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Stabilization Mechanism Project

Nature-based Solutions and Peacebuilding

RESEARCH BRIEF

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For peace process practitioners transboundary environmental issues such as water, climate change and desertification present a broad array of potential peace initiatives, from international declarations to guiding principles to treaties to shared management and diplomatic contact.

The Stabilization Mechanism Research Brief Series contributes more widely to the overall field of knowledge for environmental cooperation in the service of peace.

Nature-based Solutions and Peacebuilding

Recognizing climate change as a risk multiplier and potential source of future insecurity, this brief looks more closely at the role that nature-based solutions can play in mitigating the impacts of climate change and promoting peace and security.

Nature-based Solutions and Peacebuilding

Addressing climate change as a threat multiplier can serve as a leverage point for cooperation in peacebuilding efforts. Despite overwhelming evidence of the risks posed by climate change and the criticality of including them in peace negotiations, few peace agreements make direct reference to this issue **[1]**. Climate change-related issues such as natural resource scarcity and water shortages are more commonly implicitly addressed in peace agreements at a shallow level. This has implications for sustainable peacebuilding efforts as climate change impacts will continue exacerbating conflict, particularly in fragile and vulnerable regions. There is a pressing need to hasten the pace at which climate change impacts are incorporated into peace processes.

The adverse compounding effects of climate change on the emergence and escalation of conflict are well-recognized among policymakers. How to operationalize shared environmental issues between conflict actors toward positive peacebuilding at a multi-track level needs to be further strengthened. This brief particularly looks at how socioecological resilience can be promoted through nature-based solutions (NbS) toward an enabling environment for peacebuilding.

It does so by looking more closely at the use of NbS in Sudan and Liberia and Sierra Leone to support peacebuilding through shared natural resources.

Environment-Peace Links

Research on environment-peace-links is still at an early stage and needs further research to advance a greater theoretical and empirical knowledge base. Adding to this knowledge base on environmental-peace-links, Tobias Ide has outlined core findings from reviewing empirical literature on environmental peacebuilding that are useful while considering the role of NbS as positive contribution in environmental peacebuilding **[1]**.

Ide (2018) highlights four mechanisms to consider when considering environmental cooperation and peace connections at an intrastate and interstate level respectively. It considers, in particular, how environmental cooperation can contribute to three forms of peace: the absence of violence, symbolic rapprochement and substantial integration. There are particular context factors that Ide identifies as needing to be present in order for mechanisms of environmental peacebuilding to effectively contribute to peace. The main findings of this study are summarized in the table.

Understanding of Peace → / Mechanism ↓	Absence of violence	Symbolic rapprochement	Substantial integration
(1) Improving the environmental situation	Intrastate		
(2) Increasing understanding and trust		Intrastate Interstate	
(3) Cultivating interdependence			
(4) Building institutions	Intrastate	Interstate	
Most relevant contextual factors	Absence of recent violence Tradition of cooperation Consensual environmental-knowledge External support/recognition	Absence of strong tensions Involvement of relevant decision makers High environmental stress External support	/

[1]

Resilience and Adaptability in Peacebuilding

The ability of a social system to effectively cope with long-lasting stressors or unexpected events is known as resilience. This characteristic cannot be classified as good or bad since societies can demonstrate resiliency in the face of violence, while violent systems may also exhibit resilience when undergoing positive transformations.

Peacebuilding involves initiating procedures within a society to facilitate the creation of strong social and state institutions capable of effectively handling both internal and external pressures and shocks.

Nonetheless, promoting self-sufficiency from an external perspective can create conflicting viewpoints, processes and systems. Building resilience through environmental peacebuilding pathways does not inherently lead to peace and needs to be adaptable to the context and conflict sensitivities.

Building resilience through environmental pathways using tools such as NbS does, however, give access to options in ways that may not have existed before. Resilience building requires an understanding of local dynamics between community leaders, government institutions, cooperation agencies, and religious actors.

Nature-based solutions (NbS) encompass various ecosystem-based approaches, such as protection, restoration and sustainable management of natural resources to address societal issues **[2]**. NbS are therefore a powerful tool for resilience. Requiring buy-in and cooperation from various levels of society, NbS hold the potential of advancing locally-led solutions. By advancing inclusivity, NbS present pathways through which confidence-building measures can consolidate processes toward peace at a local, national and transboundary level.

Looking at NbS used in Sudan and between Liberia and Sierra Leone, we explore ways in which NbS can be used as a tool in environmental peacebuilding.

NbS in Sudan

Through combining 'gray infrastructure' interventions to restore the land in and beyond the low-lying fertile wadis, notable benefits in underwater replenishment were achieved.

Climate change has resulted in a decline in the reliability of rainfall, including its seasonality, intensity, and overall levels, in North Darfur, Sudan. The majority of farmers in this region depend heavily on rainfed farming to grow hardy crops like millet and sorghum, while underground water is crucial for supplying animals and for domestic use. Due to high demand, underground water availability has become increasingly scarce, especially in areas where there is insufficient water and land. Unreliable rainfall has led to a decrease in agricultural yields and the abandonment of settlements, as farmers are unable to produce enough crops or raise their livestock **[3]**.

The reduction in agricultural yields, primarily resulting from climate change, has compelled farmers to encroach upon forested and rangeland areas. This deforestation contributes to the process of desertification and diminishes the habitats of wildlife, intensifying the stress on rangeland even more. Additionally, elevated demand for fuelwood and timber aggravates the issue of deforestation.

Communal and tribal conflicts have been caused by the competition for natural resources, such as water. Exacerbated tensions are one of the reasons why approximately 500,000 people in North Darfur are considered internally displaced people (IDPs). Among the IDPs in North Darfur, around 20% reside in Kabkabiya, and they depend on wood for fuel and their livelihoods. As a result, areas near IDP camps have experienced more severe and rapid deforestation. Additionally, the competition for water, along with local and national politics, including the division of Sudan into two countries, has disrupted many traditional migratory routes utilized by pastoralists **[3]**.

To support integrated water resource management (IWRM) approaches, structures such as Earth dams and crescent terraces have been developed. These NbS aim to mitigate runoff, enhance infiltration and prevent the formation of gullies. In an effort to restore rangeland, high-quality seeds of native grasses have also been sown. Inclusive natural resource management committees have been formed to advance community plans on how to manage rangeland, farmland and water resources together to ensure equal and fair access.

Earth dams and crescent terraces constructed in Wadi El Ku, in North Darfur, have served the purpose of recharging underground water and increasing the survival rate of trees and shrubs planted along the wadi banks. These trees and shrubs help stabilize the banks, combat land degradation and desertification, and further recharge underground water, creating a beneficial cycle.

The coming together of different tribal groups as part of these IWRM approaches that incorporate NbS, has contributed positively to improving the direct environmental situation and has increased understanding and trust, thereby reducing the risk of intrastate conflict in the area. Moreover, to a degree, there has been interdependence cultivated through the inclusive community-led natural resource management committees that lay the foundations for potential further pathways to more resilient institution building.

These participatory natural resource management committees have demarcated migratory corridors that facilitate the movement of livestock, reducing conflicts between pastoralists and farmers. These corridors also provide pastoralists with improved access to water despite the impact of climate change, as they can move more freely to exploit areas with better rainfall and grass yield. The degradation and desertification of rangelands have been reduced as a result of decreased overgrazing. Restoration of forests, as well as the adoption of agroforestry practices, have also increased the productivity of farmland and rangeland. The sharing of existing resources has fostered social cohesion and coexistence between farmers and pastoralists. Improved land and water management has improved yields and allowed communities to cultivate crops on previously degraded land rather than expanding into forests. In Wadi El Ku, the rehabilitation of two traditional ponds known as 'haffirs' has resulted in eight villages having better access to water. Additionally, over 34 kilometers of livestock migratory corridors have been demarcated, enabling pastoralists to improve their livelihoods **[4]**.

NbS in Liberia and Sierra Leone

A participatory approach toward collaborative transboundary environmental cooperation between Liberia and Sierra Leone proved effective in advancing resilience against climate change shocks. Sierra Leone and Liberia are considered vulnerable nations. The communities living in forested areas rely heavily on natural resources, and their main source of income is subsistence farming. The civil wars that lasted for over a decade from the 1990s until the early 2000s had a devastating impact on an entire generation, resulting in the loss of traditional knowledge and skills, such as those related to cocoa farming. In certain regions, agricultural lands are becoming degraded, and poverty is forcing communities to clear the forested areas for farming.

The Upper Guinean Forest Eco-region is one of the three forested biodiversity hotspots in Africa. Sadly, since 1900, the eco-region has lost majority of its forest and is recognized as an area where deforestation is most severe. Out of the remaining forests, 49% is located in Liberia, and only 4% is in Sierra Leone **[5]**. The Greater Gola Landscape is the largest remaining area of this important ecosystem. It's a mix of protected forests, community forests, and agricultural lands. Wildlife corridors are crucial for many endangered species that only exist in this region, with a high risk of extinction. Adopting a landscape-scale approach when planning operations can be crucial in recognizing the interdependence of social, ecological, and economic systems **[6]**.

The large-scale landscape approach adopted to more sustainably manage the Greater Gola Landscape highlights how this NbS approach supports long-term multi-stakeholder partnerships. A coalition of non-governmental organizations (NGOs), the respective governments of Liberia and Sierra Leone and local community committees have been working together to support the creation of legally protected areas.

In 2011, Sierra Leone established the Gola Rainforest National Park (GRNP) covering an area of approximately 71,000 hectares and the surrounding forest-edge communities added around 70,000 hectares. Similarly, in Liberia, the Gola Forest National Park (GFNP) was created in 2016, protecting 89,033 hectares. The two countries signed a memorandum of understanding (MOU) in 2011, updated in 2020, committing to the conservation of the Gola Peace Park, which encompasses both the GRNP and GFNP **[7]**. The transboundary collaborative efforts have strengthened forest connectivity and community through advancing legally recognized community forest areas that continue to expand and support rainforest-friendly livelihood activity.

The management of GRNP in Sierra Leone is under the responsibility of Gola Rainforest Conservation Company (GRC LG). They have hired park rangers to prevent illegal activities, observe deforestation and species trends, and provide assistance to local volunteers. In Liberia, the GFNP has a new validated management plan that primarily prioritizes law enforcement actions.

NbS initiates that became facilitated by the interstate collaboration on transboundary natural resources management between Liberia and Sierra Leone through the Greater Gola Landscape have included:

- The reforestation of an area that is an important carbon store.
- Diversified livelihoods and education support.
- Biodiversity protection and preservation.
- ·nfrastructure and institutional building toward more resilient environments.

The centrality of community and the cross-sectoral scale and scope of the NbS landscape scale approach has advanced resilience. This is evident from the sustained continuation of these NbS initiatives during civil conflict and the Ebola outbreak. The significance of integrated sustainable financing mechanisms needs to be noted here. Annual investments made into the NbS initiatives through donor funding from the Royal Society for the Protection of Birds (RSPB), the REDD+ project and the establishment of resilient legal frameworks through which such financing could be managed, was key in contributing to resilience. Political will was present from Sierra Leone and Liberia toward transboundary cooperation on NbS. The competing interests and limited government revenues would have likely halted the continuation of these initiatives if the only financing mechanism available was directly from the core States. This demonstrates the benefits of advancing adaptive financing toward transboundary environmental initiatives to enable resilience.

NbS and Peacebuilding

The cases briefly discussed highlight the positive potential of NbS in peacebuilding. Nature-based solutions can be effective for promoting peacebuilding, but it cannot be assumed that simply because a solution is nature-based that it will automatically lead to peace.

Caution must be taken in approaching NbS as a tool in peacebuilding. NbS intersect with complex processes that may be shaped by contentious political decisions, diverse and situated environmental knowledge and subjectivities **[2]**. Comprehensive knowledge and understanding of these processes and broader systems must inform any NbS toward peace. In the local context where NbS stand be used as entry-points to dialogue and confidence-building in conflict settings, it is important that political will and technical expertise are wielded together to advance NbS. Mapping pathways between environment-peace links that shape how NbS are advanced stand to be in service of a peace process or undermine it.

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