainable agricultural intensification in keeping with the Danish agricultural economist Ester Boserup's theory (Boserup, 1965). There are in fact examples from Africa of increases in population combined with favourable government policies that have led to increased investments per unit area in the form of work and capital and thus an improved resource base (e.g. Tiffen *et al.*, 1994; Mortimore, 1998; Benjaminsen, 2001).

While until recently, the focus in the scarcity literature was on "over-population" and the associated "overuse" of renewable natural resources, climate change has been increasingly in focus as a prime cause of conflicts only during the last few years. As already mentioned, the Darfur conflict is then often presented as the best example of the correlation between climate

There is no evidence of a falling or a rising trend in rainfall in Darfur in the period 1972–2002.



and conflict. For example, Jeffrey Sachs (2007: 24) states that "Darfur's extreme poverty, rising population, growing water stress and desertification are all important contributors to

the Darfur crisis. (...) extreme poverty, falling incomes and failing rains ... are the crucial drivers of conflict in less developed countries; much less solid evidence implicates political repression".

This is a good example of how Malthusian factors and climate change are merged into one story to explain conflicts. Homer-Dixon has also claimed – without undertaking any detailed studies of the politics, climate or ecology in Darfur – that climate change is one of the causes of this conflict: "There is evidence that warming's effect on crops and pastureland is a cause of the Darfur crisis" (Homer Dixon, 2007). In an online discussion forum, however, he refuses to go so far as to say that climate change is the main cause of the conflict in Darfur ("In the case of Darfur, it's pointless to ask about, or to argue over, the relative importance of climate change as a cause of the violence. But based on the evidence

available, we can say with considerable confidence that any adequate description or explanation of the crisis must include climate change as a causal factor”, [badc.nerc.ac.uk/data/cru](http://badc.nerc.ac.uk/data/cru)).

A report published by the United Nations Environmental Programme (UNEP) in 2007, which received extensive media coverage and obtained political influence, also claims that there is a close link between climate change, desertification and the conflict in Darfur (UNEP, 2007). The report attaches a great deal of importance to the fact that the average rainfall in some parts of Darfur has decreased by 16–34%, if the periods 1946–1975 and 1976–2005 are compared. However, the report fails to mention that since the mid-1980s, rainfall has increased again. For example, if we look at the 30-year period prior to the conflict breaking out in 2003 there is no decreasing trend (Kevane and Gray, 2008). In fact, there is no evidence of a falling or a rising trend in rainfall in Darfur in the period 1972–2002.

This fact does, however, not impress Mazo (2010) who insists that Darfur is “the first modern climate change conflict”. He argues that although climate change was not a necessary or sufficient condition for the conflict, it was “a critical factor underlying the violence” and that “to say that other factors were equally, or even more, important politically or morally is not to deny that Darfur was a climate-change conflict” (Mazo 2010: 85–86). He supports this argument primarily by using the above-mentioned UNEP report as well as a recent article by Burke *et al.* (2009). The latter study focused on temperature instead of rainfall and reported a strong correlation between annual temperature and the incidence of civil war in Sub-Saharan Africa during 1981–2002. However, according to Buhaug (2010), there are reasons to be sceptical about the results of Burke *et al.* (2009). The study applies an unconventional definition of civil war, studying years that generated at least 1 000 battle deaths only and failing to distinguish between lesser war episodes and peace. The restrictive sample inclusion criterion also implies that many relatively large conflicts are excluded from the analysis. In addition, Buhaug shows that the original findings are not robust to small changes in the climate parameters and model specification. Finally, he points out that since 2002, the final year of Burke *et al.*’s sample, civil war incidence and severity have decreased further in Africa while warming has persisted.

The idea that climate change leads to more violent conflict has earlier been criticised by for instance Barnett (2003), Nordås and Gleditsch (2007), Theisen (2008) and Salehyan (2008) who did not find any evidence for scarcity being a driver of conflicts. Nordås and Gleditsch (2007: 628) also remark that “even the IPCC, which rightly prides itself of being a synthesis of the best peer-reviewed science, has fallen prey to relying on second- or third-hand information with little empirical backing when commenting on the implications of climate change for conflict”.

Finally, to look beyond the aggregate level and the general concepts usually used in this debate, Buhaug *et al.* (2010) operationalised the hypothesised link between climate change and conflicts. They identified three main processes that this link could potentially consist of; intensification of natural disasters, increasing resource scarcity, and sea-level rise. These processes could then cause destruction of infrastructure, increased health risk, and loss of livelihood. It should be stressed, however, that these are hypothesised links that find little support in the empirical literature, whether based on qualitative case studies or quantitative large N-studies.

### **Does climate change lead to desertification?**

Claims about desertification in the Sahel are as old as European presence in the region. Already in the early 1900s, there were debates about whether desertification in French-occupied West Africa was a man-made process or caused by desiccation (Benjaminsen and Berge, 2004). With time, however, the view that it was created by local overuse of natural resources prevailed and even during the droughts of the 1970s and 1980s this view dominated in research, policy and media presentations.

From the late 1980s, claims of widespread degradation and desertification in the Sahel have been undermined by a number of studies. For instance, scientists at the National Aeronautics and Space Administration (NASA) in the USA have studied satellite images of the southern limits of the Sahara and concluded that the edge of the desert moves back and forth as a direct result of annual rainfall (Tucker *et al.*, 1991; Tucker and Nicholson, 1999).

Furthermore, a number of studies published from the late 1980s led researchers to increasingly question the idea of desertification in the Sahel. Some of this research was reported by *New Scientist* in an article entitled “The myth of the marching desert” (Forse 1989). This research led to what has been termed a paradigm shift in drylands research (Warren and Khogali, 1992; Behnke and Scoones, 1993; Benjaminsen, 1997). It recognises the resilience and variability of drylands and stresses the need for flexibility in coping with a highly unstable environment. These ideas have led to the questioning of ecological theory based on notions of equilibrium, carrying capacity, succession and climax as applied on tropical drylands. Instead, non-equilibrium ecological theory states that the vegetation in drylands varies with the annual rainfall and that external factors such as climate, rather than livestock numbers, tend to determine the vegetation composition and cover (Ellis and Swift, 1988; Behnke, Scoones & Kerven, 1993). Moreover, unavailability of forage in bad years may depress livestock populations to the point where the impact of grazing on vegetation is minimal (Sullivan and Rohde, 2002). Therefore, in areas of fluctuating climates, rainfall rather than density-dependent factors related to herbivore numbers may ultimately be the most significant variable determining

herbivore populations. Wet season pastures such as in the West African Sahel, with its short rainy season, domination of annual grass species, and high resilience, would be a typical example of a non-equilibrial system (Hiernaux, 1993; Turner, 1993; Benjaminsen, 1997). The herders’ use of pastures is adapted to the seasonal changes in these drylands. During the rainy season, when the grass grows, herders often move, and therefore exercise little pressure on the vegetation (Hiernaux, 1993).

Since it is largely rainfall that drives the Sahelian ecosystem, global warming might in the long run lead to desertification – if it reduces rainfall. However, as demonstrated by Buontempo *et al.* (2010) in [Chapter 3](#), there is currently considerable uncertainty about current rainfall trends and projections in the Sahel. Not only are there uncertainties about future scenarios, but there are also some disagreements about how to read available climate data. For instance, Hulme (2001) and Chappell and Agnew (2004) disagree on how to interpret rainfall data from the Sahel for the period 1930–1990. While Hulme (2001) hold the position that there was a 20–30% decline, Chappell and Agnew (2004) question this claim arguing that this decline was largely produced by historical changes in the climate station network



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Climate researchers in general stress that there is a great deal of uncertainty as to how global warming will affect the climate in the Sahel. This is also underlined by the IPCC in its fourth report (Boko *et al.* 2007: 444), which points out that the various models do not concur concerning future climate scenarios for the Sahel. While some models support the theory that this region will become drier, other models suggest that it might rain more in the future in the Sahel (e.g. Haarsma *et al.*, 2005; Odekunle *et al.*, 2008).

Buontempo *et al.* (2010, [Chapter 3](#)) also highlight the problem of current generation climate models not being able to capture processes driving Sahelian climate in the 21st century, in particular as concerns precipitation. In addition, given the large disagreement between models, they advice against basing the assessments of future climate change in the Sahel on the results from any single model in isolation. Until the processes responsible for the projected changes can be understood and constrained, the long term future climate change impact on Sahel rainfall will remain uncertain.

Throughout the Sahel, there has now been a partial recovery of rainfall over the last 20 years. Research on the Sahel is thus no longer discussing desertification, but the fact that the Sahel has become greener. For instance, in November 2005, the Journal of Arid Environments published a special issue on “The Greening of the Sahel” (see Hutchinson *et al.*, 2005 and Olsson *et al.*, 2005).

Hence, climate change may lead to drier conditions and desertification in the long term if rainfall declines. It is, however, problematic to conclude that current rainfall trends are on the decline. In fact, uncertainty remains thus far the key characteristic of climate scenarios for the Sahel.

### **Do Sahelian droughts lead to more conflicts?**

There is not a lot of research to build on in order to answer this question. As already mentioned, there is some disagreement in how to interpret the role of drought in explaining the case of the conflict in Darfur. In order to illustrate the potential role of drought in such conflicts, I will, in this section, dwell on two cases from Mali taken from my own research (Benjaminsen and Ba, 2009; Benjaminsen, 2008): The first case deals with a conflict between settled farmers and migrating pastoralists in the inland delta of the Niger river. The other example is the Touareg rebellion, which was a major conflict that escalated to civil war-like proportions.

#### *A farmer-herder conflict in the inland delta of the Niger river in Mali*

Historically, the delta is one of West Africa's richest regions, in terms of farming, herding and fishing. The Niger and its delta allow farmers to grow crops farther north than anywhere else in the West African Sahel. At the same time, the delta represents an essential resource for pastoralists in the dry season. Herders and their livestock congregate in the delta region in the dry season from December to June, while in the rainy season (July to September) and in the early part of the dry season, they wander up to several hundred kilometres to reach good pastures in the savannah.

In addition to being a source of drinking water for livestock, nutrient-rich pastures called "burgu" grow in the water here. These various water plants are found in deeper water than rice. During the last few decades, paddy fields have been extended, at the expense of burgu. It is reckoned that roughly a quarter of the burgu areas have been turned into paddy fields since the 1950s (Kouyaté 2006). This is partly the result of reduced

water levels in the river during the droughts in the 1970s and 1980s (see [Figure 2](#)) when the paddy fields dried out and new ones were established in burgu areas. In addition, development

of a hydroelectric dam in Sélingué in southern Mali, which was completed in 1982, is a major cause of the lower water levels downstream (Turner 1992, Cotula and Cissé 2006). As we shall see, government policy has also played a decisive role in this process.

Over the last few decades, there have been a growing number of conflicts about who has control of the land in the delta (Barrière and Barrière, 2002; Ba, 2008). In order to understand the current resource management regime and the ensuing conflicts, we need to look at the

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history of the region. In 1818, Islamic clergymen mobilised a jihad and conquered the delta region under the leadership of Cheikou Amadou. This resulted in the establishment of an Islamic theocratic state, the Dina, based in Hamdallahi, south of Mopti. The Dina formalised many of the customary resource management principles and rights in the delta region. As part of this formalisation, the delta plain was divided up into administrative units called leyde (singular: leydy). Traditional village chiefs, called Jowros were authorised to manage these units, and all users of the burgu pastures had to pay a fee to the local Jowro. This is still the basis of the current system. Today there are 31 leyde in the delta region.

The Jowros, who are noble Fulani pastoralists (Rimbé), were to manage the pastures, while responsibility for allocating farmland was delegated to a Bessema, who was the chief of the low-caste Rimaybé. Both the Rimbé and Rimaybé are Fulani, but while the former are traditionally pastoralists and thus have high status, the latter are primarily farmers and have low social status.

When this area came under French rule in 1895, the French retained many of the administrative principles of the Dina regime. For example, the Jowro were allowed to continue to operate as “masters of the pastures” and collect fees from users of these pastures. Then, in 1960, Mali became independent under a socialist government led by Modibo Keita. The new government viewed “development” in terms of industrialisation and modernisation of farming. Pastoralism was regarded as an obstacle to this kind of modernisation. Nomadic herding was also seen as counter to rational resource management. Modibo Keita said that settlement of all nomads was one of the most important tasks of the new state. Only then could herders become productive citizens (Benjaminsen and Berge, 2004). The socialist government also regarded the Jowros as feudal lords and generally tried to undermine their authority.

In 1968, Lieutenant Moussa Traoré led a coup that resulted in a military government, which eventually to some extent reinstated the Jowros. By the next coup d'état in March 1991, which introduced democratic elections, the Jowros had once again become powerful local actors through alliances with the cadres in the only permitted political party.

The village Saremala is located in Kounary leydy in the heart of the delta. In the village live the local Jowro and a small number of Rimbé, while the vast majority of the villagers are Rimaybé. The Office Riz Mopti (ORM) – the state organisation of promotion of rice cultivation – is active in this region. Since the state formally owns all the land in Mali, the ORM can confiscate land at will. In particular, much of the burgu pastures controlled by the Jowro have been confiscated and turned into paddy fields. These fields have been divided up into equal-sized parcels of land and leased out to people who have applied to the ORM for land. In addition, there has been widespread random cultivation of burgu pastures by local

Rimaybé farmers. The massive loss of burgu pastures, which constitute the power base and main source of income for the local Jowro, is leading to a gradual transfer of local power from the Jowro to the Bessema. A positive aspect of this is that the previously underprivileged Rimaybé now have more power and a higher standard of living. A negative aspect is that important pastures used in the dry season are disappearing and being replaced by paddy fields. These are pasturelands that the entire pastoral system in the delta region depends on.

In the wake of the transition to democracy in 1991, the state's presence in rural areas was reduced for a period. This was in general a time of great uncertainty about the future direction of the political and administrative system in Mali. State bodies were reorganised, and plans were laid for a new, major decentralisation reform. Many local actors took advantage

The drought contributed temporarily to the shrinking of available burgu pastures for pastoralists.



of the power vacuum that arose in the early phase of the decentralisation process, by taking possession of land in various ways. This also happened in Saremala. Farmers extended their

fields into pasturelands, while the Jowro tried to regain control over the lost burgu areas that had been converted into cultivated farmland. Farmers usually give a small symbolic share of the harvest (usually about 5 kg) in recognition of the person who owns the land according to customary law. However, the political changes and the state's temporary withdrawal since 1991 had whetted the Jowro's appetite, and he decided to try to take control of the cultivated land and introduce a clearer tenant farming system with a larger yield for the owner of the land. This strategy failed because of strong resistance from the Rimaybé.

Frustrated at his loss of power and the loss of the burgu pastures, the Jowro decided to take the Rimaybé to court in 1994. On 25 August 1994, the local court in Mopti ruled in favour of the Jowro, establishing that he had customary rights over all the land in Saremala, not just the pastureland. However, the Rimaybé appealed the case to the Appeal Court in Mopti, which ruled on 31 May 1995 that while the Jowro had customary rights, the Rimaybé had usage rights to the same land. While both parties interpreted this ambiguous ruling in their own favour, the Jowro appealed the case to the Supreme Court. At the same time, the Jowro of Saremala, started acting as if his ownership rights had been finally confirmed by the legal system, banning Rimaybé farmers from cultivating the land. At the harvest in December 1995, he announced a general ban on harvesting rice, stating that all harvested rice would be confiscated by force. The Rimaybé (farmers) then paid 18 armed guards to protect them while they harvested their crops. Despite the guards, there was an armed confrontation between the Rimbé (herders) and the Rimaybé on 23 January 1996 resulting in two dead and 16 injured farmers and herders. The village

chief, a Rimaybé, claims that the Jowro had bribed the guards to look another way and not intervene when the Rimbé tried to force the Rimaybé to stop harvest the rice.

On 18 February 1997, the Supreme Court declared that the Appeal Court's decision was invalid and sent the case back to that court, which upheld its earlier decision on 2 July 1997. Indeed, it even increased the ambiguity of its former ruling by ascribing the Jowro all three aspects of ownership under French law: *usus*, *fructus* and *abusus*. *Usus* is the right to use, *fructus* is the right to enjoy the fruits of (harvest, rental income, etc.) and *abusus* is the right to get rid of the property by giving it away or selling it. This judgment actually gave the Jowro more extensive rights than any reasonable interpretation of customary rights might ascribe to him. It is also self-contradicting in another way, because according to Malian law, only the state has the *abusus* rights to land without deeds. To top it all off, the Appeal Court granted the farmers usage rights to the land they have been cultivating for several decades. This means that the farmers are ascribed the rights of *usus* and *fructus*. In practice, this means that the Jowro and the Rimaybé farmers were granted basically identical rights (*usus* and *fructus*), which both parties interpreted as a victory. However we can probably conclude that the Rimaybé have more to celebrate because the court granted them rights they would otherwise have had little chance of establishing under the customary system.

It seems that the legal wrangling back and forth and the court's ambiguous rulings are the result of both parties having paid bribes to the judges and their entourage. Bringing a conflict before a court of law is often a final desperate attempt on the part of one of the parties. Prior to this, the parties have usually already spent vast sums of money on trying to influence the administration.

This case study reviewing the political and economic context of a herder-farmer conflict in Mali shows that the drought in the 1980s was one of several factors that contributed to the loss of *burgu* pastures and marginalisation of pastoralists – and thus indirectly to more conflicts. The drought contributed temporarily to the shrinking of available *burgu* pastures for pastoralists. With less pastoral space available, herders and livestock will more easily trespass and damage agricultural crops, and conflicts might emerge. However, since the end of the 1980s, there has been more rain and the water levels in the Niger River have increased. Yet the number of conflicts in the delta has continued to be high due to a continued political and economic marginalisation of pastoral space and pastoralists. So while theoretically general resource scarcity might lead to more conflicts, the state's policy, which led to marginalisation of pastoralists – and in turn to increased scarcity of pastoral land – plays a far larger part in explaining the increase in the number of conflicts in the inland delta region of Mali.

### *The Touareg rebellion in Mali*

The Touareg rebellion in Mali took place between 1990 and 1996 and resulted in several thousand deaths and a quarter of a million refugees fleeing to neighbouring countries. This is a conflict that advocates of the environmental security school explain through desertification and an ensuing scarcity of natural resources. For example, Kahl (2006: 234) claims that in northern Mali, the combination of “population pressures, poor land use practices, and a fragile ecology ... made soil erosion, desertification, and freshwater scarcity serious problems.” He also claims that what he calls “demographic and environmental stress” were important causes of the Touareg rebellion, without presenting any documentation to back up these claims.

It is, however, difficult to demonstrate any “desertification” in northern Mali. Since rainfall has increased over the last 20 years, the forests have grown back and there has therefore been a reversed desertification process or “greening” in this area as in the Sahel in general (Hiernaux *et al.* 2009, Mougouin *et al.*, 2009).

A brief look at the political history of this part of the Sahel allows us to assess the variables that have played a role in the conflict dynamics. After Mali’s independence in 1960, the new government initiated a policy to modernise agriculture. This policy was associated with the nomadic lifestyle being regarded as old-fashioned and unproductive. The enormous grasslands in northern Mali were referred to as the “useless” part of Mali (Benjaminsen and Berge, 2004).

The Touareg in northern Mali regarded this modernisation policy as a form of neocolonialism – only this time by the authorities in southern Mali, instead of Europe. The policy led to marginalisation of nomads such as the Touareg. This was the main cause of the first Touareg uprising against the Malian state in 1963 (Ag Baye, 1993; Lecocq, 2004), which took place during a wet period in the Sahel. The uprising was suppressed by the Malian army using fighter planes and public executions.

After the coup d’état in 1968, the new government continued the agricultural policies of the previous government. Nomadic groups in northern Mali had little influence on national or local policy, and in practice, the region was governed by a military governor throughout the whole period until the rebellion started in 1990. Many Touareg experienced this as a form of military occupation (Poulton and Ag Youssouf, 1998).

The drought in the 1970s and 1980s also played a role in the uprising, but not in the way the argument about the correlation between climate and conflict assumes. Firstly, the droughts led many Touareg to move to Algeria and Libya. Many of them became politically radicalised by an ideology, which is a melange of Islam and socialism. Many of the Touareg that went to Libya also ended up as professional soldiers in Gaddafi’s army and gained practical experience in warfare in Palestine, Lebanon

and Chad. It was these soldiers that started planning a new uprising in Mali in the 1970s (Lecocq, 2004).

Secondly, the droughts led to Mali receiving large amounts of emergency aid. Much of this relief aid intended for northern Mali was allegedly embezzled by government officials. The rumours of corruption further stoked the anger of many Touareg at the Malian authorities (Klute 1995).

Now there is also increasing competition between the Touareg and the settled Songhay over land along the Niger River in northern Mali. The Touareg, who are primarily pastoralists, are dependent on access to the burgu pastures along the river as an important resource in the dry season, while the Songhay want to cultivate as much land as they can to grow rice. The situation is parallel to the one described in the delta farther south. The ensuing competition for land is a constant source of minor conflicts, some of which are violent. However, these types of conflicts had nothing to do with the uprising, which was started by people with roots in Kidal deep in the Sahara a long way from the river. In fact, the uprising came as much of a surprise to the Touareg farther south along the river as it did to everyone else (Poulton and Ag Youssouf, 1998).

Thus the main cause of the Touareg rebellion that started in 1990 was a modernisation policy that led to the marginalisation of nomads, combined with anger at what was perceived as a predatory state. The first Touareg uprising took place in 1963 (in an unusually wet period) against what was seen as a new form of colonisation – this time not from Europe but from the south. The uprising was severely suppressed by the Malian army and increased the Touaregs’ bitterness and animosity towards the state. The droughts of the 1970s and 1980s led many young Touareg to move to Algeria and Libya where they became further radicalised and many also gained practical training and experience in warfare in the Libyan army. It was these professional soldiers that started the rebellion in 1990.

« The droughts of the 1970s and 1980s led many young Touareg to move to Algeria and Libya where they became further radicalised.

## Conclusions and recommendations

In this chapter, I have presented a critical review of a dominating argument about the climate-conflict link in the Sahel that consists of two elements:

1. Global climate change leads to drought and desertification, which in turn lead to resource scarcity.

The claim that rainfall in the Sahel is decreasing is, however, problematic, because rainfall has increased again since the drought in the 1980s. Instead of desertification, the Sahel has become greener over the last 20–25 years. There is also considerable uncertainty about current and future climate trends in the Sahel and what consequences global climate change will have in the region.

2. This resource scarcity then leads to migration of ethnic groups and new conflicts, or it triggers existing, latent conflicts.

As mentioned in the first case study from Mali, the drought in the 1980s was one of several factors that caused an increase in the conflict level. In both cases, however, the root causes of the conflicts are political and historical. In addition, it is impossible to link resource scarcity in the Sahel in the 1980s to global climate change. However, a correlation of this nature cannot be dismissed categorically as theoretically impossible. Similarly, the link between resource scarcity and increased conflict levels cannot be dismissed, even if empirical results from international research question the validity of this correlation. Quantitative studies undermine the validity of a general link between climate and conflict, while case studies in central parts of the Sahel – like the two I have presented here – indicate that the conflicts have other causes.

The main cause of the two conflicts in Mali is therefore not related to climate change; it has much more to do with the state's policies and legislation, which result in the marginalisation of pastoralists. In the dry parts of Africa where pastoralism and farming overlap as the main forms of land use, there are continuous conflicts of varying scale. These conflicts are caused by politics, not climate change.

But if climate change in the long term leads to drier conditions in the Sahel, this will inevitably also lead to scarcity of resources in some areas. Decreased water levels in the Niger river will lead to continued loss of burgu pastures. In addition, drier conditions in the wet season pastures might lead to further increased dependency on the burgu areas. This might again increase conflict levels depending on the policies of the state.

Pastoralists are probably the group best adapted to climate variability. But at the same time, pastoralists are suffering from state policies favouring settled agriculture in many countries in the Sahel. Even though pastoralists are losing access to land, livestock keeping remains one of the economically most important activities throughout the Sahel and the large export of live animals to neighbouring countries, especially on the West African coast, continues.

A key policy recommendation would therefore be for states and international development agencies to support pastoralists' access and rights to land and natural resources and to assist them in maintaining their flexibility and mobility. Research could help in suggesting how this recommendation could be carried out in practice. Research could also monitor the land tenure situation and conflict level in key hotspot areas in the Sahel. And states could be assisted in better adjudicating conflicts.

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NOTES //////////////////////////////////////

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