



DECEMBER 2017

Climate change, inequality and conflict

Approaches to strengthen Mali's Climate Change Adaptation

In developing effective climate change adaptation measures, two important, yet often overlooked, factors need to be incorporated into the framework: structural inequality and conflict-sensitive approach. Especially in the case of Mali, adaptation and development policies have often not been inclusive. Additionally, there is a growing need to assess the potential negative implications of climate change adaptation measures on conflict onset. Despite several climate adaptation projects being implemented on the local level, the interaction between these and the ongoing clashes among different producer groups needs further assessment as violent clashes continue to erupt.

Mali is particularly vulnerable to the impacts of climate change. In order to reduce this vulnerability, minimize violent clashes among different land users, and increase the adaptive capacity of different groups, the Malian government should consider promoting ethnic heterogeneity, endorsing a pastoral lifestyle, reinforcing a positive synergy between different groups, creating a unified framework for resource management, and promoting good governance.

Identifying the gaps within the climate change adaptation framework

Today, it is generally accepted that climate change is a security threat; yet, there has not been a consensus on the relationship between climate change, inequality and violent conflict. This has been one of the challenges of developing appropriate climate change adaptation and the building of resilience policies. One of the recurring themes within the climate change-conflict discourse is the need to avoid one-size-fit all approaches, and to “be sensitive

to contextual factors unique to socio-ecological system”.¹

In the case of Mali, there are two, often overlooked, factors that can strengthen the existing climate adaptation framework and minimize the likelihood of violent conflicts: the concept of inequality and systematic local level analysis. First, discussions on climate change have originally focused

1 Homer-Dixon, T.F. (1994). “Environmental Scarcities and Violent Conflict: Evidence from Cases.” *International Security*, 19(1):5-40, p. 20.

on the physical implications of this phenomenon, dismissing its relationship with social and economic structures. Progress has been made by including poverty-related implications into the dialogues, but this has been done at the expense of addressing the multiple dimensions of inequality that encompass gender, age, ethnicity, race, religion and culture.

Secondly, there is a need to adopt a conflict-sensitive approach in developing and implementing adaptation policies. One of the elements of this process is to expand the scope of focus into the subnational level to assess contextual dynamics, and to include the narratives of the localities about climate change and conflict.² Climate change is expected to have wider implications for other forms of political instability, such as communal conflicts, which are fought between communally-identified groups along ethnic, linguistic and/or religious lines. The concept of ethnicity and livelihood are closely linked to one another in Africa, where the centre of many communal conflicts is land. Since agricultural and pastoral communities often belong to a particular ethnic group (e.g. Fula herders and Bambara farmers), climate-related conflicts are often observed among these communities.³

There are already a number of climate adaptation projects being implemented at the local level in Mali, yet these need to be deployed on a larger scale. Moreover, violent clashes between different producer groups continue to exist. As such, there is a need to assess the degree of impact these projects have on the occurrence and intensity of these conflicts.

2 Bob, U. and Bronkhorst, S. (eds.). (2014). *Climate Change and Conflict: Conflict-sensitive climate change adaptation Africa*. BWV: Berlin. Pp. 41.

3 Von Uexkull, N. (2014). "Climate variability, vulnerability and armed conflict in sub-Saharan Africa." In Urmilla, Bob and Salome Bronkhorst (eds.) *Conflict-sensitive adaptation to climate change in Africa*. Berliner Wissenschafts-Verlag (BWV): Berlin, Germany. pp. 161-176.

Climate change in Mali

As a landlocked country (area: 1,240,278 square kilometres), Mali encompasses four bioclimatic zones: Saharan, Sahelian, Sudanian and Guinean.⁴ 80 percent of the labour force is occupied with agricultural activities, which makes up approximately 50 percent of the country's GDP. The agricultural sector is dominated by small-scale traditional rainfed farming and mainly consists of cotton, millet, rice, corn, vegetables, peanuts; as well as cattle, sheep and goats.⁵ Despite its heavy dependence on agriculture, arable land only constitutes at most fourteen percent of the total land, making sustainable land management a key concern.⁶

Mali is particularly vulnerable to climate change due to low economic development and its dependence on the primary sector. Its low ranking on the Human Development Index, 175 out of 188, further indicates Mali's limited ability to respond to shocks and stresses of climate change.⁷ Long-lasting droughts from the late 1960s to the late 1980s have had detrimental effects on society (Figure 1). Since the 1960s, the mean annual temperature in Mali has increased by 0.8°C, which is estimated as an average rate of 0.15°C per decade.⁸ The frequency

4 Coulibaly, A. (2017). *Country Pasture/Forage Resource Profiles: Mali*. Food and Agriculture Organization of the United Nations (FAO). <http://www.fao.org/ag/agp/agpc/doc/counprof/Mali/mali.htm>

5 Central Intelligence Agency (CIA) (2017). *The World Factbook*. <https://www.cia.gov/library/publications/the-world-factbook/geos/ml.html>

6 Climate Change Knowledge Portal. Country Dashboard: Mali. The World Bank Group. http://sdwebx.worldbank.org/climateportalb/home.cfm?page=country_profile&CCCode=MLI&ThisTab=Overview

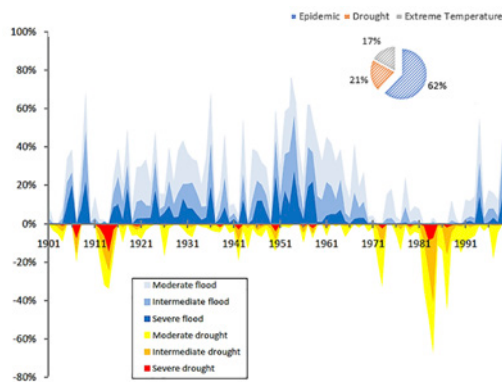
7 UNDP: Human Development Reports, 2016 HDR Report: http://hdr.undp.org/sites/default/files/HDR2016_EN_Overview_Web.pdf

8 Earth and Environmental Science (E&ES), Department. "Climate Change Profile: Mali." Leuven University, and Netherlands Commission for Environmental Assessment: Dutch Sustainability Unit. https://ees.kuleuven.be/klimos/toolkit/documents/690_CC_mali.pdf

of hot nights between 1960 and 2003 has significantly increased; while the frequency of cold days during summer season has substantially decreased.⁹ Rainfall on the other has become less predictable and has overall decreased by 30 percent since 1968 (Figure 2), destroying more than a third of livestock and leading to widespread food shortages.¹⁰ The increasing evaporation caused by higher temperatures has also further reduced the availability of water.

the pastoral identity and lifestyle.¹¹ Changes in migratory routes, either due to changes in the natural environment or farming-promoting development projects, not only pose threats to livelihoods, but “affect other forms of well-being.”¹²

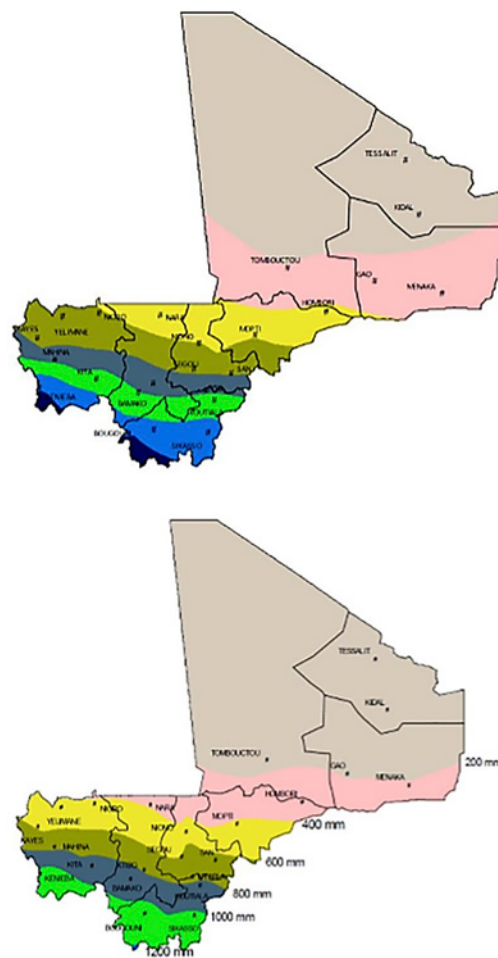
Figure 1 % Basin Area Impacted by Extremes and Natural Hazard Vulnerability



Source: The World Bank Group (2011)

Additionally, climate change in the form of drought, irregular rainfall patterns and unreliable climatic conditions has disrupted social relations among different communities. The decrease in the availability of water and land has forced pastoralists to change their migration routes and move towards near-permanent water sources and into farming lands. Some of these routes were established during the colonial era, while others are hundreds of years old. As such, these routes are more than just passages; they are part of

Figure 2 Changes in Average Annual Rainfall 1951-1970 (First) and 1971-2000 (Second)



Source: Diallo, M.M.A. (2011) in E&ES (2015)

9 Ministry for Environment and Sanitation (2008). “Elements of National Policy for Adaptation to Climate Change: Final Report.” Republic of Mali. http://www.adaptation-undp.org/sites/default/files/downloads/mali_national_policy_2008.pdf

10 Holthuijzen, W.A. (2011). “Dry, Hot, and Brutal: Climate Change and Desertification in the Sahel of Mali.” *Journal of Sustainable Development in Africa*, 13(7):245-268.

11 Bronkhorst, S. (2014). “Hurdles for pastoralism as adaptation to climate change in Southern Kordofan, Sudan.” In *Conflict-sensitive adaptation to climate change in Africa*. Berlin: BWV.

12 *Ibid.*

Mali's structural inequalities

Although Mali is highly vulnerable to the shocks and stresses of climate change, such vulnerabilities are not distributed equally across different groups. The minority pastoralist groups (such as the Tuareg, Fula and other Arab-Berber groups) have been more vulnerable to the impacts of climate change than the majority agricultural ethnic populations.

First implemented by the French, both the colonial and post-colonial rulings in Mali privileged agricultural groups' access to land. They have attempted to "sedentarize" the pastoral groups through various reforms because their livelihoods were portrayed as obstacles to progression, urbanization and modernization; and as incompatible with the ideals of a strong and developed nation.¹³ Despite the historical evidence that mobile livestock systems in the Sahel region have shown "high adaptive capacity and ecological economic efficiency", land tenure reforms have in fact emphasized agricultural expansion.¹⁴ This shift from mobility to "*sedentism*" has led to long-lasting marginalization of many pastoralist communities.¹⁵

Moreover, the removal of customary mechanisms for conflict management, and the introduction of a new political system, property rights laws and land tenures have increased farmer-pastoral incompatibility and further increased the resentment each group has felt for one another.¹⁶ Climate change has disrupted the physical availability of natural resources, while these socially and politically

constructed boundaries have determined who has access to what, when, and how.¹⁷

The preference for agricultural development has further created a significant discrepancy in the balance of power, which still plays an important role in decreasing pastoral people's access to land for production. The rapid incorporation of farmers into the development of larger political system resulted in decreasing control of land and cattle among the pastoral people. This, combined with rapid growth in the agricultural, commercial and industrial sectors, has generated a larger volume of competition and conflict over basic natural resources. As a result, an increasing number of pastoralists perceive themselves as victims and "see taking up modern weapons as a way to challenge existing hierarchies, and to contest the privileges of urban elites and traditional local aristocracies."¹⁸

Inequality as the centre of climate change adaptation

The significance of structural inequality for climate change adaptation measures lies in the fact that climate change acts as a 'threat-multiplier,' directly exacerbating existing political, economic and social inequalities among the people.¹⁹ These inequalities in turn further increase the vulnerability and exposure of certain groups to climate hazards, while reducing their ability to cope with and recover from the effects of climate change. If left unaddressed, climate-related shocks and stresses can undermine social systems by perpetuating a vicious cycle between inequalities and climate change (Figure 3).

13 Holthuijzen, *Dry, Hot, and Brutal*, p. 252.

14 Watts, R. (2012). "Case Study: Managing Climate Change and Conflict in Mali." *Climate Change in Difficult Environments Learning Cycle of the Learning Hub* (pp. 1-4). <https://www.ids.ac.uk/files/dmfile/LHcasestudy13-Mali.pdf>

15 Brooks, N. (2006). "Climate change, drought and pastoralism in the Sahel." Discussion note for the World Initiative on Sustainable Pastoralism. https://cmsdata.iucn.org/downloads/e_conference_discussion_note_for_the_world_initiative_on_sustainable_pastoralism_pdf

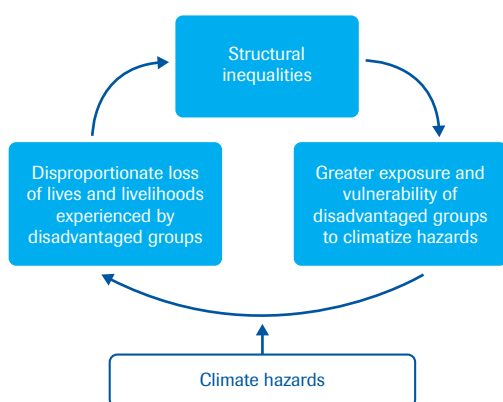
16 Brottem, *Environmental Change*, p.4.

17 Homer-Dixon, *Environmental Scarcities*.

18 International Crisis Group (2016). "Central Mali: An Uprising in the Making?" *Africa Report No.238, para.2*. <https://www.crisisgroup.org/africa/west-africa/mali/central-mali-uprising-making>

19 Huntjes, P. and Nachbar, K. (2015). "Climate Change as a Threat Multiplier for Human Disaster and Conflict." *The Hague Institute for Global Justice: Working Paper 9:1-24*.

Figure 3 The vicious cycle between inequalities and climate hazards



Source: UN/DESA.

The Malian government has introduced several adaptation measures to minimize the effects of climate change hazards. The majority of these have focused on strengthening the agricultural sector through adopting crops with shorter growing seasons and agroforestry systems, and improving access to decadal and seasonal forecasts, as well as water management techniques. While these measures are important steps in the right direction, they should be treated as a small piece of a larger puzzle. These measures primarily focus on strengthening the agricultural sector; however, the structural inequalities that worsen individuals' vulnerabilities still need attention.

In 2001, the Malian government passed the Pastoral Charter, a legislation regulating access to pastoral resources.²⁰ The Charter intended to give the authority to local communities for the management of natural resources; however, it failed to fulfil its mandate due to several fundamental weaknesses. First, the Charter does not provide an avenue for the voice of the pastoral people to be heard during the formulation of programmes and legislative text. It neglects the needs of the pastoral sector, especially in the north, and allows the *bourgoutieres*, which are important

grazing lands, to be converted into rice fields.²¹ Secondly, while the Charter was only intended to provide guidelines, “it has become a detailed code, allowing very little flexibility for adjustment to local circumstances.”²² It is further criticized for having provisions that are more appropriate for sedentarized farmers, paying “little attention ... to the mobility or the instability and uncertainty of the state of natural resources in dry pastoral areas.”²³ In order for initiatives such as the Pastoral Charter to be successful they must stem from the needs and ideas of the local communities.

Moving forward

Socially and politically created boundaries result in marginalization, lack of access to resources, and lack of assets and economic opportunities, which then determine groups' capacity to respond to climate related shocks and stresses.

Addressing the root causes of inequalities in Mali to enable proper adaptation and the building of resilience to the impacts of climate change offers a unique opportunity to tackle institutional deficits that perpetuate vulnerabilities. It necessitates a continuum of policies and practices, and requires an iterative and flexible decision-making process, as the traditional approach to development does not fully reflect present-day challenges. In light of this, the following policy recommendations are aimed at creating a more inclusive and integrated climate change adaptation framework in Mali:

First, promote ethnic heterogeneity and ensure pastoral representation within the government. Since the 2012 crisis, the government of Mali, together with other actors, have been working towards improving the institutional framework

20 Cotula, L. (eds.) (2007). *Changes in “customary” land tenure systems in Africa*. IIED Russell Press and FAO. <http://pubs.iied.org/pdfs/12537IIED.pdf>

21 IIED. (2004). *Making Land Rights More Secure*. International workshop for researchers and policy makers, Ouagadougou (March 19-21, 2002). <http://pubs.iied.org/pdfs/9446IIED.pdf>

22 *Ibid.*, p.71.

23 Cotula, *Changes*, p.91.

for decentralization and encouraging the involvement of many faces of its society, including women and youth. However, the kind of role pastoralists play in the decentralization process remains unclear. Over the years, the Malian government has made several promises offering cultural recognition, greater political autonomy and greater development; yet, there has been very little progress in either dimension. There is indeed a need for stronger commitment on the part of the government to ensure the implementation of these efforts. Even if such measures would have limited outcomes, the symbolic impact of these inequality reducing policies could create substantial results.

Second, promote pastoralism as a form of proactive climate change adaptation. It has been recognized by both the Overseas Development Institute (ODI) and the Humanitarian Policy Group that “pastoralism functions best within the prevalent context of wide rainfall variability and unpredictability. With the right policies, investment and support, pastoralism presents a logical adaptation route in areas of increased climatic variability, and has an important role to play where other livelihoods are likely to fail”.²⁴ Investments in the area of establishing transit permits, cattle corridors and (de)stocking programs, as well as diversifying livestock feeds and introducing new breeds could be seen as important steps in this direction. Additionally, ensuring safe and free pastoral mobility across borders is important. This requires cooperation and collaboration with the neighbouring countries, as well as proper legal frameworks to assist this movement.

Third, strengthen the synergy between agricultural groups and pastoral communities through mixed crop-livestock farming systems that allow grazing for fodder on cultivated land. Such an approach would not only provide pastoral groups with adequate and secure access to basic

production input, but would also improve social capital among the two land users. In Mali, in-group social capital helps resolve conflicts, while out-group social capital is trumped by ethnicity. Building interpersonal trust through a mixed production system could lay the foundation for civilian agency, which could lead to actions that mitigate and restrain violence in the context of climate induced tensions.

Fourth, establish a unified framework for the management of natural resources to prevent disputes over access to land. Mali has dozens of decrees, codes and laws that govern the administration of natural resources. Lives are still lost in disputes over access to the *bourgoutieres*. These disputes are in part aggravated by this lack of legal clarity regarding land rights.²⁵ The existence of conflicting decrees, codes and laws naturally causes confusion, but the lack of education of the local people makes it additionally difficult for different land users to understand these legal texts. A unified legal framework would allow for better implementation and potentially decrease disputes over land.

Fifth, promote effective rule of law and good governance at all levels, while enforcing transparent, effective and accountable institutions. Mali is among the most corrupt countries in the world. Corruption significantly undermines, among other things, its economic development, land administration, civil society, and efforts to mitigate and adapt to the impacts of climate change. Although there are some legal frameworks to tackle this problem; there is significant political interference. As such, the progress to reduce corruption has been slow. Eliminating corruption may not be an easy task; yet, it is a crucial element of an effective climate change adaptation framework. Through good governance, and transparent and accountable institutions, Mali can reduce people’s vulnerabilities within political, social and economic spheres, and hinder the capacity of climate change to act as a ‘threat-multiplier.’

24 Humanitarian Policy Group (2009). “Pastoralism and climate change: Enabling adaptive capacity.” Overseas Development Institute (ODI) *Synthesis Paper*, pp. 1. <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/4317.pdf>

25 International Crisis Group, *Central Mali*.


About the Planetary Security Initiative

The Planetary Security Initiative aims to help increase awareness, to deepen knowledge, and to develop and promote policies and good practice guidance to help governments, the private sector and international institutions better secure peace and cooperation in times of climate change and global environmental challenges. The Initiative was launched by the Netherlands Ministry of Foreign Affairs in 2015 and is currently operated by a consortium of leading think tanks headed by the Clingendael Institute.

Follow us on social media

 @PlanSecu

 The Planetary Security Initiative

 The Planetary Security Initiative

E-mail: psi@clingendael.org

Website: www.planetarysecurityinitiative.org

About the author

Basak Kalkavan is Education and Research Assistant at the Institute of Security and Global Affairs at Leiden University. She is also Research Assistant at the Armed Conflict Location & Event Data Project (ACLED). Her research interests focus on environmental security and sustainable peace. Previously, she conducted research on the link between climate change and communal conflict in the West Africa Sahel.