IUCN National Committee of The Netherlands

INTERWEAVING WATERS, FORESTS AND COMMUNITIES

Strategies and lessons for water justice

Nature is our foundation

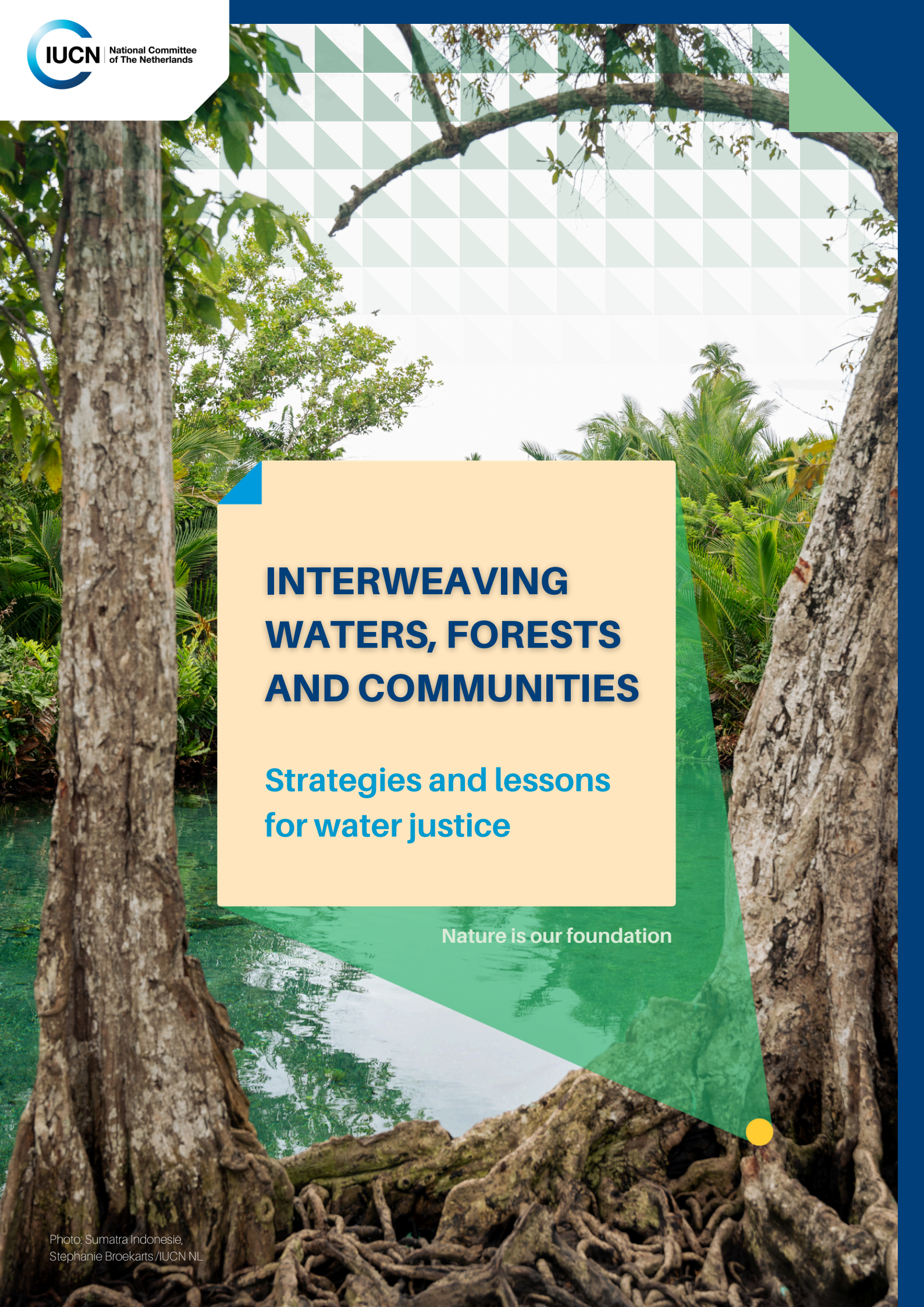

Photo: Sumatra Indonesië, Stephanie Broekarts /IUCN NL

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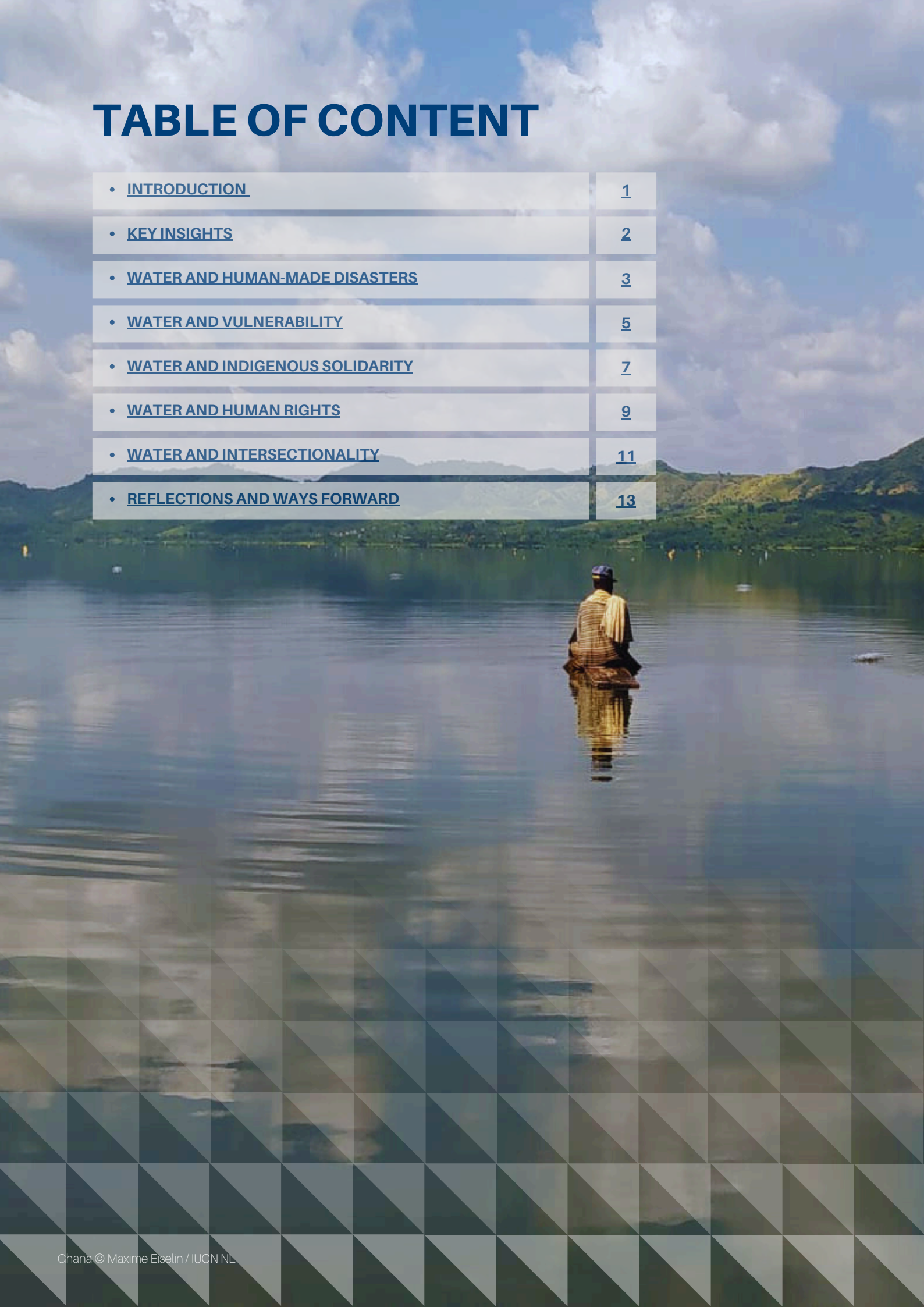

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INTRODUCTION

As water flows, it interweaves forests, rivers, lakes, and wetlands with communities, livelihoods, lifeways, and more-than-human worlds. But too often, water dries, floods, is diverted, over-extracted and polluted, disrupting and repatterning sensitive and intrinsic territorial interconnections between water, nature, and humans.

Under the Forests for a Just Future programme of the Green Livelihoods Alliance and its predecessor, IUCN NL worked with partner organisations across multiple countries to promote sustainable and inclusive governance of tropical forests. In this process, manifold water challenges and concerns for water justice emerged as transversal theme.

This synthesis distils these insights emerging from Bolivia, the Democratic Republic of Congo, Indonesia, and the Philippines. It offers valuable insights on the intersections of water, forest and communities and highlights key lessons and strategies to promote water justice at the water/forest nexus.

DRC © Paul Villaespesa / IUCN NL

Photo: Sumatra Indonesië, Stephanie Broekarts /IUCN NL

KEY INSIGHTS

- Water is more than a resource to control - it carries ecological, social, economic, cultural, and spiritual value. Its shifting flows shape forests and communities, just as these landscapes influence water's rhythms.
- Water problems are **rarely natural**. Across landscapes, challenges such as flooding, drought, and pollution are shaped by **human land use decisions** and related deforestation dynamics, and infused with powerful interests and dynamics of marginalisation.
- This means that water issues are **deeply political**. Every problem encountered across landscapes - whether manufactured scarcity, mercury contamination, or river diversion - reflects stark **power imbalances** driven by extractive industries, agribusiness, elite-capture, water grabbing, and unsustainable land-use change.
- The water problems go hand-in-hand with **severe injustices**. They overburden vulnerable communities, intersect with systemic marginalisation and violence, and result in human rights violations, loss of livelihoods, and irreversible environmental harm.
- Water justice is profoundly **intersectional**. Women, Indigenous peoples, youth, peasant and fishing communities bear disproportionate burdens of water injustices.
- Water injustices **destabilise entire ecosystems**, not just human communities. Water impacts cascade across multispecies relationships by altering habitats, breaking ecological cycles, threatening biodiversity, and undermining the **resilience** that both people and non-human life depend on.
- Local actors' leadership and knowledge point to **transformative pathways for water justice** and sustainability. Their relations and care for water and forests show how water governance can become more **equitable and sustainable**; if power, participation, and practice shift beyond symbolism.
- Strategies to strengthen local claims for water justice are diverse and interconnected. They include **promoting community-led initiatives**, research and evidence generation, alliance building, multi-level advocacy that links local realities to global arenas, targeted policy reform, and gender-sensitive interventions.
- The synthesis of challenges, lessons, and strategies underscores an urgent need for **coordinated action** to advance water justice and equitable water policies across diverse forest landscapes and problem contexts.

WATER AND HUMAN-MADE DISASTERS

There is no single global water crisis. Water problems are profoundly context-specific, shaped by the history, economic structures, political decisions, cultural dynamics, and ecological patterns of a place. For example, narratives often link droughts exclusively to climate change and extreme weather, but this is misleading. In many cases, global climate change is a severe concern but drought is driven or exacerbated by human interventions in water cycles - such as over-extraction, diversion, and unsustainable land-use practices.

Forests play a critical role in regulating water and mitigating droughts (or floods, respectively). Through their trees' roots, forests use soil moisture (green water) and return it back into the atmosphere, stabilising regional rainfall patterns (flying rivers) and global climate conditions. When forests are degraded or cleared - often due to agribusiness and extractive expansion driven by powerful interests - these natural regulatory functions are disrupted. Unsustainable land-use change such as deforestation disrupts hydrological cycles, reducing rainfall, evapotranspiration, and groundwater recharge, ultimately intensifying water problems.

This reality is evident across the landscapes covered by the Forests for a Just Future programme, where water challenges such as flooding, drought, and pollution are not natural phenomena. They are human-made. More specifically, they are created by some humans, whose interests override others, and intertwined with systemic marginalisation and powerful economic and political forces. These dynamics make water challenges deeply political and inseparable from broader questions of justice and sustainability.

Bolivia © Sander van Andel / IUCN NL

Problematic export-oriented agriculture creates water scarcity and limits water access for local communities

Location: The largest remaining tropical dry forest Chiquitano located in the lowlands of Santa Cruz in Eastern Bolivia

Partners: PROBIOMA, CEDIB and IUCN NL

Agricultural production is the largest driver of freshwater consumption globally. Through water-intensive agro-commodities, vast volumes of water are exported embedded in products. Exports of commodities such as beef create enormous pressure on water resources in producer countries, such as Bolivia.

The impacts of these “virtual water exports” are most severely felt in dry regions, where rainfall is scarce and natural water bodies are limited. One example is the Bolivian Chiquitano forest, which faces record levels of deforestation, primarily driven by the expansion of the agricultural frontier. Forests are being replaced by cattle ranching and large-scale cultivation of soy and maize for international markets.

The agricultural expansion leaves behind forest degradation, biodiversity loss and escalating water scarcity. More specifically, cattle ranching has created a water crisis, driven by powerful economic interests. This is because ranchers construct artificial ponds to secure water (30 to 80 liters are needed per cow per day) and extract groundwater without permits, depriving local communities of the access to their water commons and creating conflicts between cattle ranchers and adjacent populations.

In the Chiquitano’s water conflict, legal actions and community mobilisation have been critical in restoring water flows and setting a legal precedent. The experience by IUCN NL and Bolivian-based partner PROBIOMA shows how environmental courts and local community organisations can jointly challenge water diversion and deforestation driven by powerful actors. In that sense, a court ruling in favour of the communities' access marked an important step toward accountability and water justice. Such concerted action is important to protect interconnected forest landscapes, biodiversity, water and the communities that depend on them.

Read more about water scarcity in the Chiquitania region:

- Beyond the Amazon: Chiquitania, a forest gem navigating a water crisis
- Water conflict in Chiquitania: the cost of commodity production

WATER AND VULNERABILITY

Water problems - whether scarcity, floods, or contamination - are not neutral nor mere technical issues. They are shaped by stark power imbalances: Extractive industries, agribusiness, elite-capture[1] of institutions, water grabbing and unsustainable land-use change create systemic water injustices for those living in the landscapes. These dynamics overburden already vulnerable communities, eroding livelihoods and causing irreversible social and environmental harm, making them even more exposed to risks, such as flash floods or extreme droughts.

In other words, extractive interests and the capture of water commons exacerbate vulnerability, which is reflected across the landscapes where the Forests for a Just Future programme operated. Fighting this vulnerability means addressing its root causes; challenging extractive pressures while strengthening community-rooted ways of managing forests, water, and livelihoods. These approaches are essential for building community resilience from below and advancing water justice.

Photo: © Manuel Seoane / IUCN NL

[1] Elite capture is a form of corruption in which public resources and decisions are skewed to benefit a small group of powerful actors, often undermining broader societal welfare. In some contexts, elite capture extends beyond individual corruption and functions as a structural means of controlling political systems, policies, or industries.

Supporting social forestry to safeguard forests and livelihoods amid flash floods

Location: The Batanghari River winding across Sumatra Island in Indonesia

Partners: KKI WARSI and IUCN NL

Shifting climate patterns, combined with increasingly extreme weather, are leading to more frequent and severe flash floods. In the forest landscapes of Sumatra, Indonesia, the impact of such disasters on ecosystems and communities is magnified by widespread forest loss. The impacts of floods are multiplied when forests' natural water-regulating functions have collapsed. The drivers of forest loss - and thus the intensification of floods - are neither natural nor random. They stem from the relentless expansion of extractive frontiers, interwoven with elite interests and structural power imbalances. Mining, logging, and large-scale agricultural expansion strip forest landscapes and upper watersheds of their water-retaining capacity, leaving communities exposed to escalating risks.

This reality recently manifested in West Sumatra, Indonesia, where forests, water protection, and livelihoods are deeply intertwined. Here, the conversion of forest land for palm oil plantations, mining, and logging has had uncontrollable and devastating consequences for water regulation, forest-dependent livelihoods, and community safety. As climate extremes intensify in this and other landscapes, halting extractive expansion is more urgent than ever. Disastrous flood events underscore that land-use decisions must prioritize the protection of lives, rights, and water justice.

Social forestry - paired with wider alliance building - has proven to be a powerful approach to protect forests and the communities that depend on them. By granting local communities legal rights to manage state forest areas as hutan desa (or village forests), social forestry safeguards ecosystems, reduces flood risks, and sustains livelihoods. Livelihoods and enterprises are developed in a sustainable manner, championing non-timber forest products- and agroforestry-based approaches. IUCN NL and its Indonesian partner KKI WARSI have championed this model on Sumatra, combining community-led forest conservation and green business models with collaborative learning and strategy development. Together, these efforts defend forests and lives against extractive pressures and increasing flood risks.

Read more:

- Social forestry protects forests and supports livelihoods in Sumatra
- Locally Led Adaptation and social forestry in Indonesia

Peru, Madre de Dios forest and river © Tom Laffay

WATER AND INDIGENOUS SOLIDARITY

State-sponsored interventions like mega dam development, framed as “progress,” often legitimise certain interests while obscuring the real drivers of water problems. The developmentalist visions behind such infrastructure intersect with Indigenous territories, reducing water to a resource for consumption and control. In reality, water holds ecological, cultural, economic, and spiritual value, intrinsically linked to forests and communities.

Moving beyond extractive models requires approaches rooted in care and reciprocity. Defending water, forests, and human rights while sustaining biodiversity and community well-being is essential. Such strategies recognise water as life - not merely a commodity - and prioritize relationships that nurture ecosystems and people.
Across Forests for a Just Future landscapes, listening to and amplifying Indigenous and local communities’ voices was a cornerstone of building intergenerational water justice. Strengthening these ways of relating to rivers and forests, alongside building solidarity amid power imbalances and violence, is critical for moving towards water justice and fairer policies.

Strengthening Indigenous water and forest defenders confronted with mega dam plans

Location: The Kaliwa river in the southern Sierra Madre forest, the largest remaining rainforest in the Philippines

Partners: NTFP-EP Philippines and IUCN NL

Mega dams are often portrayed as inevitable solutions to urban water scarcity. This narrative hides deep structural injustices: water is enclosed and diverted to serve urban interests, reinforcing development models that favour cities while marginalizing rural communities.

The Kaliwa Dam in the Philippines exemplifies these dynamics. Framed as a technical fix for Manila's water shortage, it obscures the real drivers of urban scarcity - uneven consumption, systemic leakage, weak management, and deforestation that degrades watersheds. Even within urban areas, access will remain unequal, favouring the well-situated.

The dam deepens urban-rural inequalities, prioritising certain lives and lifeways over others. It threatens Indigenous lands, biodiversity, and forest ecosystems essential for long-term water security. The project would flood a forest, also ancestral domain of Indigenous people. The forest sustains their subsistence and cultural identity. Downstream, communities face greater risks of landslides and flooding. Sustainable livelihoods like farming, fishing, and ecotourism would give way to temporary construction jobs, displacement and food insecurity.

These clashing realities reveal how rivers and riverine territories hold ecological, cultural, economic, and spiritual value. They cannot be reduced to mere water resources for urban consumption. In the Sierra Madre, deforestation and watershed degradation are deeply tied to competing visions of water - between extractive models and approaches rooted in care and reciprocity.

In response to mega dam plans, Indigenous-led opposition and broader solidarity have emerged, fighting for intergenerational water justice to secure access for present and future generations. In the Philippines, resistance faces both subtle and overt violence, making solidarity vital. IUCN NL has worked alongside NTFP-EP Philippines in support of Indigenous communities and women leaders, contributing to advocacy efforts that link local leadership with engagement at multiple levels. Through partnerships and alliances, these voices strengthen efforts to defend water, forests, and human rights while sustaining biodiversity and community well-being.

Read more:

- Supporting Indigenous water defenders in the Philippines: Lessons from the Sierra Madre forest

WATER AND HUMAN RIGHTS

Water is life. But when rivers are disrupted and waters contaminated, water can also mean death. One example of this are the severe consequences of the disruptions of rivers by alluvial gold mining, driven by geopolitical pressures and the global gold rush. In river landscapes, alluvial gold mining goes hand-in-hand with mercury pollution, which erodes the health, livelihoods and rights of communities, irreversibly pollutes entire landscapes, and severely impacts sensitive biodiversity. The current gold rush often strikes hardest at those already marginalised by wider systemic injustices.

Water injustices caused by contamination and disrupted river flows represent severe human rights violations. These are not isolated cases - they mirror broader patterns of injustice created by extractive interests and economic imperatives across the landscapes covered by the Forests for a Just Future programme. Recognising these violations as water-related human rights issues is essential to demand accountability and advance water justice.

Peru, Madre de Dios forest and river © Tom Laffay

Fighting alluvial gold mining and mercury pollution

Location: Beni and Madre de Dios rivers that encompass the Madidi Pilon Lajas–Apolobamba Cotapata conservation corridor in the Northern Bolivian Amazon

Partners: CEDIB and IUCN NL

Geopolitical pressures, reflected in a global surge in demand for gold and the extractive imperative promoted by the national government, have triggered a gold rush in the Bolivian Amazon. This boom has a hidden cost: Bolivia has become the world's largest legal importer of mercury, with devastating consequences for ecosystems and people.

In one of the continent's most biodiverse regions - home to 26 Indigenous Originary Campesino Territories - gold mining and mercury contamination create severe water injustices. Across the Beni and Madre de Dios rivers, which form the Madidi–Pilon Lajas–Apolobamba–Cotapata conservation corridor, the impacts are catastrophic.

Here, water and Indigenous lives are inseparably intertwined. Alluvial gold mining and mercury contamination simultaneously destroy ecosystems and violate human rights. Drinking water has become unsafe, threatening health and survival. River disruption undermines fishing-based livelihoods, while toxic soils strain food security. Transportation routes via riverboats - essential for daily life - are obstructed. Extractive pressures also heighten violence against community members and environmental defenders. Indigenous women bear a disproportionate burden, facing severe health impacts and systemic barriers to justice.

In the face of this environmental and human rights crisis, interconnected strategies have been crucial. IUCN NL and Bolivian-based partner CEDIB have engaged in evidence generation, pursued engagement with international human rights reporting mechanisms, and foster alliance building to demand accountability and advanced water justice in Bolivia's Amazon forests.

Read more:

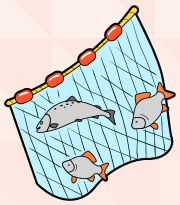
- Lessons from Bolivia's fight against mercury, gold mining, and water contamination

DRC Upemba © Paul Villaespesa / IUCN NL

WATER AND INTERSECTIONALITY

Water justice is inherently intersectional, as women, Indigenous peoples, youth, rural communities, and other groups often face disproportionate burdens and unique vulnerabilities. Water grabbing, river diversion, manufactured floods and scarcity, and pollution hit hardest those who are already marginalised, compounding existing inequalities and exposing them to health risks, livelihood loss, poverty and violence. Structural discrimination and institutional neglect create additional barriers to seeking justice.

This shows that recognising intersecting inequalities is important for crafting solutions that go beyond one-size-fits-all approaches to water sustainability and justice. it also highlights how water injustices compound along lines of gender, ethnicity, age, class, and geography, creating layered vulnerabilities that require equally layered responses. Across Forests for a Just Future landscapes, intersectional strategies emerged not only to address these multi-faceted harms, but also to build on the strength, leadership, and relational knowledge of those most affected. This demonstrates that marginalised groups are not just bearing the brunt of water injustices, but actively shaping more equitable water governance.



Supporting women's sustainable livelihoods in a degraded lake landscape

Location: Lake Edward in the Virunga landscape of North Kivu Province and Lake Upemba in Haut-Lomami in the eastern and southern Democratic Republic of Congo

Partners: Innovation for the Development and Protection of the Environment (IDPE) and IUCN NL

Lake ecosystems are the backbone of life in many regions, sustaining communities through fishing. In eastern and southern Democratic Republic of Congo - particularly around Lake Edward and Lake Upemba - both legal and illegal fishing have exceeded sustainable limits. This has depleted fish stocks, degraded fragile habitats, eroded livelihoods, deepened poverty, and accelerated food insecurity.

These water-related pressures also strain gender dynamics, as women face unique vulnerabilities and have few economic alternatives. With limited options, many women turn to illegal fish trading as a survival strategy, exposing them to harassment, violence, arrest, and exploitation.

To address these challenges, microcredit and cooperative development led by IUCN NL and IDPE have emerged as gender-responsive tools within a broader strategy. These initiatives complement efforts to curb illegal fishing while strengthening communities, promoting sustainable livelihoods, and protecting ecosystems. Economic empowerment fosters women's independence and creativity, enabling them to become agents of change. Dedicated funding to support women's business ideas and leadership is critical for combining livelihood security with environmental protection.

While microcredit and cooperative development are important enablers, lasting solutions must address the intertwined socio-ecological, historical, and conflict dynamics of these water landscapes. Structural changes remain essential to tackle the root causes of ecological degradation.

REFLECTIONS AND WAYS FORWARD

The water stories across the Forests for a Just Future landscapes and years of engagement in the Green Livelihoods Alliance by IUCN NL and partners offer valuable lessons for equitable and sustainable governance and justice at the water/ forest interface. The examples from Bolivia, Indonesia, DRC and the Philippines reveal that water problems are not uniform; while they share similarities, **they are deeply context specific.**

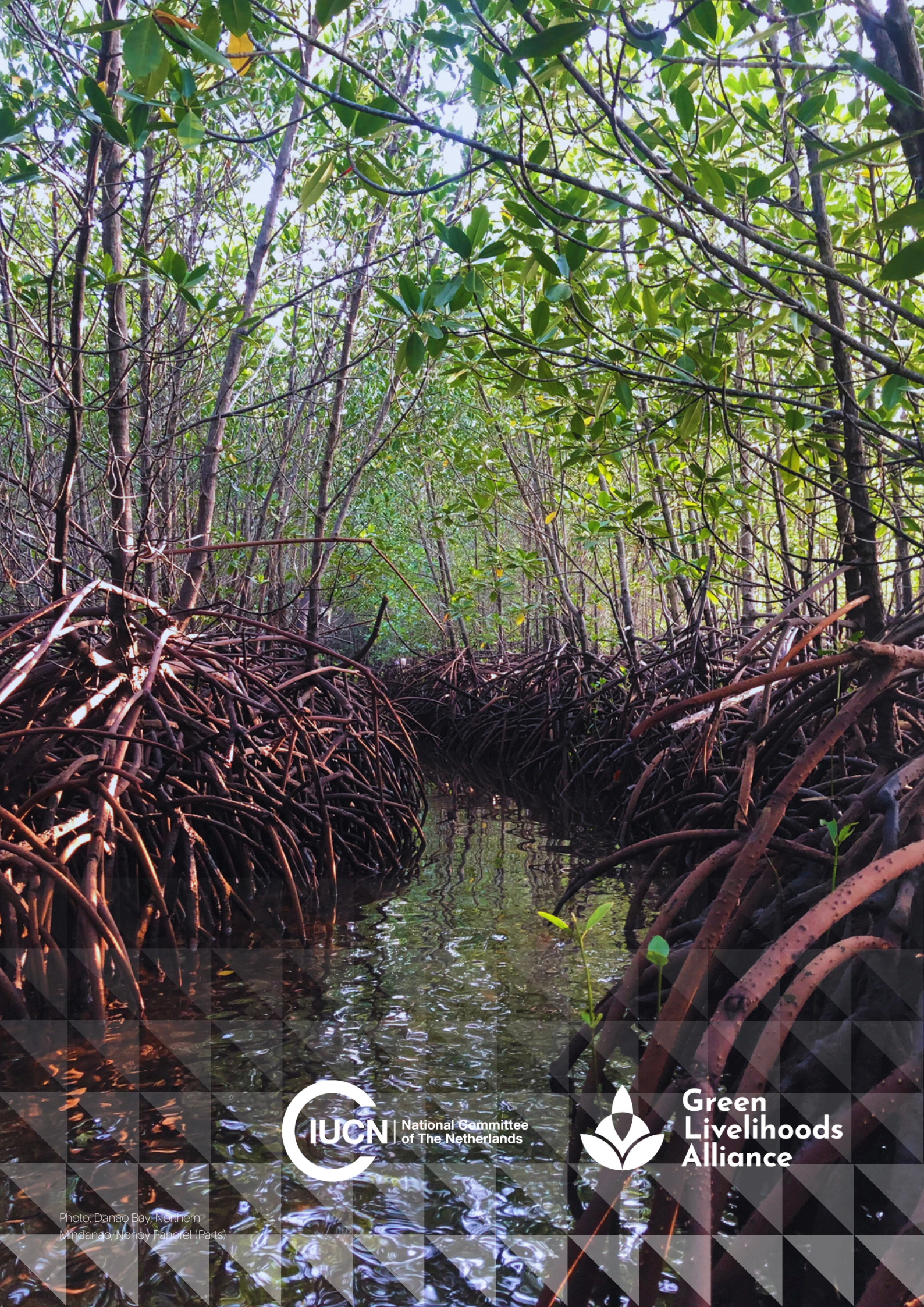
The identified multi-faceted water challenges are not natural, but fundamentally political. Water scarcity, flooding, pollution, diversion, and water-dependent livelihood loss are driven by political and economic forces, interwoven with powerful interests and the marginalisation of people in vulnerable situations. **Climate change intensifies water impacts, but the root drivers remain extractive economies, large-scale agricultural land-use change, elite capture, water grabbing, and other forms of inequitable water governance.**

Water is not just a resource. It holds many values; and is the foundation of livelihoods and social relations, cultural identity, economic activities, spiritual engagement, ecological integrity, and biodiversity. When waters are disrupted, all these aspects of (non-)human-water relations are affected, hitting the most vulnerable hardest and exposing gendered and intersectional inequalities.

This is also why technical, top-down solutions fail because they ignore intricate contextual realities and multiple values of water. **Effective responses must be locally grounded, context-specific, and rooted in care and reciprocity.**

To achieve water justice and sustainability, supporting Indigenous peoples and grassroots organisations is crucial. Their knowledge and territorial connectedness, leadership, monitoring, and advocacy ensures long-term impact. Successful strategies combine community leadership with rigorous research, legal action, policy reform, and gender-sensitive approaches. Further linking local struggles to global water and climate justice agendas is critical to contest dominant narratives and shift structural power.

The synthesis of challenges, lessons, and strategies signals an urgent need for coordinated action - across landscapes and scales - to advance water justice and fair water policies. **Future efforts must embrace intersectional approaches, strengthen alliances, and prioritise local solutions that restore ecosystems while empowering communities.** Only then can we secure water for people, forests, species, and generations to come.



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Green Livelihoods Alliance

Photo: Danao Bay, Northern Mindanao, Nonoy Panorel (Parts)