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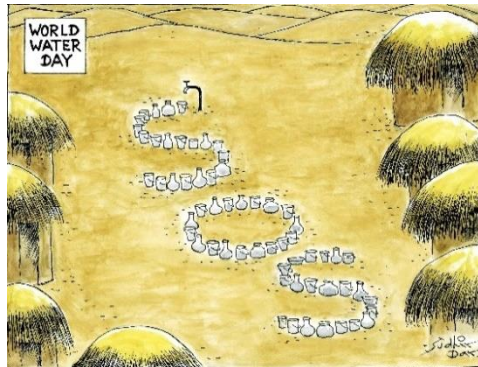
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Is water a blessing or a curse?

How to address water conflicts in West Africa

Dirk Kohnert ¹

Water scarcity in Africa ²



Source: © [Sudhir Dar](#)

Abstract: For many Africans, water is not only the source of life but also a means of purification and a centre of regeneration. Water rituals and cults, such as 'Mami Wata', lead their followers to liberation of body and spirit. But customary rites can also cause harm. For example, the ancestral use of irrigation reduces contemporary female labour participation and female property rights. It is crucial to consider gender in resource management in the context of climate change, environmental degradation and population growth, which will exacerbate conflicts over scarce resources such as arable land, water, fishing and hunting. Poor governance leads to the alienation and exploitation of the majority and growing inequality, especially when water is scarce and people's livelihoods are threatened. Sub-Saharan Africa is the continent most affected by climate change, population growth and food insecurity. Yet African states, where water ecosystems are strategic resources, are more inclined to regional conflict than cooperation. In the past, climate-related shocks have fuelled violent conflict in West Africa. Land pressure and water scarcity are causing increasingly acute crises. Traditional institutions of water and land management are often destabilised by modern irrigation techniques and massive inflows of foreign capital. Modernisation is driven by a Western-centred utilitarianism that cannot be universalised. The intensification of conflicts over water has revealed a general crisis that is likely to worsen, given the dynamics at work. Environmental degradation is one of the undesirable by-products of agricultural productivity growth, but customary institutions cannot provide adequate regulation to mitigate its effects. But even in West African regions where water is plentiful, the resource curse links the abundance of natural resources to higher levels of conflict. The commercialisation of water, including land and water grabbing, can even lead to interstate conflict through the effects of greed or grievances. Ultimately, however, conflicts are often not so much about access to scarce resources such as water, food or land, but rather about changing the political institutions through which resources are distributed. Water scarcity puts pressure on people, resulting in migration, displacement, food insecurity and impoverishment, which can lead to further conflict.

Keywords: [Water rites](#), [customary institutions](#), [water scarcity](#), [climate change](#), [modernization](#), [resource curse](#), [gender inequality](#), [land grabbing](#), [water grabbing](#), [governance](#), [migration](#), [sustainable development](#), [post-colonialism](#), [informal sector](#), [international trade](#), [ODA](#), [Sub-Saharan Africa](#), [West Africa](#), [Mali](#), [Nigeria](#), [Senegal](#), [African Studies](#)

JEL-Code: DO2, D18, D23, D31, D43, D36, D47, E26, F13, F 21, F22, F35, F51, F52, F54, F64, I31, J16, N17, N37, N47, N57, N97, O13, Q15, Q25, Q54, Q55, Q56, Z13

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² 'More than two billion people worldwide lack access to safe and readily available water at home' - Cartoon for the month of 'March' of the 2018 WB Cartoon Calendar on water and sanitation by Cartoonist [Sudhir Dar](#) (WB, 2017).

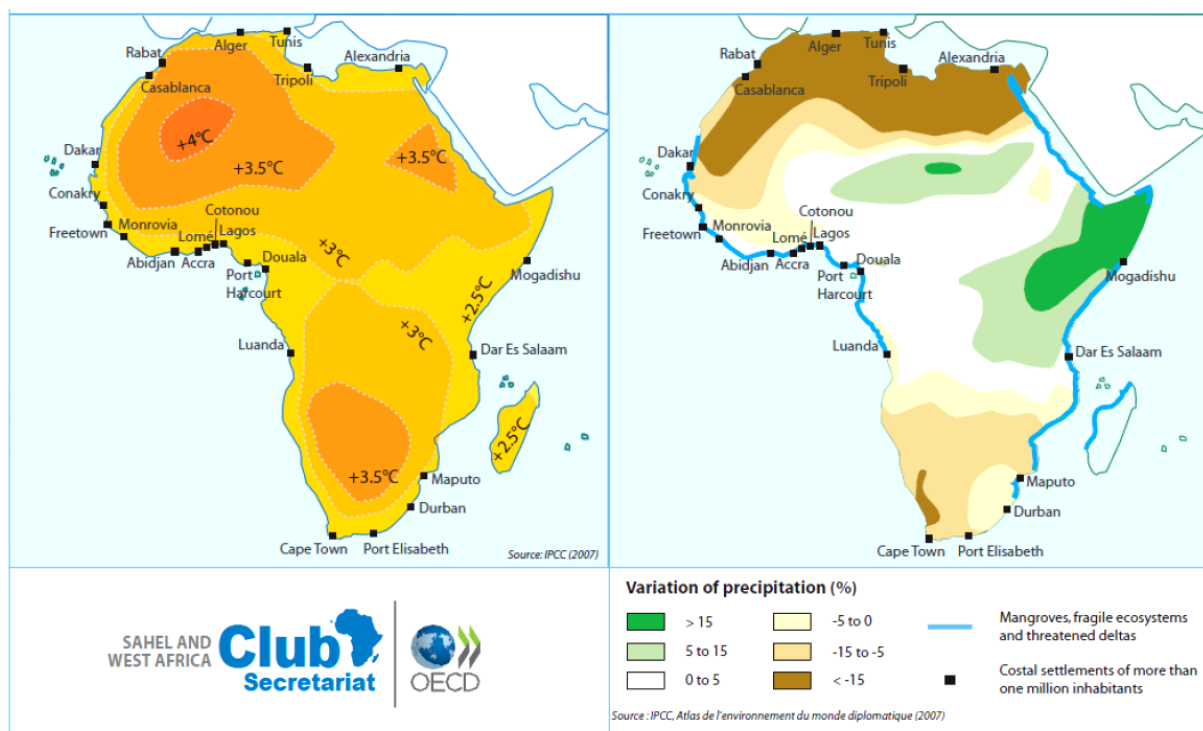
1. Introduction: Water conflicts in Sub-Sahara Africa

Water is essential for life all over the world. However, in [Sub-Saharan Africa](#) in particular, access to water is limited for a variety of cultural and socio-economic reasons, even in water-rich regions such as [West Africa](#). According to customary African culture, water has three major symbolic roles, as a source of life, as a means of purification and as a centre of regeneration. It also assumes an important therapeutic, religious and political function, like in the purification rites and during libations of *vodun* (Talkeu Tounouga, 2000). Thus, the water deity '*Mami Wata*' represents an important part of West African culture that reveals the power and potency of images and ideas to shape the lives of people, communities, and societies (Drewal et al., 2008). The political and religious dimension of water is also evident in the worship of the *Jengu* water spirits among the *Duala* of [Cameroon](#), of the *Déïma* or *Dahima*, one of the largest new religions in [Côte d'Ivoire](#), in the case of the 'water of *Moussa*' (West Africa), and in the case of *Mallah* or *Marie Lumière* (*Duala*, Cameroon) (Talkeu Tounouga, 2000).

Furthermore, West African ancestral rules on water reveal important [gender](#) roles and restricted women's rights, for example, reduced contemporary female labour force participation and female property rights in matters of land irrigation (Fredriksson & Gupta, 2020).

Inequality in [natural resource governance](#) becomes even more sensible considering emerging security issues related to [climate change](#), [environmental degradation](#), and [population growth](#) which will further aggravate conflicts over scarce resources such as arable land, water, fishing and hunting. Poor [governance](#) resulted in alienating and exploiting the majority, feeding inequalities and inequities, threatening the environmental basis of the livelihoods of the people, and thereby increasing the likelihood of violent conflicts (Alaga, 2011).

Graph 1: Climate change in Africa, forecast (2012)



Source: West Africa Gateway, Sahel and West Africa Club Secretariat, OECD: <http://www.westafricagateway.org/>

Source: Hellendorff, 2012

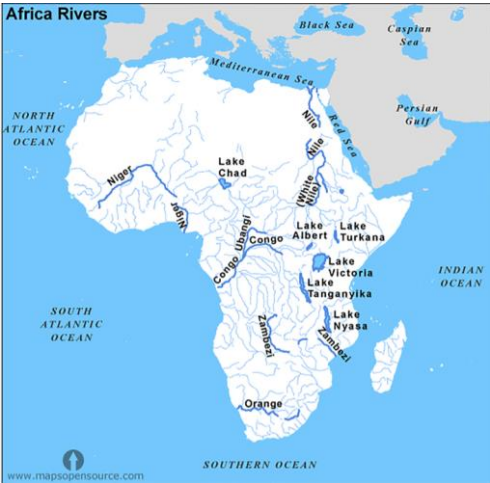
[Climate change](#) and its unpredictability may impact water security in [Sub-Saharan Africa](#), creating incalculable pressure on the people through migration, displacement, food insecurity and impoverishment that may lead to conflict (Akiyode, 2011).

Moreover, the climate crisis unravelled worldwide much faster than formerly perceived. It had a particularly profound impact on global freshwater resources. [Water scarcity](#) already impacted almost 2 billion people around the world (Aamer, 2023). In March 2023, the United Nations ([UN](#)) hosted a water conference, the first since 1977, on the Midterm Comprehensive Review of the implementation of the UN Decade for Action on Water for Sustainable Development 2018-2028. The 1992 [UNECE Water Convention](#) required all parties to ‘prevent, control, and reduce transboundary impact, use transboundary waters reasonably and equitably and ensure their sustainable management’. Since March 2016, following an amendment, all UN Member States could accede to it, and [Chad](#) and [Senegal](#) became the first African members of the Convention in 2018 (Aamer, 2023).

In addition, on 21 May 1997, the [UN General Assembly](#) adopted the International Convention on the Use of Watercourses for Non-Navigational Purposes ([UNWC](#)). Although 131 countries voted in favour of the agreement (apart from [Burundi](#), [Turkey](#), and [China](#), which voted against it, and [India](#) which abstained from voting), the treaty had been ratified by just 36 states. The majority of countries, especially the key ones, remain outside. Up to now, eight African countries adhered to the UNWC: (1) [Burkina Faso](#), (2) [Chad](#), (3) [Guinea-Bissau](#), (4) [Côte d'Ivoire](#), (5) [Namibia](#), (6) [Nigeria](#), (7) [South Africa](#) and (8) [Tunisia](#). [Egypt](#) and [Ethiopia](#) refrained because of their controversy about the [Grand Ethiopian Renaissance Dam](#) (GERD) (Aamer, 2023; Siraw, 2023).

Thus, climate change’s role has been seen as a ‘threat multiplier’ (Sweijts, & Haan & Manen, 2022). [Global warming](#) may become dangerous like war, with considerable burdens on natural and social systems. Climate-related shocks have fuelled already violent conflict in the past in [West Africa](#), for example in the [Senegal River](#) region during the bloody [Mauritania–Senegal Border War](#) in 1989-1990 about grazing rights (Scheffran, 2008; Hellendorff, 2012). Even [environmental protection](#) can, in exceptional cases, result in violent action, as in the case of the conservation and shoot-to-kill policy as a way of tackling the [poaching](#) problem in SSA (Kranebitter, 2019).

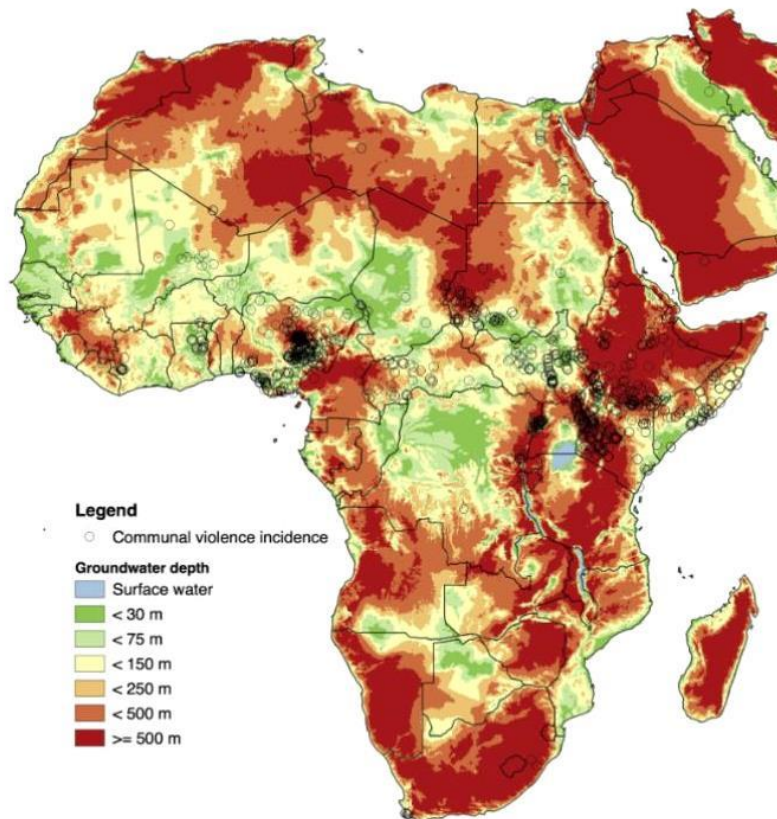
Graph 2: African river systems



Source: Peña-Ramos et al., 2022

Sub-Saharan Africa ([SSA](#)) has globally the least stable access to freshwater supplies (Turyasingura, et al, 2022). Lacking access to groundwater increases the likelihood of communal violence. Having both low rainfall and low access to groundwater means for SSA that the likelihood of communal conflict increases in comparison to areas where either water source is more abundant (Döring, 2020).

Graph 3: Incidences of communal conflict and depth to groundwater in Africa, concentrated in the Guinea Forest-Savanna, north of the equator



Source: Döring, 2020

The interaction between [customary](#) and modern institutions, including the interplay of the different regional actors and the translation of [global water policies](#) at the local level, is crucial, also for West African water basins (Labbé, 2007). Institutional crises around water in the socio-ecological system of the [Niger](#) and [Volta basins](#) occurred already soon after their foundation, for example in the crises and dysfunctions around the management of a dam lake in the [White Volta Basin](#) in [Burkina Faso](#). A case study of the Nariarlé basin near [Ouagadougou](#) revealed, for example, that the region, totally deforested and cleared, suffered from a demography that it cannot support. Water was no longer sufficient. Land pressure and the lack of water generated an increasingly acute crisis. Customary institutions in water and land management were still crucial agents, despite the substantial influence of new actors linked to the proximity of the capital which destabilized them (Labbé, 2007). Although civil society organizations ([CSOs](#)) tried to compensate for these power asymmetries by imposing the establishment of management committees, these were monopolized by the more powerful. Because of the diversity of actors and formal and informal institutions, the system was apparently ineffective in managing the crises, and may even have caused growing uncertainties. This was at least partially because the elaboration of political, legislative and institutional frameworks for integrated water resources management was still modelled along similar Western models of [technology transfer](#) and '[modernization](#)' and not sufficiently

adapted to local conditions. For example, it was based on false assumptions of the rule of law and democracy in African societies whose institutional context differs substantially. Furthermore, the new institutional framework for the management of water resources was not related to African land management (Labbé, 2007).

Recent case studies unveiled that the African poor were especially hard hit by the impact of [climate change](#) and overuse of water in agriculture production, whereas the upper-middle-income class witnessed only an insignificant impact. Furthermore, [CO2 emissions](#) affect water evidently in the upper-middle-income [SSA](#), while for lower-middle and low-income classes, an adverse effect had been identified. However, economic growth negatively influenced water resources in the lower-middle-income groups whereas, in the case of the low-income categories, a significant positive liaison was shown (Sun et al., 2021).

Graph 4: cartography of resource-related tensions and conflicts in West Africa



Aggravating conflicts over water revealed a crisis which, given the dynamics at work, was likely to accelerate. [Environmental degradation](#) was one of the unexpected outcomes of [agricultural productivity](#) growth. But [customary institutions](#) could not provide for adequate regulations to cope with the effects induced by these technical changes. Modern infrastructure, such as dams, and roads for better access to the market, constituted structural changes whose management and use escaped the traditional institutions (Labbé, 2007). The new water basins, now totally deforested and cleared, suffered often from [population pressure](#) that it could not support. Under these conditions, water management was no longer sufficient. Land pressure and the lack of water generated an increasingly acute crisis.

However, customary institutions in water and land management were still important, despite their lacking capacity to adapt in time and the substantial influence of new actors which destabilized them. Nevertheless, the resilience of traditional social structures in the face of exogenous shocks has made natural resource governance more ambiguous at the local level

(Labbé, 2007). The cleavage between these different institutions was likely to reinforce the exclusion of the most marginal groups and boost gender inequalities. Also, the privatization of water and land excluded certain actors from adequate access to water or cultivable land, which resulted in a deterioration of their means of subsistence and a reduction of their competence and capacities (Labbé, 2007). The commercialisation of water can be the source of conflicts of greed or resentment, not only between private owners but even between states, raising the question of whether water is a curse rather than a blessing. In any case, scarcer water resources are a conflict-contributing factor (Prenzel, 2016).

Thus, famines and droughts in [SSA](#) were worsened by [post-colonialism](#), due to the irresponsible agency of powerful states, international donors and corporations that, openly or hidden, promoted autocratic rule in SSA to the profit of the power elite and the detriment of the lower classes. The [World Bank](#) and the [IMF](#), for example, made [water privatization](#) a condition for the renewal of loans with African countries, and it were usually the smallest, poorest, and most debt-ridden countries that suffered from those conditions (Kitissou, 2004).

The environment-related conflicts pose also a threat at the international level as the violent conflicts in the West African [Sahel](#) demonstrated. In this respect three key factors are to be considered: first, the vulnerable populations, second the above-average number of [fragile states](#), and third the international community. For example, the [Boko Haram](#) and the [Tuareg rebellions in northern Mali](#) (2012), in [Niger and Mali \(1990-1995\)](#) had grave security implications going well beyond the national or regional framework. Other examples were the dispute over the use of a cattle trough in tribal clashes killing 30 people along the Mali - Burkina Faso border (2012), as well as military clashes between [Cameroon](#) and [Nigeria](#) over the retreat of [Lake Chad](#) in the 1980s and 1990s (Peña-Ramos, et al., 2022), which, according to [UNEP](#), was at least partly due to excessive water use, such as inefficient damming and irrigation methods. In general, environmental degradation typically interacts with conflicts as ‘aggravating factors’, ‘threat multipliers’ or ‘permissive causes’ (Hellendorf, 2012).

Although [West Africa](#) generally has an abundance of water due to its location on the [Gulf of Guinea](#) near the equator, sub-Saharan Africa ([SSA](#)) will be the most affected of all continents by climate change, population growth and food insecurity (Allan, et al, eds., 2012). This could result in a special form of ‘[resource curse](#)’ or the paradox of plenty. Land and water in this ‘frontier zone’ of global agriculture are said to be underutilized and therefore attract increasingly foreign investment, including transnational enterprises and superpowers like [China](#), who consider the region as an extended workbench to grow crops for the international market or its own population.

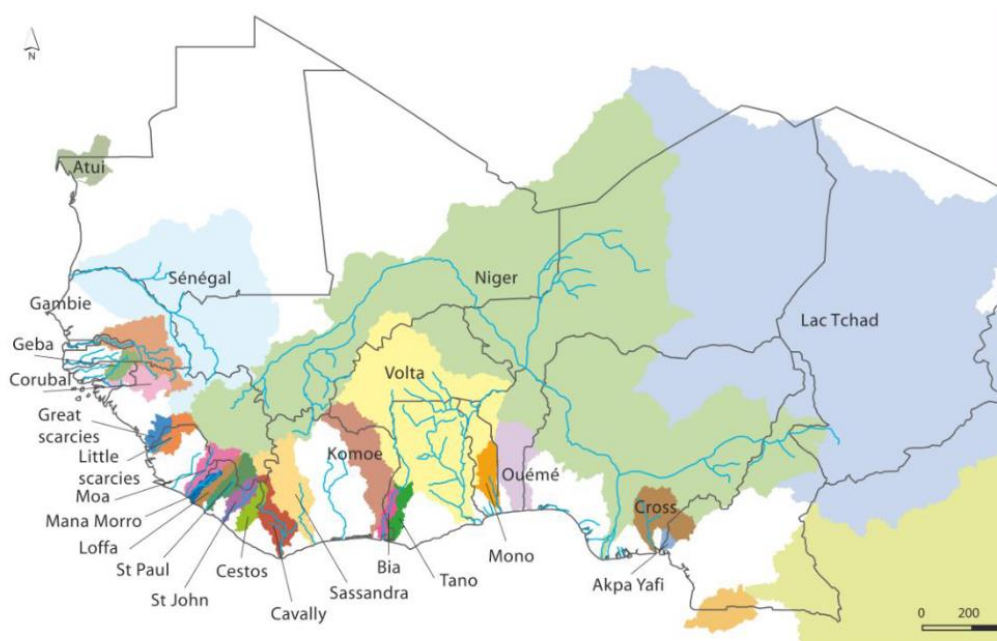
Yet, [land](#) and [water grabbing](#) is not a new phenomenon but has been an integral part of [colonialism](#) and [post-colonialism](#). Already the late American sociologist and Pan-Africanist civil rights activist [W. E. B. Du Bois](#) (1868–1963) reported on the agrarian capitalism of international trusts like [Firestone Tire and Rubber Company](#) that grabbed the most fertile land in [Liberia](#) in the 1930s. He revealed in no uncertain terms how the local people were driven from their ancestral lands and turned into thousands of low-paid workers to serve Western corporations. As recently as 2005, Firestone was accused of using forced and child labour (Hahn, 2012). A more subtle but potentially more disturbing rush for rural land took place in the past decades by city-based, African businessmen turning into part-time farmers, who negotiated with traditional chiefs and local governments how to modernize agriculture and to ‘liberate’ conventional smallholders without creating alternatives for employment (Hilhorst & Nelen, 2012). Therefore, a holistic analysis of [land](#) and [water grabbing](#) in SSA would be required.

Anyway, the Global Water Security and Sanitation Partnership ([GWSP](#)), created in 2017 by the [World Bank](#) (WB, 2017), meant to enhance the five priority themes to achieve the [SDGs](#) for water, i.e. sustainability, inclusion, institutions, financing and resilience, remained up to date pious wishes in the West African socio-economic context.

2. Water conflicts and culture in West Africa

Rainfall in [West Africa](#) is generally abundant but it is mainly exploited by rainfed agriculture. More than 90% of runoff water goes to the sea with little use in the production of goods and services. Although the West African hydraulic potential is appreciable, [climate change](#) raises serious concerns (Barbier, et al., 2009). Several large rivers cross the region, even in its semi-arid part. The [Niger River](#), for example, fed mainly by the [Fouta Djallon mountains](#), crosses a significant part of the [Sahel](#). Also, the [Senegal River](#), starting from the same mountains, rises far into the Sahel before branching out to the sea. The [Volta River](#) offers interesting potential in [Burkina Faso](#), [Ghana](#) and [Togo](#). [Lake Chad](#) is located in a semi-arid zone and constitutes a significant potential for [Chad](#), [Niger](#), Northern Nigeria and [Northern Cameroon](#). The large West African rivers have been relatively unregulated until now, i.e. their flows are abundant after the rainy season and almost dry during the low water period (Barbier, et al., 2009).

Graph 5: West African transboundary river basins



Source: CSAO/ OCDE, *Les bassins fluviaux transfrontaliers*. Paris : Atlas de l'intégration régionale en Afrique de l'Ouest, Séries espaces, 2006, p. 4.

Source: Hellendorf, 2013

However, the general water availability hides a very unequal distribution of resources within different countries, between cities and countryside, between sectors (industry, agriculture and domestic use) and between user groups (Hellendorf, 2013). The 16 [West African](#) countries share altogether 25 transboundary watercourses. Apart from [Cape Verde](#), every country in the region shares at least one watercourse with one of its neighbours. [Guinea](#), for example, extends over 14 cross-border water basins, the [Côte d'Ivoire](#) has eight, [Liberia](#) seven, and [Nigeria](#) five. Therefore, the countries of the region are highly interdependent in terms of water supply. Most of them have a dependency factor (i.e. the total share of supplies in water of a

country produced outside its borders) above 40 %. Countries like [Niger](#) and [Mauritania](#) have even dependency factors of around 90 %. Notably the [Sahel](#) countries are largely dependent on inter-zonal transfers of freshwater ensured by the main rivers of the region ([Senegal](#), [Niger](#), [Volta](#)) (Hellendorf, 2013).

From 1970 to 1990, decreased rainfall in southern West Africa affected the entire regional hydrological system and water-related sectors within the basins, namely, irrigation, domestic, livestock, and hydropower generation. These decreases in runoff involved all water consumption sectors, including existing hydropower plants. Several plants had experienced repeated power disruptions over the last three decades due to climate change and variability. Also, increasing land use and land cover changes around the major dams have impacted the hydrological system and hydropower generation. This increase in land use to feed a growing population had adverse side effects, namely sedimentation and siltation, which in turn were harmful to hydropower plants (Obahoundje & Diedhiou, 2022). In recent decades an increasing number of cases were reported where communities and even government authorities tended to blame upstream countries for incidents such as deficits in discharges or rivers, floods, water weeds, etc., which, however, in many cases, appeared to be rather linked to climate change and variability (Niasse, 2005).

Graph 6: Fraction of arable land that is irrigated, by West African country (2008-2009)

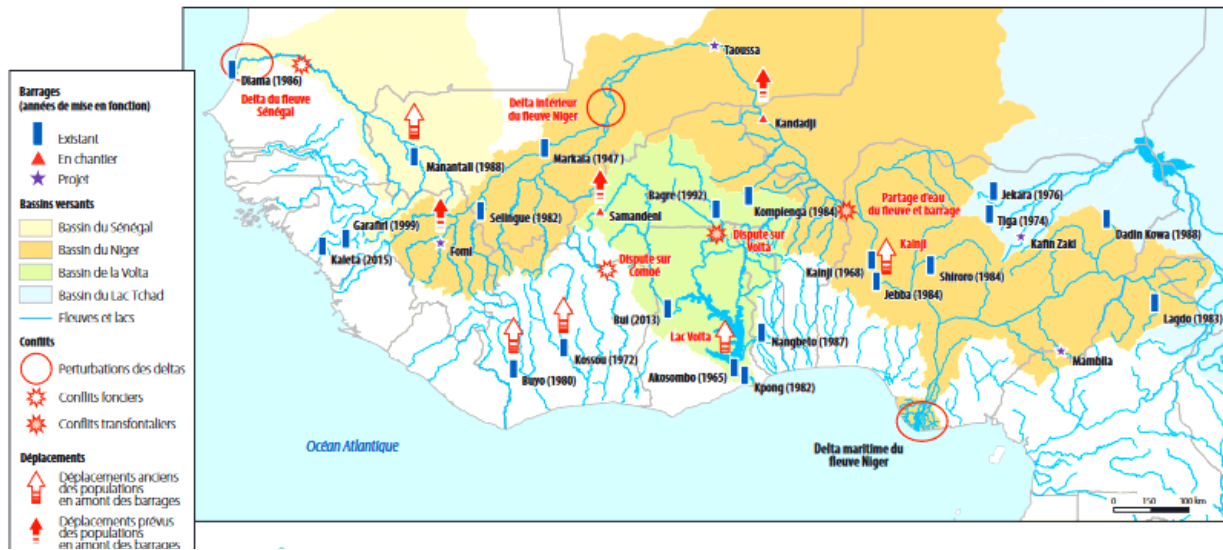
<i>Country</i>	<i>Arable land (1,000 ha)</i>	<i>Fraction of arable land that is irrigated</i>	<i>Irrigated land area (1,000 ha)</i>
Benin	2,380	0%	-
Burkina Faso	4,040	1%	40
Cap Verde	44	6%	3
Ivory Coast	3,100	1%	31
Gambia	285	1%	3
Ghana	3,950	1%	40
Guinea	975	6%	59
Guinea-Bissau	300	3%	15
Liberia	380	1%	4
Mali	4,634	5%	232
Mauritania	488	10%	49
Niger	14,483	1%	145
Nigeria	28,200	1%	282
Senegal	2,355	5%	118
Sierra Leone	490	5%	25
Togo	2,510	0%	-

Source: Gleik & Cohen et al. , 2008: 325

[West Africa](#) exhibits 25 cross-border [watersheds](#), out of the total of 60 in Africa. Among these, four stand out for their area and the number of countries in which they extend:

- (1) the [Niger River](#) basin covers an area of 2,113,200 km² and runs through eleven countries;
- (2) the endorheic basin of [Lake Chad](#), 2,388,700 km², extends over eight countries;
- (3) the [Senegal basin](#), 436,000 km², flows through four countries,
- (4) the [Volta basin](#), 412,800 km², crosses six (Hellendorf, 2013).

Graph 7: hydraulic dams, conflicts and risk of conflicts concerning water in West Africa



Source : Crad, Barbier et al., 2016

Although large dams, such as the [Akosombo dam](#) in [Ghana](#), which created the largest man-made lake in the world by surface area, help to cushion the impact of a series of dry years, there is a growing awareness of environmental and social problems caused by these big dams (Barbier, et al., 2009). In recent decades, more than 110 large dams were built in West Africa, [Kossou dam](#) on the [Bandama river](#) in [Côte d'Ivoire](#), the second largest dam in West Africa, and more are in the pipeline. But these works are discussed as controversial because they affect the terms of access to water and the resources that depend on it, most often transferring resources from one group of users and states to another, often without adequate compensation (Hellendorf, 2013). Thus thousands of people had to be displaced because of the dams.

Graph 7a: Number of people displaced for large dams in West Africa

Name of the dam	Country	Displaced persons	Date of displacement
Akosombo	Ghana	80,000	1963
Kossou	Cote d'Ivoire	75,000	1970
Kandji	Nigeria	44,000	1967–1968
Sélingué	Mali	15,000	1980
Nangbéto	Togo/Bénin	10,600	1987
Manantali	Mali	10,000	1986–1987
Garafiri	Guinée	2,140	1999

Source: de Wet 1999; Niasse and Ficatier, 2008

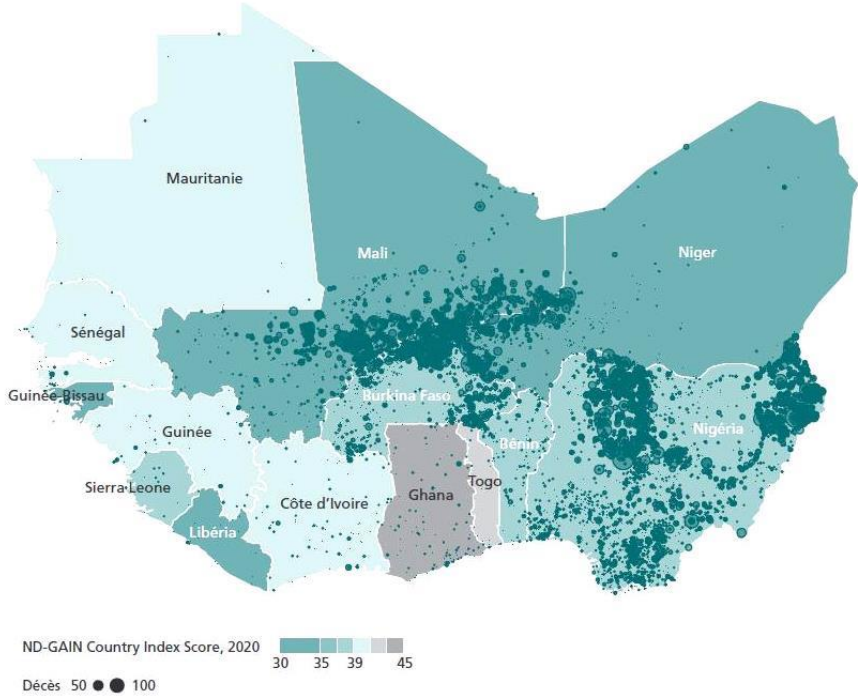
Source: Skinner, 2009

Most West African countries already face considerable development and security challenges from existing economic, population and environmental stresses. [Climate change](#) is not new to the region. West Africa in general, and the Sahel region in particular, are characterized by some of the most variable climates worldwide (Brown & Crawford, 2008). But at the same time, their populations were the least prepared to cope with climate change.

Climate variability was particularly pronounced in the twentieth century when unusually high rainfall from the 1930s to the 1950s had been followed by extended drought for the following three decades. Mean annual rainfall and runoff dropped by as much as 30 %, with devastating effects on local populations. An estimated 500,000 people died across the [Sahel](#). Migration greatly increased, for example about one million people left [Burkina Faso](#).

Future climate change will impact probably even more current water-related development challenges which will become more complex and urgent (Brown & Crawford, 2008). Conflicts between the autochthone and migrant population, induced by climate change and the subsequent scarcity of land, water, fishery and other vital resources are likely to increase, as indicated by a case study on fishing in [Côte d'Ivoire](#) (Adou, et al., 2021).

Graph 8: climate vulnerability and conflict-related incidences in West Africa, 2021 ³



Source: Tarif, 2023

The diversity of representations of water, depending on the contexts and actors, generates conflicts that are rarely taken into account in water governance models. In many cases, technical logic had come up against modes of local functioning permeated with magico-religious practices like witchcraft accusations (Baron & Bonnassieu, 2011). The perceptions of public authorities or development projects are not always shared by the local population. For example, the location of water points and their management may be linked to local stratifications and modes of organization. Related magical practices to the use of water, in particular prohibitions, are inseparable from the rules of access at the well. Local authorities often try to maintain their control over water resources in a context of competition with other groups. Migrants and ‘strangers’ as well as people with a lower social status might see their access to water restricted, with the justification that they have no land rights.

³ Note: The ‘ND -GA IN Country Index’ uses climate vulnerability and adaptation readiness indicators to develop a score of 1 (highest.vulnerable) to 100 (least vulnerable). Sources: World Bank (borders), University of Notre Dame, Global Adaptation Initiative, Armed Conflict Location and Event Data Project.

For example, in the western provinces of [Burkina Faso](#), village spaces, including wells and water points are organized according to a hierarchy based on the origin of the residents, and natives were distinguished from migrants and caste people. Regarding the domestic use of water, differentiations often exist between actors according to social position, sex, age and religious affiliation. Also, due to the strong social cohesion in village societies, excesses (e.g. diversion of funds, overcharging for repair work, non-payment of water by relatives) are rarely sanctioned. Conflicts related to a lack of transparency in financial management may lead to lasting blockages. Following the droughts of the 1970s, [transhumance](#) by [Fulani](#) herders from the Sahel to the coastal states, like [Benin](#), [Ivory Coast](#), [Ghana](#), [Togo](#) and particularly [Nigeria](#), resulted in increasingly fierce disputes between local peasants and herders around water points and cereal fields. Last, but not least, the completion of water use greatly increased by the introduction and extension of cash crops like [cotton](#) and [groundnuts](#) since colonial times as well as by increasing population pressure (Baron & Bonnassieu, 2011).

Paradoxically, of all the parties involved, local people had often been disappointed by the impact of dams on their livelihoods for the following main reasons: Firstly, because of inadequate compensation for the losses caused by the construction and operation of the dam. Secondly, the benefits generated by the dams were not easily accessible to the affected populations. Thirdly, the structures and rules for the management of the resources generated by the dams had often been contradictory, notably concerning the cleavages between modern national and customary law. The frustration caused by feelings of exclusion often led to social tensions and conflicts (Bazin & Skinner & Koundouno, 2011).

Therefore, pertinent questions have to be solved before embarking on large, costly and sometimes unprofitable dam investments. Also, it would be advisable to think about the relevance of various alternative technical and managerial options. Apart from the huge cost, and doubtful returns to investment, it could be that there are other ways to meet the demands for water, crops and energy. Requests of different user groups might be in conflict and the environmental costs excessive. Thus, it is often better to consider another type of development, based on improving the performance of existing agrarian systems and water productivity (Barbier, et al., 2009). The UN Economic Commission for Africa ([ECA](#)) in its '*African Water Vision 2025*' of 2000, supported also by [ECOWAS](#), dedicated an exclusive policy to climate change and water management. The latter was given a prominent place in its agricultural policy, devoting to it a platform for dialogue on major hydraulic infrastructures, including a strategic orientation for the management of shared waters, the management of cross-border transhumance and the management of fishery resources (Boureima, 2016).

The following section analyses the different options chosen by selected West African countries with a relatively high proportion of arable irrigated land, including both [Anglophone](#) and [Francophone West Africa](#), namely [Mali](#), [Nigeria](#), and [Senegal](#).

3. Country case studies: Mali, Nigeria and Senegal

3.1 Water culture and conflicts in Mali

Life in [Mali](#) is focused on the [Niger River](#). In fact, 23 % of the 703 [Communes of Mali](#) are bordering the Niger, and 75% of Malians live along the river. Since the great droughts in 1972-1974, when approximately 40 % of Mali's herds were lost, and 1984, when about 100,000 victims of the drought were resettled in about thirty camps around [Gao](#), the settlements bordering the Niger underwent significant spatial and demographic dynamics (Coulibaly, 2021). The cultural wealth and natural resources of the river make it a lever for local development.

Two of the main ethnic groups living on the banks of the inland Niger Delta are the so-called water people, the [Bozo](#) and Somono. The former are fishermen for whom the management of water is fundamental. The latter defined themselves by shipping. The water of the river thus appears as a culture forged by professional activities (Coulibaly, 2021).

Graph 9: Niger River and Inner Delta in Mali



Source: '[Inner Niger Delta](#)', Wikipedia

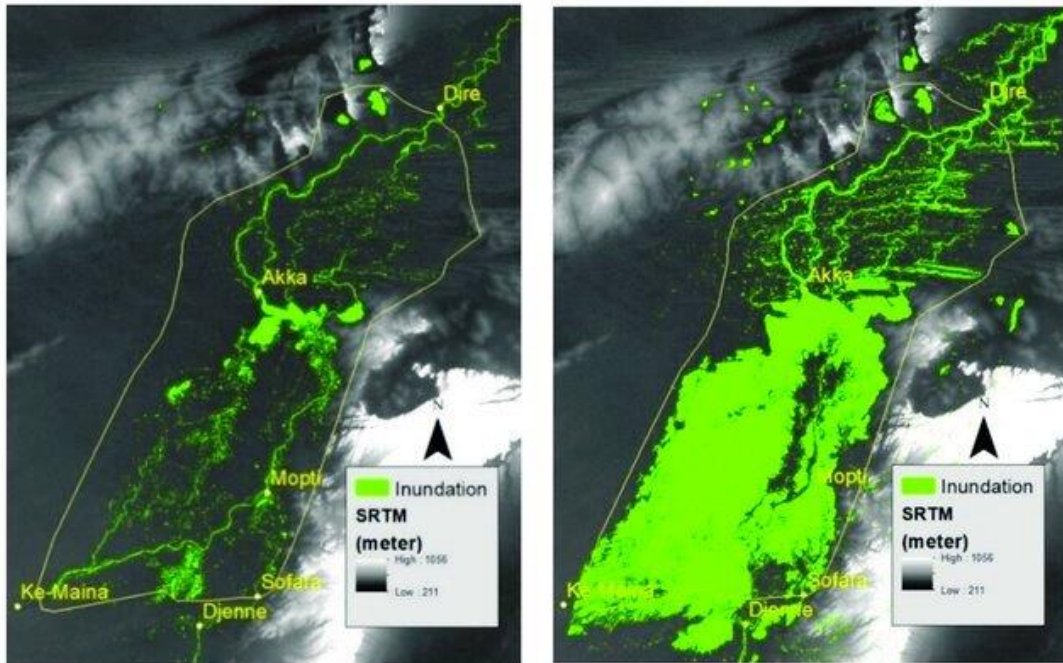
Also among the [Dogon](#), an ethnic group living in the central plateau region of [Mali](#), south of the [Niger](#) bend, water represents an important role both in the real and the spiritual world. The [Hogon](#), spiritual and political leader of the Dogon is also the master of heavenly water and guardian of spiritual principles and cereals. He is responsible for the agrarian cult, guarantor of the quality of soils and the integrity of their products, and considered the master of productivity (Dembele, 2003).

[Transhumance](#) pastoralism determines land and water use in the [Inner Niger Delta](#). Alternating dry and flooded states rule over land use between cattle herders, rice cultivation, and fisheries. During the annual flooding from August to November / December, the pastures can hardly be used as the water is too deep for grazing, and parasites and diseases decimate the cattle. However, in the past three decades, several problems evolved leading to the degradation of the central delta for four major reasons: excessive fishing, intensive grazing in the floodplains by some two million cattle and four million sheep and goats, driving the

floodplain forests close to extinction, land use changes from natural vegetation to plantations, and water diversion upstream with a negative impact on the precarious ecosystem of the floodplain (Berton et al., 2022).

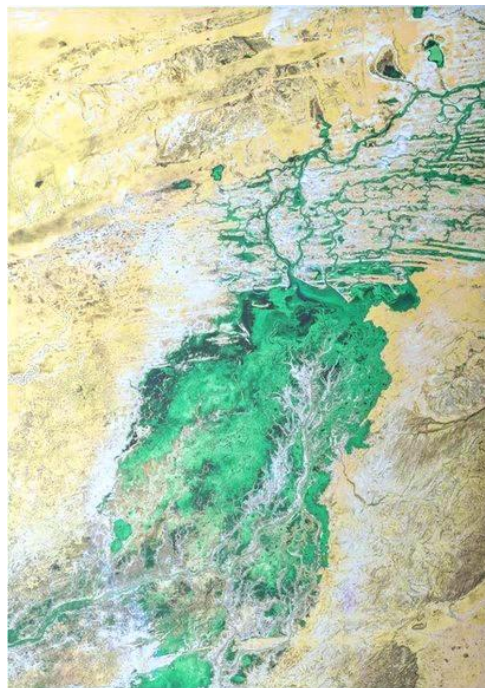
Graph 10: Annual inundation extent of the Inner Niger Delta

The example of 28 July 2001 (left) and 16 October 2001 (right), satellite images



Source: Haque et al. (2019)

Graph 11: high-resolution NASA satellite imagery of Inner Niger River Delta



Source: [Point Two Design](#)

The Fulani cattle herders usually return from October onwards, and official agreements determine the precise return date and area to prevent conflicts with Dogon peasant farmers.

Nevertheless, violent farmer-herder conflicts over land and water constitute still one of the major socio-economic and political problems of the region. Traditional rules facilitating cooperation between farmers and herders became insufficient to manage increased competition over land and water. These clashes escalated in the [Seenou plains](#) in the Mopti region of central Mali to a veritable Fulani-dominated '[jihadist](#)' insurgency, which the Malian army failed to defeat. The latter had sponsored and trained a [Dogon militia](#) '*Dan Na Ambassagou*' in 2016 that systematically attacked Fulani villages and provoked counter-attacks. In addition, internal conflicts within Fulani and Dogon society emerged (Benjaminsen & Ba, 2021). But about 42 % of land use conflicts were between herders and farmers (Jones-Casey & Knox, 2011). As for the management of irrigation schemes, Water Users Associations ([WUAs](#)) were considered a panacea for improving water management. They were usually imposed on farmers by national governments, NGOs, and international donors, without sufficiently considering existing forms of organization. This also happened in the [Office du Niger](#) irrigation scheme in Mali. However, informal decision-making patterns remain dominant, based on the existing traditional authority of village leaders (Vandersypen & Keita & Coulibaly, 2007).

Conflicts typically arose when herders violated traditional post-harvest grazing rules, such as the practice of *Sammandé*. By the latter, herders were granted two days to graze their cattle and other small animals on the millet and sorghum stalks following the grain harvest. However, because peasants were increasingly worried that herders would ruin their fields, this practice changed. Herders were often frustrated that chiefs did not set the *Sammandé* some days earlier so that the millet stalks do not dry out. The peasants, on the other hand, were frustrated because they believed that the herders bribed the chiefs to allow *Sammandé* too soon after the harvest (Jones-Casey & Knox, 2011). Other cases included situations in which land cultivated expanded into traditional transhumant herder routes or blocked access by cattle to water sources such as wells or riverbanks. Also, wetland areas that were once reserved for *burgoo* (a plant on which cattle graze) were being converted to rice production. Still, other causes of conflict were livestock theft and damage to fields by animals (Jones-Casey & Knox, 2011).

Cartoon 2: Conflicts between farmers and herders in Mali



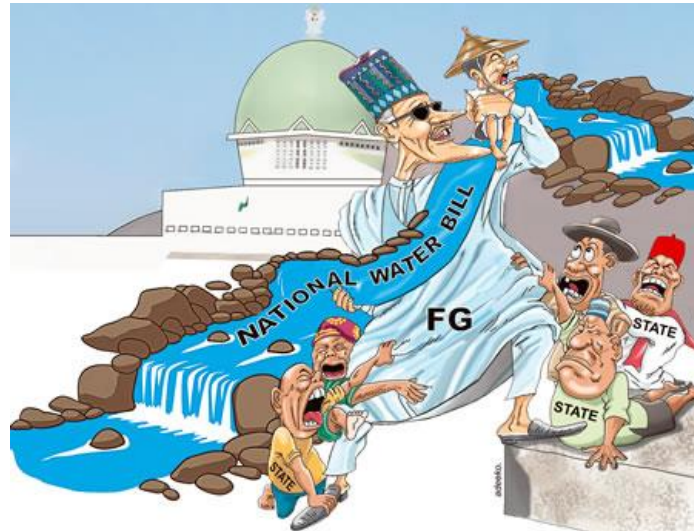
Source: © Amidou Badji, Gaye, 2018

Concerning hydraulic dams in Mali, severe flooding downstream of the [Selingué dam](#) on the [Sankarani River](#), one of the affluent of Niger, caused life-threatening problems in 2001 and 2010. In 2001, dam operators had deliberately kept reservoir levels high in anticipation of increased demand for hydroelectric power during an upcoming football championship. When heavy rains hit the area, the operators were forced to release huge amounts of water, causing

massive flooding downstream. In the flood's aftermath, downstream peasants were able to sue the power company for their losses, but downstream herders had no comparable option. Casualties often followed gender lines. In 2010, men were trying to help people move away from the flood water, and afterwards, they were focused on rebuilding homes, whilst women were concerned with finding shelter, cooking, and caring for the sick, elderly, and children (Diamond & Null & Parker, 2011).

3.2 Water culture and conflicts in Nigeria

Cartoon 3: *National Water Bill: A trial of Nigeria's 'pseudo' federalism?*⁴



Source: © *adeeko*, Osadebawen, 2018

A wide range of meanings, beliefs, values and taboos surrounded local perceptions and ideas of water in [Nigeria](#). In general, water resources management includes individual holdings, secret society land (where applicable), and sacred groves. Individual holdings imply the right of ownership of all available groundwater under the land area according to the Land Use Decree of 1978, while surface water, notwithstanding the types of land holding system belongs to the community. Given the predominantly traditional form of land and water ownership in rural Nigeria, local awareness and regards for the natural environment are quite intense which influences general perception and traditional behavioural practices (Akpabio, 2012). To date, the [water supply and sanitation in Nigeria](#) is shared between three levels of government, federal, state and local. The controversial National Water Bill of 2018, still not voted on by the National Assembly, tried to centralize the control of water resources.

According to official estimates about 42 % of Nigeria's urban and semi-urban population have access to safe water supplies and adequate sanitation compared to about 29 % living in rural communities. Increasing socio-economic development and population pressure in the face of inadequate investment in water and sanitation are the main reasons for the low coverage observed. Most people have to build their own water supply, which in most cases is based on beliefs, values, taboos and traditional norms. This may lead to the spread of epidemics like diarrhoea, cholera and dysentery. Those affected either blamed themselves or

⁴ Cartoon by [Adeeko Olusegun](#), on the controversial National Water Bill, still not voted by the National Assembly - 'the bill granted absolute powers and control of the water resources in and under Nigeria's territorial area to the Federal Government and its representative like the Minister of Water Resources to regulate the use of water from natural water bodies across Nigeria' (Osadebawen, 2018; Omorogbe, 2020).

blamed others, which usually led to hatred. If the conflict were to escalate, it could manifest itself as a kind of class struggle, with the poor accusing the rich of witchcraft. Therefore, Western thinking in terms of technical solutions is often inappropriate, as sustainable solutions depend on taking into account the social and cultural perspectives of potential beneficiary communities (Akpabio, 2012).

Similar to Mali, there exists a long-lasting and continuing conflict between peasants and herders since colonial times. It has been a bane of agricultural production over decades, shaped by diverse historical, environmental, political and economic elements (Adeniyi, 2019). The right to and control over land has been at the centre of the crisis between the rivals. The farmers blamed the migrant herders for destroying their farms, while the herders blamed the farmers for giving their cattle access to large areas of land to graze before the advent of irrigation programmes. They claim that the irrigation projects have changed the way their livelihoods are derived and constructed and have denied them access to their livelihoods. In general, pastoralists are wary of the continued encroachment of farmers on pastures and routes. Peasants, on the other hand, see the herders as transgressors who damage their crops in search of pasture and escape justice by fleeing before they are caught (Adeniyi, 2019). In recent years, however, the conflict increased in proportion and regularity with grave consequences for the peace, security and development of the Nigerian state, as indicated by the [Boko Haram](#) terrorist movement, fuelled also by herder-farmers conflicts (Chiluwa & Chiluwa, 2022).

In 2020, the Federal Government in [Abuja](#) re-presented a National Water Resources Bill to the National Assembly, which had been re-enacted with necessary modifications to bring them in line with current global trends, as well as best practices in Integrated Water Resources Management (IWRM). Many voters suspected that the bill was aimed at depriving a certain part of the country of its resources for the use of herdsmen. The debate on the bill in the Senate revealed a divide of senators on regional lines. While the Southern senators, predominantly of the opposition Peoples Democratic Party ([PDP](#)) underlined possible dangers, and even accused the government of ‘internal colonialism’, most of the Northern senators failed to see the danger (Omorogbe, 2020).

Apart from that, Nigeria has a long history of water conflicts with neighbouring countries. Notably, [Lake Chad](#), shared by four bordering states, [Chad](#), [Cameroon](#), [Niger](#) and [Nigeria](#) caused recurrent conflicts. They were mostly triggered by two major factors (Jungudo, 2021). Firstly, the unilateral decision by upstream riparian countries to build dams for domestic and industrial purposes severely affected the water security of downstream riparians. Also, it led to a rapid receding of the Lake Chad waters over the years due to stream flow modification and water diversion such as the construction of Yaguou-Tekele Dyke, [Maga](#), Alau, [Tiga](#), and Yeders dams on its main tributaries. This led to water conflicts among the riparian states (Jungudo, 2021). Secondly, the potential for competing claims over the newly established islands as a result of the receding waters of Lake Chad. From 1959 to 1994 about 60,000 Nigerians followed the receding water, engaged in fishing and cultivating their crops within Cameroon's borders. The Nigerian government began to treat them as sovereign territories and eventually, the state levied taxes and provided them with military and police forces (Jungudo, 2021). According to the Lake Chad Basin Commission ([LCBC](#)), an intergovernmental organization set in place in 1964 to solve the water disputes, some problems were still unresolved, which has been an important social and security-related issue.

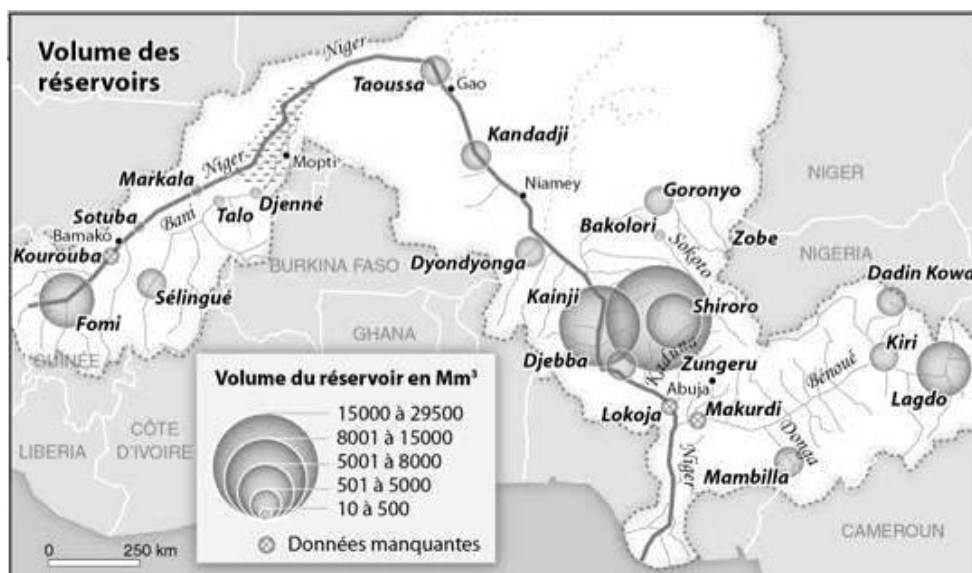
Already in 1981 Nigeria and Cameroon had a water conflict, including military encounters in the oil-rich areas of [Rio del Rey](#), close to the border with Nigeria at the [Gulf of Guinea](#),

connected to the [Cross River](#) estuary from which it is separated by the [Bakassi](#) peninsula (Jungudo, 2021).

Also, the initially uncoordinated inflation of hydroelectric dam projects in the [Niger Basin](#) caused concern. The [Niger](#) and [Senegal Rivers](#) have been jointly managed by the river States since the 1960s. In colonial times, most hydraulic developments and uses of the water resource concerned the Malian [Inner Niger Delta](#) (Auclair & Lasserre, 2013). The [Office du Niger](#) (1932) served to increase the agricultural potential of this region. The potential of the lower course of the river, in Nigeria, was unlocked only after independence (1960) with the construction of major dams, including that of [Kainji](#) in 1968, to which were added those of [Kiri](#) (1982), [Dadin Kowa](#) (1984), [Jebba](#) (1985), [Shiroro](#) (1990) and [Zungeru Hydroelectric Power Station](#) (2022), both on the [Kaduna river](#), a tributary to the Niger. The [Mambilla Hydroelectric Power Station](#) at the [Donga River](#) in South-East Nigeria, near the Cameroon border, will be the largest in the country when completed (about 2030).

Nigeria, benefiting from the flow on the lower course, had up to now little to worry about as long as its upstream neighbours carried out few hydraulic projects. The [Niger Basin Authority](#) (ABN), founded in 1964, was revived in 1998, underlining the ‘shared vision’ of water use. But at the end of the 1990s, several dams and irrigated perimeters were created or relaunched in the upstream neighbouring countries with the potential to alter both the flow regime and the volumes available (Auclair & Lasserre, 2013). Therefore, [Abjua](#) became concerned about the multiplication of river development projects. These concerns might aggravate when climate change would cause prolonged droughts in the riparian Sahel states, and conflicts similar to the quarrel between [Ethiopia](#) and [Egypt](#) on the controversial [Grand Ethiopian Renaissance Dam](#) would develop (Auclair & Lasserre, 2013).

Graph 12: volume of reservoirs in the Niger basin



Source: Geographic department, Laval University, 2013, Auclair & Lasserre, 2013

Even within Nigeria, water management was becoming increasingly important, for example in rice irrigation, which was critical to food and water security in the arid and semi-arid regions of the country. The effect of flooded rice irrigation was low water productivity in the area, depriving other sectors such as domestic, fisheries and industrial use of water resources, often leading to conflicts between sectors (Mafo, 2022).

3.3 Water culture and conflicts in Senegal

Cartoon 4: Senegal's discontent mounts as floodwaters rise ⁵



Source: © [Damien Glez](#), *Jeune Afrique*, 9 September 2020

Water had always a crucial role in the customs of the different ethnic groups in Senegal. For example, traditionally, one of the most important ceremonies of a village chief or earth-priests in the Wolof society, the largest ethnic group, consisted of a ritual bath of purification and sanctification that the sovereign took in water from a spring, a backwater or a well, mixed with magical preparations (Diop, 2012). According to cattle origin legends of Fulbe nomads, the cow is given by a water spirit, sometimes credited as the father of the first ancestor (Dupire, 2000). For the Ajamaat, a diaspora of the [Diola](#) ethnic group living in the Lower [Casamance](#) region, water occupies an important place in their traditional beliefs beyond its nourishing aspect. Aquatic environments are considered as sanctuaries for many beings who populate the religious universe ajamaat, the access to the sacred spaces is subject to prohibitions (Sané & Diatta & Diémé, 2021).

In the countryside, apart from the purpose of drinking, for which is set aside only a marginal amount of water compared with agricultural use in the view of traditional peasants and herders, water is used according to very elastic standards, for cooking and washing. As for the laundry, it is still of little importance in rural areas in the dry season when water is scarce. Thus 10 litres of water per day and per person seem to be sufficient for the Senegalese peasant, which is little, compared to the 300 litres which are estimated to be necessary for the consumption of Europeans. The exercise of professional agricultural activities comes first. Water is of utmost importance for the Senegalese peasant. In the countryside they await feverish the first rains, the people, the cattle, the plants and the earth, all are thirsty (Brasseur, 1950).

The low population density is exacerbated by significant concomitant mortality due to water deficit (Séné & Perez & Albergel, 1995). Estimates about the mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (per 100,000 people) in Senegal vary. According to the [World Bank](#) (World Health Organization, Global Health Observatory Data

⁵ “Retain your composure - We are only at the second part of the first phase of the end of the beginning of the penultimate component of the flood control program”. Allusion to the devastating floods of September 2020 and the controversial handling of their aftermath under the government's ten-year flood control programme. - Cartoon: Source: © [Damien Glez](#), *Jeune Afrique*, 9 September 2020.

Repository, 2023), it was about 24 % in 2016, and according to the International Water Organization, of the total deaths in Senegal, 16.5 % were water-related with the overwhelming proportion of these deaths being of young children.

The legal framework for water resource management is relatively old. During the colonial period, that made Senegal the headquarters of the A.O.F ([French West Africa](#)), the decree of March 5, 1921, already regulated the water regime of French West Africa, supplemented by the provisions of the Civil Code relating to water resources. After independence, the management of water resources was governed by a set of legislative and regulatory texts which make this resource a common good for all ([DGPPE](#), Ministère de L'Eau, Dakar, 2023).

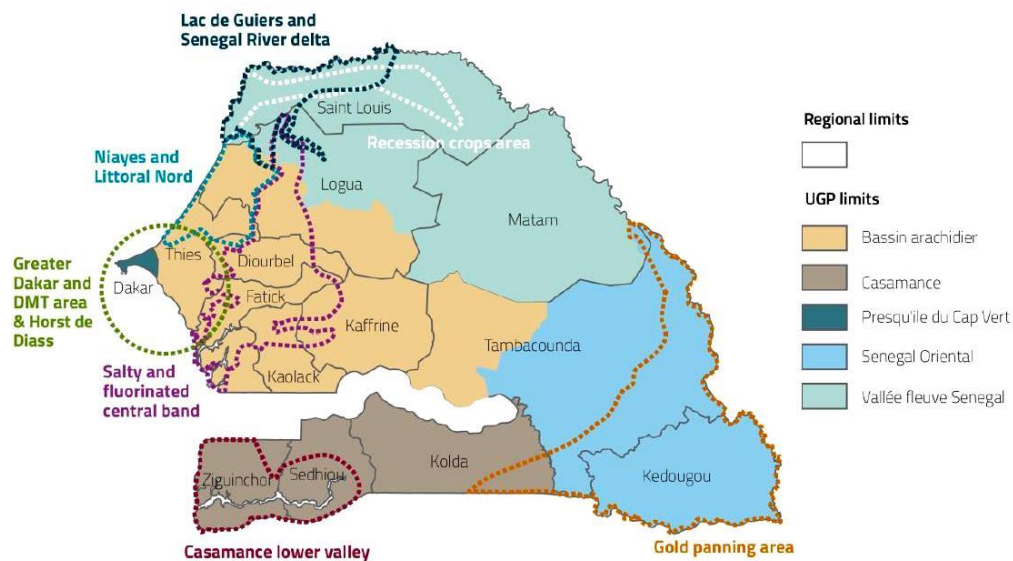
Graph 13: Map of the Senegal River drainage basin



Source: '[Senegal river](#)', map: © Kmusser, 2010, Wikipedia

[Senegal](#) is already suffering from water shortages. Current water use is expected to increase by 30 % to 60 % by 2035. According to [World Bank](#) estimates, water-related extreme events and pollution are already costing Senegal more than 10 % of its GDP each year (WB, 2022). Due to the growth of water-intensive sectors such as irrigated agriculture, mining and tourism, and the lack of demand management, the country's water disposal has been gradually declining since the 1960s, aggravated by accelerating urbanisation and climate change. However, the average water availability in Senegal conceals significant variability in space and time. It does not necessarily coincide with demand, which makes it costly and complex to meet the ever-growing water needs. Surface water accounts for nearly 90 % of the country's renewable water resources, of which 97 % originates from beyond the country's borders (WB, 2022). Moreover, surface water is often salty due to seawater intrusion caused by tides in regions up to 200 km from the coast. Thus, agricultural production in the [Casamance River basin](#) has been seriously affected by the loss of more than 50,000 hectares of irrigated and non-irrigated cropland due to [salination](#) (WB, 2022). Also, [water pollution](#) poses a problem. Contamination was due to drainage water discharge containing fertilizer and phytosanitary products' residues, unregulated gold mining upstream of the watersheds, and to insufficient collection and treatment of the waste produced by riparian communities. The Senegalese Sugar Corporation ([CSS](#)), which manages nearly 10,000 hectares of sugar cane plantations along the [Lac de Guiers](#) that supplies drinking water to nearly 4 million inhabitants of the capital [Dakar](#) and its suburbs, is one of the major sources of pollution (WB, 2022). All these shortages and problems are potential accelerants of water conflicts.

Graph 14: Map of the 8 identified hotspots of water security risks in Senegal overlain with the DGPRE’s existing planning units



Source: WB, 2022

The management of water resources for service delivery and risk mitigation is crucial to guarantee water security. In this respect, the administration of the Senegal River Basin is reckoned as a model for both cooperation and conflict over water. The three downstream states Senegal, Mauritania, and Mali have reached an extraordinary degree of integration in managing their shared river (Kipping, 2009). The Organization for the Development of the Senegal River (Organisation pour la Mise en Valeur du Fleuve Sénégal, [OMVS](#)) developed a sophisticated infrastructure for irrigation, power generation, and navigation, including the construction of two major dams in common property, the multi-purpose [Manantali Dam](#) in Mali and the [Maka-Diama Dam](#) downstream on the Mauritania-Senegal border.

However, the most violent water conflict in the region, the [Mauritania–Senegal Border War](#), when the Mauritanian Moorish elite expelled the ‘black’ farmers of the valley in 1989/90 to gain control over their irrigated land, did not occur at the times of water-stress during the first devastating [Sahelian drought of 1968](#). On the contrary, it happened after water disposal in the [Senegal Valley](#) had increased, thanks to the dams constructed in the meantime. Although ethnic tensions were at the origin of this conflict, it was mainly linked to inequalities of access to land and water in the floodplain of the Senegal River during a period of hydro-climatic and agricultural crisis. It illustrated the break in the management of river water and access to land in the vast wetlands of the Sahel, where dependence on river water is essential for survival. However, official policies often followed a technical and cold conception of water management instead of a more adequate vision of the needs, culture and habits of people living along the river (Bruckmann, 2018). The conflict led some authors to bold speculations that water scarcity in agriculture tended to correlate with more intense cooperation between riparian states, and less water scarcity with violent conflict within one of these states (Kipping, 2009). However, the major objective of dam construction in Senegal was hydropower production and not to improve water availability during the annual flood, traditionally used for flood recession agriculture. On the contrary, it led to a noticeable reduction in water provision for agriculture (Raso & Bader & Weijs, 2018).

A particularly risky situation involving water and land conflicts developed in the northern border region of the country of the [Ferlo desert](#) region. It is populated by [Fula people](#) (Fulbe)

(85%), [Wolofs](#), [Moors](#) and [Serers](#). In this extensive livestock region, the ecological conditions made pastoral mobility over vast areas one of the best strategies for pastoralists to adapt to the fragile environment. However, in recent years, competition for access to natural resources increased. Clashes were frequent, both between different actors in a given area, and between pastoralists and sedentary populations. These conflicts had been aggravated by the fact that in addition to the internal mobility of herdsmen in the region, transhumance of herdsmen from neighbouring countries was added. This increased the risk of conflict between farmers and foreign herders, as well as between Senegalese and foreign pastoralists. Thus, pastoral groups from Mali and Mauritania, countries bordering Senegal, were opposed to the resident populations of Ferlo. They also set these herder groups against each other (Sy, 2010).

Graph 15: Map of the Ferlo region, North-Eastern Senegal



Source: Sy, 2010

In 2020, during an outstanding rainy season, an exceptional controversy developed in Senegalese social networks and the media about the allegedly scandalous use of funds allocated to the Ten-Year Flood Control Program (Glez, 2020). Senegalese's discontent mounted as flood waters rose. Rainfall during the weekend of 5 to 6 September exceeded, with 124 millimetres, the three-month rainfall of a normal rainy season. The rains poured calamity and desolation over the population, including loss of human life, cracked or collapsed dwellings, vast areas of arable land submerged, animals carried away by torrents, and the subsequent risk of disease and famine. President [Macky Sall](#) tried to organize emergency management along the lines of the French model of the [ORSEC plan](#), a generic emergency plan in the event of a disaster when local resources are insufficient (“ORSEC” stands for ‘Organization de la Réponse de Sécurité Civile’). However, critical journalists, in veiled terms, and social network users, more bluntly, wondered what had become of the 766 bn [CFA francs](#) allocated, from 2012 onwards, to the ten-year flood control program, and forwarded accusations of embezzlement and corruption (Glez, 2020). Given climate change, similar calamities and cleavages are likely to become more frequent.

4 Conclusion

Cartoon 5: Climate change and migration



Source: Peter Kuper, [Santa Cruz Sentinel](#), 30 September 2020

Water availability may be both at the same time, a blessing and a curse in West Africa. The risks related to climate change will even increase in the coming decades and overstretch many societies' adaptive capacities. This could result in destabilization and violence, endangering national and international security to a new degree. It could aggravate already existing lines of division and conflict in international relations, triggering conflicts between and within countries over the distribution of water and land. Also, it would impact the management of migration and compensation payments between the countries mainly responsible for climate change and those countries most affected by its destructive effects (Schellnhuber, 2010).

Furthermore, environmental degradation in the West African River Basins might become a serious challenge to national and regional authorities. This concerns the side effects of population growth, migration, settlement, deforestation, over-grazing, erosion, sedimentation, land degradation, desertification, persisting drought, and amplification of zones with water scarcity. In the Sahel, the Sahara desert is expanding southwards, forcing the farming community to migrate further south, abandoning what was once fertile land (Tadesse, 2008).

Agricultural irrigation, including the building of large dams, could enhance the well-being of the people and plays a significant role in local, national, and transnational economics. However, it also has created problems, such as excessive cost, salinization of land and water resources, adverse socio-economic and cultural effects, and environmental damage. Also, most of these systems have centralized (top-down) management, which is not in the best interest of peasants and local people. Careful improvement of existing local irrigation practices and peasant's (bottom-up) management may ultimately be more successful by adequately addressing cultural, social, and environmental aspects (Schilfgaard, 1994).

Mounting water scarcity and programs to increase the efficiency of water allocation and delivery will impact significantly the allocation of water rights. Although women often have informal means and mechanisms to obtain and secure access to water, in most West African societies there exists no adequate recognition of women's specific water needs, especially for production. Current policies to privatize and devolve management of irrigation need to adapt to specific women's water needs if they are to address efficiency as well as equity concerns

(Zwarteveen, 1997). Also, water-related conflicts could eventually be better mitigated by more gender equity. For example, women should be represented in the councils for water conflict management in their own right as farmers and landowners (Mishra-Panda, 2015).

Climate and environmental changes will pose challenges to international security about growing food insecurity, severe droughts and floods, including its impacts on energy supplies and infrastructure. The effect of rainfall anomalies on communal conflict will be stronger in the presence of economic and political marginalization. In particular, erratic rainfall, which reduces the availability of water and arable land, could create incentives for violent attacks against other communities to secure access to scarce resources. Analyses of communal conflict in Sub-Saharan Africa between 1990 and 2008 revealed that significant negative deviations in rainfall from the historical norm were associated with a higher risk of communal conflict. Therefore, the effect of rainfall deficiencies on the risk of communal conflict will be greater in regions inhabited by politically excluded ethnopolitical groups (Fjelde & Uexkull, 2012). Moreover, environmental hazards are likely to come not gradually but to shift abruptly, posing new risks to vulnerable systems in ways that diverge from past experiences in aggravating domestic and transnational security. Therefore, climate change could affect security planning also from a military defence perspective (Briggs, 2012).

Finally, climate change impacts migration in West Africa. Weather anomalies induce rural-urban migration that subsequently triggers international migration. Experts expect coming weather anomalies to lead to the annual displacement of 11.8 million people by the end of the 21st century based on medium UN population and IPCC climate change projections (Marchiori & Maystadt & Schumacher, 2012). Such climate-induced migration could endanger and at the same time tighten security regimes. This will concern not only the major European receiving countries but also the states that serve as transit points like Tunisia and Libya. This may lead to an increase in the state's reaches over society both in Europe and in North Africa (White, 2011).

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Résumé : [*L'eau, une bénédiction et une malédiction : comment résoudre les conflits liés à l'eau en Afrique de l'Ouest?*] – Pour de nombreux Africains, l'eau n'est pas seulement la source de la vie, mais aussi un moyen de purification et un centre de régénération. Les rituels et les cultes de l'eau, tels que «Mami Wata», conduisent leurs adeptes à la libération du corps et de l'esprit. Mais les rites coutumiers peuvent aussi causer des dommages. Par exemple, l'utilisation ancestrale de l'irrigation réduit la participation contemporaine des femmes au travail et les droits de propriété des femmes. Il est crucial de prendre en compte le genre dans la gestion des ressources dans le contexte du changement climatique, de la dégradation de l'environnement et de la croissance démographique, ce qui exacerbera les conflits sur les ressources rares telles que les terres arables, l'eau, la pêche et la chasse. Une mauvaise gouvernance conduit à l'aliénation et à l'exploitation de la majorité et à une inégalité croissante, en particulier lorsque l'eau est rare et que les moyens de subsistance des populations sont menacés. L'Afrique subsaharienne est le continent le plus touché par le changement climatique, la croissance démographique et l'insécurité alimentaire. Pourtant, les États africains, où les écosystèmes aquatiques sont des ressources stratégiques, sont plus enclins aux conflits régionaux qu'à la coopération. Dans le passé, les chocs liés au climat ont alimenté des conflits violents en Afrique de l'Ouest. La pression foncière et la rareté de l'eau provoquent des crises de plus en plus aiguës. Les institutions traditionnelles de gestion de l'eau et des terres sont souvent déstabilisées par les techniques modernes d'irrigation et les entrées massives de capitaux étrangers. La modernisation est portée par un utilitarisme centré sur l'Occident qui ne peut être universalisé. L'intensification des conflits autour de l'eau a révélé une crise générale qui risque de s'aggraver compte tenu des dynamiques à l'œuvre. La dégradation de l'environnement est l'un des sous-produits indésirables de la croissance de la productivité agricole, mais les institutions coutumières ne peuvent fournir une réglementation adéquate pour atténuer ses effets. Mais même dans les régions d'Afrique de l'Ouest où l'eau est abondante, la malédiction des ressources lie l'abondance des ressources naturelles à des niveaux de conflit plus élevés. La commercialisation de l'eau, y compris l'accapement des terres et de l'eau, peut même conduire à des conflits interétatiques par les effets de la cupidité ou des griefs. En fin de compte, cependant, les conflits ne portent souvent pas tant sur l'accès à des ressources rares telles que l'eau, la nourriture ou la terre, mais plutôt sur la modification des institutions politiques par lesquelles les ressources sont distribuées. La pénurie d'eau exerce une pression sur les populations, entraînant des migrations, des déplacements, l'insécurité alimentaire et l'appauvrissement, ce qui peut conduire à de nouveaux conflits.

Zusammenfassung : [*Wasser als Segen und Fluch: Wie kann man Wasserkonflikten in Westafrika begegnen?*] – Für viele Afrikaner ist Wasser nicht nur die Quelle des Lebens, sondern auch ein Mittel zur Reinigung und ein Zentrum der Regeneration. Wasserrituale und -kulte wie „Mami Wata“ führen ihre Anhänger zur Befreiung von Körper und Geist. Aber auch gewohnheitsmäßige Rituale können Schaden anrichten. Beispielsweise verringert die uralte Nutzung der Bewässerung die Erwerbsbeteiligung und Eigentumsrechte von Frauen heute. Es ist von entscheidender Bedeutung, das Geschlecht im Ressourcenmanagement im Kontext von Klimawandel, Umweltzerstörung und Bevölkerungswachstum zu berücksichtigen, was Konflikte um knappe Ressourcen wie Ackerland, Wasser, Fischerei und Jagd verschärfen wird. Schlechte Regierungsführung führt zur Entfremdung und Ausbeutung der Mehrheit und zu wachsender Ungleichheit, insbesondere wenn Wasser knapp ist und die Lebensgrundlage der Menschen gefährdet ist. Afrika südlich der Sahara ist der Kontinent, der am stärksten von Klimawandel, Bevölkerungswachstum und Ernährungsunsicherheit betroffen ist. Doch afrikanische Staaten, in denen Wasserökosysteme strategische Ressourcen darstellen, neigen eher zu regionalen Konflikten als zur Zusammenarbeit. In der Vergangenheit haben klimabedingte Schocks gewalttätige Konflikte in Westafrika angeheizt. Landdruck und Wasserknappheit führen zu immer akuterer Krisen. Traditionelle Institutionen der Wasser- und Landbewirtschaftung werden oft durch moderne Bewässerungstechniken und massive Zuflüsse ausländischen Kapitals destabilisiert. Die Modernisierung wird von einem westlich zentrierten Utilitarismus vorangetrieben, der nicht universalisiert werden kann. Die Verschärfung der Konflikte um Wasser hat eine allgemeine Krise offenbart, die sich angesichts der Dynamik, die hier herrscht, wahrscheinlich noch verschärfen wird. Umweltzerstörung ist eines der unerwünschten Nebenprodukte des landwirtschaftlichen Produktivitätswachstums, aber die herkömmlichen Institutionen können keine angemessene Regulierung bieten, um ihre Auswirkungen abzumildern. Aber selbst in westafrikanischen Regionen, in denen es reichlich Wasser gibt, bringt der Ressourcenfluch den Reichtum an natürlichen Ressourcen mit einem höheren Konfliktniveau in Verbindung. Die Kommerzialisierung von Wasser, einschließlich Land- und Wasserraub, kann aufgrund von Gier oder Missständen sogar zu zwischenstaatlichen Konflikten führen. Letztlich geht es bei Konflikten jedoch oft nicht so sehr um den Zugang zu knappen Ressourcen wie Wasser, Nahrung oder Land, sondern vielmehr um die Veränderung der politischen Institutionen, über die Ressourcen verteilt werden. Wasserknappheit setzt die Menschen unter Druck, was zu Migration, Vertreibung, Ernährungsunsicherheit und Verarmung führt, was zu weiteren Konflikten führen kann.