



WORKING PAPER



Fostering local resilience and enhancing equity through ecosystem-based adaptation

Learning from eight water funds in Colombia, Ecuador and Peru



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Field visit to El Pedregal, Ecuador with communities from Santa Ana, Loreto (Ecuador) and Samanga (Peru), and water fund technical teams from Colombia, Ecuador and Peru during a FFLA and CDKN facilitated peer learning workshop in July 2025. Photo credit: Dayana Lema

About this working paper

This working paper is based on a study conducted in 2022 to help Fundación Futuro Latinoamericano (FFLA) define its work for the third phase under the Climate and Development Knowledge Network (CDKN) (2022-2027). FFLA leads CDKN's work in Latin America.

Who should read this paper

This working paper is intended to support water funds and other institutions implementing EbA approaches in better including and reporting on key social and environmental measures necessary to enhance water governance, ensuring access, use and permanence of water in both quality and quantity. The recommendations outlined in this brief aim to inform a better understanding of how these innovative, long-term strategies can enhance their multiple co-benefits and attract potential donors, investors and practitioners to scale the impact of water funds. More deliberately embedding an EbA and gender equity and social inclusion (GESI) perspective in water fund operations provides a catalyst to deepen their role as localised, multi-actor models for water, climate resilience and well-being for people and the planet.

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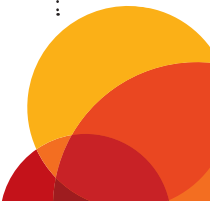
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Abbreviations

CDKN	Climate and Development Knowledge Network
EbA	Ecosystem-based Adaptation
FFLA	Fundación Futuro Latinoamericano
GESI	Gender Equity and Social Inclusion
NbS	Nature-based Solutions
NBSAPs	National Biodiversity Strategies and Action Plans
NDCs	Nationally Determined Contributions
SDGs	Sustainable Development Goals

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Executive summary

Water is the foundation of human well-being, sustaining all facets of life. However, current water governance mechanisms face challenges such as sectoral silos, unsustainable development, insufficient regulations and resource limitations, all exacerbated by climate change. Water funds aim to address these challenges by protecting water sources, improving access and ensuring sustainable water management for communities and ecosystems. They are a promising mechanism for supporting financial and multi-stakeholder governance, bringing together diverse groups of actors, such as downstream urban users, upstream farmers, community members and conservation authorities who share a common goal of protecting water sources through integrated water resource management.

Considering the growing urgency to adapt to climate change impacts, this working paper presents findings from an assessment of ecosystem-based adaptation (EbA) measures implemented in eight water funds across Colombia, Ecuador, and Peru. The assessment examines how these measures align with core EbA principles, elements and criteria linked to globally-accepted frameworks¹. The objective is to strengthen the sustainability of the water funds and to protect the high Andean ecosystems that supply water to more than 22.8 million inhabitants in Colombia, Ecuador and Peru². Based on the findings, recommendations were identified to enhance the implementation of EbA. These recommendations aim to improve the integration of gender equity and social inclusion (GESI) considerations, broaden the scope of EbA initiatives and amplify their impact to strengthen social-ecological resilience.

EbA has **three core elements and seven principles** that define it (highlighted in Figure 2 on page 9).

The UN CBD acknowledges three core elements of EbA which include: 1) helping people adapt to climate change by 2) harnessing biodiversity and ecosystem services, and thus 3) contributing to an overall adaptation strategy³.

Building on a need for articulating how the core elements can be implemented, the International Union for Conservation of Nature outlines several key EbA principles⁴, including that they should:

1. Promote a multisectoral approach.
2. Operate at multiple geographic scales.
3. Integrate flexible management structures that allow for adaptation.
4. Minimise trade-offs and maximise benefits aligned with development and conservation objectives to avoid unwanted social and environmental impacts.
5. Use the best scientific and local knowledge available and generate and disseminate knowledge.
6. Promote ecosystem resilience using nature-based solutions that create human benefits, especially for the most vulnerable.
7. Be participatory, transparent, accountable and culturally appropriate, while actively considering equity and gender.

Five main findings emerged from the study:

1. The water funds are implementing EbA.
2. Water funds are currently informed by local knowledge mobilised through participatory and co-creation processes, with limited inclusion of measures informed by climate science.
3. The conservation, restoration, and sustainable-use measures analysed are effective in supporting ecosystem resilience and climate change adaptation. While some integrate social and gender perspectives, overall, they lack an intentional focus on the social dimensions of resilience, especially for those most vulnerable to climate change.

4. As water funds are multi-actor and multi-sector governance schemes, they align with the principles of an EbA approach. However, they lack clear linkages with broader adaptation strategies and policy frameworks.
5. There is insufficient focus on monitoring, evaluation and learning, which could help improve strategies and highlight the many environmental and social co-benefits of water fund activities, such as increased biodiversity and associated livelihood opportunities, especially for groups experiencing marginalisation.

Five recommendations were proposed - presented in their suggested order of implementation - to strengthen EbA approaches across the water funds:

1. Undertake gender, social and climate vulnerability analyses to inform needs and improve measures before, during and after an intervention.
2. Identify and co-design integrated EbA measures based on a comprehensive understanding of the local dynamics and social-ecological contexts in the intervention area, in addition to available research and evidence.
3. Strengthen capacities for adaptive monitoring, evaluation and learning to improve the visibility and reach of water fund strategies.
4. Enhance the link between EbA measures and broader adaptation strategies across scales.
5. Mobilise new funding to expand the scope and impact of GESI-integrated EbA measures.



Field visit in Piura, Peru during FORASAN's EbA and GESI workshop. Photo credit: FFLA and CDKN

Introduction

Ecosystem-based approaches for water conservation, such as wetland and riparian zone restoration, watershed management, and agroecological practices are being implemented worldwide but continue to face governance-related challenges. Current water governance is impeded by siloed sectors and stakeholders, weak institutions that don't include key actors, unsustainable development, poor regulations, and lack of funding for conservation. All of these are compounded by climate change.

In Latin America, the water fund model is one such approach to address these challenges. Water funds are financial and multi-stakeholder governance mechanisms that bring together a diverse group of actors with the common goal of protecting water sources through integrated water resource management. They can include downstream urban users, upstream farmers, community members and conservation authorities. Water funds are often long-term initiatives, with some having a planned lifespan of 80 years, such as FONAG (Fondo para la Protección del Agua) in Quito, Ecuador, which was established in 2000. Various water users, including water utilities, hydroelectric companies and public sector entities, invest resources in conserving water, particularly in recharge areas, through maintenance and improvement initiatives. The administrative entity, such as a trust, has the responsibility to ensure the adequate and accountable use of the funds.^{5,6} These resources, often complemented with others from international cooperation, are put towards activities such as conservation, restoration and sustainable use, in addition to education and awareness initiatives, research, surveillance and monitoring.

This working paper shares insights from a study conducted with eight water funds in Colombia (Cucuta, Medellin and Manizales), Ecuador (Cuenca, Quito and Tungurahua), and Peru (Lima and Piura) (Figure 1). It explores how water funds, whether explicitly or implicitly, implement EbA by utilising biodiversity and ecosystem services to help people adapt to climate change, and how these approaches could be strengthened.

Although water funds tend not to explicitly focus on climate change, when their measures were analysed in relation to EbA core elements and principles (Figure 2), most were found to align with an EbA approach. Water fund activities, by nature, have an ecosystem focus

Figure 1: The intervention areas of the eight water funds included in the study



Credit: Henry Quiroz, FFLA

and promote conservation, restoration and sustainable use activities grounded in the local context and are aimed at protecting water sources to ensure water quantity and quality. Working more intentionally with the core elements of an EbA approach can encourage more relevant and holistic interventions by focusing on social and gender equity and resilience, particularly among those facing interconnected socioeconomic and environmental challenges. Aligning activities with an EbA approach can strengthen connections to the broader adaptation policy framework, while improving monitoring, learning and visibility to enhance the impact and reach of water fund measures.

The paper is structured as follows: first, it provides an overview of the threats to fresh water, highlighting the need for integrated approaches. Second, it introduces the water funds selected to participate in the study, providing some background information on their functioning. Third, it presents the findings from the analysis of EbA in existing water funds. Finally, it offers recommendations to promote actions grounded in an ecosystem approach, emphasising water and biodiversity conservation, GESI and the resilience of both ecosystems and communities in response to climate change.

Threats to fresh water and the need for integrated approaches

Fresh water sustains all life and is essential for human well-being, underpinning livelihoods and economic sectors. Its quality and availability are threatened by increased demand from a growing global population, unsustainable consumption, inefficient management, climate change and pollution.⁷ The degradation of ecosystems has serious negative implications for water availability, affecting both current and future generations, and climate change exacerbates these pressures.^{8,9} Increasingly frequent and severe droughts, floods and storms present threats to the water supply, with negative socioeconomic and health impacts, particularly among the most vulnerable populations.^{10,11} Many communities around the world experience water stress, and lower-income populations are especially susceptible to health burdens caused by water pollution.¹²

Addressing these interconnected challenges requires integrated approaches that counter traditional, siloed approaches, which often lead to misaligned policies, unintended trade-offs and missed opportunities for synergistic solutions.¹³ Integrated approaches see policymakers and stakeholders working collaboratively to co-develop solutions that are equitable, sustainable and resilient, ensuring that actions in one sector positively reinforce outcomes in others. One such approach is an ecosystem approach, which helps address the interconnected problems associated with climate change, environmental degradation and inequality.^{14,15} There is increasing recognition that human resilience depends on the integrity of ecosystems. This presents the need to work simultaneously on overlapping goals, such as climate adaptation, environmental conservation and human well-being.^{16,17} Nature-based solutions (NbS) and EbA respond to this need, providing comprehensive management strategies for addressing complex and intertwined challenges, as well as opportunities.

While NbS is a broader term encompassing EbA and other approaches, both concepts aim to conserve, restore and sustainably manage ecosystems, creating multiple benefits for society and nature. While these concepts have emerged in scientific literature over the last decade, the dependence of human well-being on ecosystems and the fundamental interconnections (humans are, after all, part of nature) have been central to the worldview of many Indigenous and local communities around the world.¹⁸

Selected water funds

Eight water funds in Colombia, Ecuador and Peru were analysed to determine whether they are implementing EbA measures and how these could be strengthened (see conceptual approach and methodology in the Appendix). They are:

Colombia:

- Alianza BioCuenca (Cucuta)¹⁹
- Corporación Cuenca Verde (Medellin)²⁰
- Corporación Vivo Cuenca (Manizales)²¹

Ecuador:

- Fondo de la Cuenca del Paute – FONAPA (Cuenca)²²
- Fondo para la Protección del Agua – FONAG (Quito)²³
- Fondo de Protección de Páramos y Lucha contra la Pobreza de Tungurahua – FMPLPT (Tungurahua)²⁴

Peru:

- Fondo de Agua para Lima y Callao – AQUAFONDO (Lima)²⁵
- Fondo Regional del Agua – FORASAN (Piura)²⁶



Group exercise during Vivo Cuenca and FONAG's exchange of experiences in Colombia among community members and technical teams participating in EbA and GESI projects. Photo credit: FFLA and CDKN

Most of the measures the water funds implement are grouped under the theme of management of conservation areas, restoration and sustainable use activities through incentivising communities and private landowners. In this strategy, areas are allocated for conservation and restoration (including active and natural restoration of wetlands, *páramos*, forests and sandbanks uncovered by erosion) through conservation agreements (written or verbal) or management plans. Incentives can be monetary or sustainable use activities. The latter can also exist as a strategy in and of itself without an incentives scheme.

Examples of sustainable use activities include:

- Community food gardens
- Tourism/ecotourism
- Community nurseries/greenhouses for the cultivation of native plants for restoration of the *páramos* (high-mountain ecosystems mainly found in the northern Andes of South America, particularly Colombia, Ecuador, Peru and Venezuela)
- Livestock/improved production and efficiency in silvopasture systems
- Micro-livestock, fish farming and beekeeping
- Agroforestry systems (food forests, sustainable coffee, forest gardening, silviculture)
- Value-added products (ice cream, yogurt, cheese, flour, jam)

Some water funds also support the declaration of protected areas and related strategies to create conservation areas, such as through municipal ordinances or direct land purchases.

Water funds also deploy several crosscutting enabling activities that complement the physical interventions including: research, monitoring, surveillance and control, capacity strengthening, education and awareness, and gender equity strategies.



Exchange of experiences in Colombia among community members and technical teams from Vivo Cuenca and FONAG's EbA and GESI projects. Photo credit: FFLA and CDKN

Figure 2: Core elements and principles of EbA



Findings from the analysis of EbA measures in the eight water funds

Five main findings emerged from the data collection process regarding the water funds in relation to the EbA core elements and principles as outlined in Figure 2.

1. The water funds are implementing EbA.

As mentioned above, most of the water funds do not explicitly focus on climate adaptation and EbA. However, to varying degrees, they are all implementing EbA measures, whether intentionally or not, as their approaches and actions often align with EbA core elements and principles (Figure 2). All physical water fund interventions, such as the conservation and restoration of ecosystems and/or sustainable use activities, can essentially be considered EbA measures. By their nature, water funds have an ecosystem approach, promoting the protection of water sources to ensure water quantity and quality through interventions that conserve or restore biodiversity and key ecosystem services, such as flood regulation, groundwater infiltration, riverbank stabilisation and water filtration. Their measures ensure that water of sufficient quality and quantity is available to surrounding populations, which is key to climate adaptation and resilience.

2. Water funds are currently informed by local knowledge mobilised through participatory and co-creation processes, with limited inclusion of measures informed by climate science.

Few water funds considered climate science findings, such as climate vulnerability analyses of the water basin and national studies on climate projections, when planning activities. While EbA promotes basing actions on the latest scientific knowledge, in many of the contexts explored, some representatives of the water funds questioned the utility of climate data for a watershed, and opted instead for information mobilised from local knowledge holders. They reasoned that available data and evidence are often not at the appropriate scale or that they miss specific local features.

Thus, a notable strength of the strategies implemented by the water funds, especially in relation to incentives or conservation agreements and sustainable use activities, is that they are developed in a participatory manner. Local knowledge is valued by water funds, which promote community empowerment through the co-creation of proposals for water fund interventions. Many water fund activities are designed within the communities themselves, where community members can identify their needs and prioritise activities.

While in several cases there was no specific process for gathering information on climate change vulnerabilities, some water funds indicated that the participatory processes consider community observations related to climate change and associated impacts. However, these processes could be strengthened to ensure climate vulnerability information is tracked over time. The intentional effort that water funds make to include community concerns, knowledge and priorities aligns, in part, with EbA principles related to participatory, transparent, accountable and culturally appropriate approaches, as well as the use of local knowledge.

3. The conservation, restoration, and sustainable-use measures analysed are effective in supporting ecosystem resilience and climate change adaptation. While some integrate social and gender perspectives, overall, they lack an intentional focus on the social dimensions of resilience, especially for those most vulnerable to climate change.

The actions of the evaluated water funds address the first element outlined in EbA measures: to help people adapt to climate change. This is seen in the fact that ensuring the protection of water sources is the principal goal of most of the water funds. Access to water is strongly linked to climate adaptation and reduces the social vulnerability of both local rural communities and urban populations that depend on this water. Although water funds can promote water and biodiversity conservation and ecosystem resilience (typically at the watershed level), this EbA principle seeks to promote resilience in a manner that also generates social benefits, especially for the most vulnerable.

Water fund strategies and the resulting activities they support have differing levels of social benefits. One of the most comprehensive strategies for achieving multiple benefits is working with communities and private landowners through conservation agreements and/or sustainable use activities. The incentives and conservation agreements implemented by the water funds serve as management tools that can be adapted to the realities of different ecosystems and local contexts because they do not propose a single way of working.

They provide opportunities to co-design strategies that incorporate technical support for communities. This enables a higher rate of success in terms of an activity's social benefits, profitability and sustainability, while ensuring benefits to the environment. Measures that include a sustainable use approach (i.e., those that create opportunities for sustainable livelihood activities) were identified as providing greater social benefits, with some water funds promoting a stronger gender perspective than others.

Restoration measures (such as replanting native vegetation in degraded areas) have observable environmental benefits, such as climate regulation and soil stabilisation. While these come at a minimal cost, social, economic and gender factors need to be deliberately accounted for to ensure strategies are holistic. For example, greater attention needs to be given to how women, including those who are elderly and young, are included in or impacted by interventions.

Additionally, when restoration measures were analysed, it was found that they provided limited perceived or reported livelihood benefits to local communities. However, these can be addressed in various ways. For example, well-managed plant nurseries, as well as providing temperature regulation for seedlings, have been shown to offer sustainable sources of income to local communities, such as women's groups that sell plants for water funds and other entities.

The purchase of land or the declaration of protected areas are sustainable but costly strategies, with limited benefits for local communities, in their current design. These measures can be time-consuming, with challenges related to finding appropriate intervention areas that enable meeting conservation and restoration goals for the protection of water sources. Depending on maintenance and management, protected areas and land purchases (from large-scale private owners) can ensure long-term environmental benefits as these areas are dedicated to conservation, but unless they are complemented with sustainable use activities with surrounding communities, they are unlikely to promote human well-being.

While some water funds strongly emphasise gender and social equity, most need to develop more holistic measures to fully meet the EbA principle of considering equity and gender. Conscious attention must be paid to gender-responsive and transformative approaches related to roles, participation and power dynamics of a diverse range of women and men. Differences related to age, ethnicity and socioeconomic conditions, among other factors, must be considered.

Moreover, none of the measures analysed had a particular focus on the social dimensions of resilience of those most vulnerable to climate impacts. The water funds generally do not analyse climate vulnerability or gender and social roles, to identify the most climate-affected communities and prioritise sites for implementation.



Water Fund EbA and GESI inception workshop exercise. Photo credit: FFLA and FORASAN



EbA and GESI inception workshop mapping exercise. Photo credit: FFLA and FONAG

4. As water funds are multi-actor and multi-sector governance schemes, they align with the principles of an EbA approach. However, they lack clear linkages with broader adaptation strategies and policy frameworks.

The water funds are governance mechanisms that function via multi-sector schemes, bringing together a diverse group of actors. Thus, they align with the first and third principles of EbA, which centre on multi-sectoral engagement and the integration of flexible management structures that allow for adaptation. They are financial mechanisms that bring together various stakeholders (public, private and civil society) to invest in sustainable watershed management and water availability, navigating upstream and downstream water beneficiaries and users. They work by channelling funds towards projects that protect water sources, improve water quality and ensure reliable water supplies for communities and ecosystems. They are supported by governance schemes that already exist in the relevant watershed and/or by diverse types of working groups and/or participation bodies. They promote inter-institutional articulation and place special emphasis on strengthening water governance. Water funds also seek alliances with outside organisations, private companies and academic institutions. Several apply co-management strategies between the water fund and local communities or landowners. These multi-sectoral approaches align with this EbA principle, as well as the principle of flexible management structures that allow for adaptation.

While the water fund governance schemes respond well to the EbA approach, the water funds seldom employ an overarching adaptation strategy or promote linkages to broader policy frameworks. Several water funds conveyed that links to varying levels of environmental governance need to be improved. Many implement actions that help their countries meet their Sustainable Development Goals (SDGs), Nationally Determined Contributions (NDCs), National Biodiversity Strategies and Action Plans (NBSAPs), as well as other national and international frameworks. However, knowledge management and advocacy are not being used to highlight these contributions and water funds are not being positioned as tools for environmental and social planning, limiting their connection to public policy.



Field visit in Colombia among community members and technical teams participating in Vivo Cuenca and FONAG's EbA and GESI projects. Photo credit: FFLA and CDKN

5. There is insufficient focus on monitoring, evaluation and learning to improve strategies and highlight the many environmental and social co-benefits of water fund activities, such as increased biodiversity and associated livelihood opportunities, especially for groups experiencing marginalisation.

While monitoring, evaluation and learning are necessary to adapt and improve water fund measures and to enable knowledge management and visibility of their impacts, the results of their activities are not always measured. In turn, evidence of their impacts is lacking. Some water funds are more advanced than others in terms of monitoring their environmental impacts (such as the number of hectares conserved), and most are only just exploring how to monitor social and gender impacts. Currently, the water funds lack EbA-aligned monitoring systems, especially in relation to the use of social indicators to track the effectiveness of comprehensive EbA approaches towards reducing climate vulnerability and promoting equality and well-being. As a result, there is limited ability to generate and disseminate information, evidence and learning related to what is or is not working well, and how to improve the measures.

Moreover, water funds face funding gaps and ongoing challenges related to sustaining adequate support from various sources, hindering their ability to strengthen and increase the scope of their environmental and social impacts. Monitoring data serves as a basis for communication strategies, that is, approaches to improve communications towards their water users and current and potential funders. Improved communications will give visibility to the multiple co-benefits generated from water fund interventions, not only in terms of access to water, but also related to carbon, biodiversity, equality, resilience and human well-being.

Recommendations

In response to the five key findings outlined above, the following five recommendations are presented here in sequential order, though some recommendations may be implemented simultaneously:

1. Undertake gender, social and climate vulnerability analyses to inform needs and improve measures before, during and after an intervention.

It is recommended that water funds promote a more explicit focus on social and environmental vulnerabilities in their measures and undertake gender, social and climate vulnerability analyses in an integrated and participatory manner with local actors. The aim is to identify existing inequalities (such as women and youth having less of a voice in governance and decision-making, or differences in access to livelihoods opportunities) caused by several potential factors (such as multiple roles and responsibilities, time constraints, social perceptions, machismo, etc.) and vulnerabilities resulting from climate change as well as other threats (such as deforestation and mining). An analysis should be conducted at the most localised scale possible, considering information from local actors on the environment, climate change, demographics, and cultural and gender perceptions. If necessary, social, gender and climate-related information from published studies can be used to complement the context. The most climate-vulnerable actors should be identified, accounting for differences in gender, age, socioeconomic conditions, ethnicity, geographic region, disability and other relevant factors. These analyses inform needs and can then be used to strengthen capacity for adaptive monitoring, evaluation and learning (discussed in recommendation four).

2. Identify and co-design integrated EbA measures based on a comprehensive understanding of the local dynamics and social-ecological contexts in the intervention area, as well as available research and evidence.

Strategies should be informed by a comprehensive understanding of local environmental and climate threats, as well as social and gender inequalities identified through vulnerability, gender and social analyses. Specific emphasis should be placed on understanding and addressing the needs of those most vulnerable to climate change, while simultaneously recognising these actors as important agents of change who should be actively involved in the design of strategies. To this end, the leadership and knowledge of women and diverse actors should be highlighted and valued.

Ideally, water funds should have clear and explicit policies and/or strategies to ensure the inclusion of GESI perspectives, so that such an approach is not dependent on the interest and expertise of certain technicians and staff. To achieve measures that respond to and transform inequitable relations, it is important to integrate this perspective into education, sensitisation and capacity strengthening exercises surrounding conservation, restoration and sustainable use activities grounded in local dynamics.

Formalised strategies to reduce identified inequalities and vulnerabilities should be developed using a co-creation process with local actors. Spaces for co-creation, where activities are designed and implemented by a diversity of actors from local communities and project technicians, can help address several problems simultaneously. For example, a project involving the creation or improvement of an irrigation system to boost crop production could be designed in a way that also reduces the workload of women and men. When project technicians and local community members jointly develop a strategy, it responds to a wider range of needs and interests, incorporating a more diverse range of knowledge and experiences, and leads to more sustainable outcomes.

3. Strengthen capacities for adaptive monitoring, evaluation and learning to improve the visibility and reach of water fund strategies.

We recommend developing a monitoring, evaluation and learning framework that reflects the integrated nature of water fund measures and their impacts. The vulnerability and GESI analysis should inform this process. If possible, water funds should develop the framework collaboratively to harmonise indicators and their measurements, such as the number of hectares of land under conservation and restoration, and changes in gender perceptions. While it would be difficult for water funds to share all the same indicators, they could agree on defined indicators for common activities and strategies.

Impact monitoring provides the basis for how water funds can effectively communicate the benefits of their investments to various stakeholders. Testimonial videos or stories expressing the voices of diverse actors from local communities improve visibility and reach. Monitoring and evaluation also serve as an opportunity to pause and reflect, analyse learnings and continuously improve the effectiveness of strategies and processes.

It is important to showcase the environmental and social impacts of water fund measures to a variety of different actors, including government, civil society, constituents, local communities, potential donors and the private sector. Demonstrating the relevance of the water funds' work can help create new strategic alliances, achieve public and private finance opportunities and potentially harness new funding from donors.

4. Enhance the link between EbA measures and broader adaptation strategies across scales.

Several of the water funds fail to clearly link the measures they implement to national frameworks that address issues of climate change and biodiversity loss, such as the NDCs, SDGs and NBSAPs. If EbA is anchored in policies and harnesses the best available science and experience, it can guide and coordinate adaptation efforts to meet national and global commitments and goals.²⁷ A water fund can help a country meet its international commitments related to adaptation and ecosystems at the national and sub-national levels. In many ways, the water funds analysed are already doing this, but they can make their contributions more explicit and visible through monitoring, communication and linking their impacts to these policy frameworks. These actions will become increasingly relevant if water funds can access additional funding to scale their measures in territories.



Field visit to El Pedregal, Ecuador with communities from Santa Ana, Loreto (Ecuador) and Samanga (Peru), and water fund technical teams from Colombia, Ecuador and Peru, in the framework of the "CDKN LATAM knowledge to action workshop". Photo credit: Dayana Lema

5. Mobilise new funding to expand the scope and impact of GESI-integrated EbA measures.

An EbA perspective provides an opportunity to promote more holistic results through strategies, measures and actions that focus on water conservation and climate resilience, while promoting socio-economic (including gender) and environmental (including biodiversity and mitigation) benefits. With improved monitoring to make visible the impact of their strategies and activities, water funds can complement funding from international cooperation as well as public and private sources, including philanthropic, corporate social responsibility and impact investment. Water funds can experiment with financial and funding schemes that enhance access to longer-term and more stable funding, such as grant periods of more than 10 years that allow for learning and adaptive management. As water funds can be 80-year mechanisms, they are in a unique position to carry out long-term strategies and continue to experiment with mixed funding and innovate their activities. With more predictable funding, the water funds can work towards co-designing new, integrated and innovative measures that present multiple benefits. They could also consider collaborating on a joint project proposal among them and their different countries. Experiences with these initiatives should be shared at the community level, among water funds, and with wider audiences to promote continued learning and improvement.

The water funds analysed here have the capacity to increase their reach within their respective watersheds. In collaboration with local communities and other actors, they can help increase resilience over the long term. Water funds receive financial contributions from water users who share a common challenge related to water, often from the public and private sectors as well as civil society actors, who become the fund's constituents. However, these resources are often insufficient to cover water fund operations, and there is a need to obtain additional funding from the public and private sectors, as well as international cooperation, to complement existing strategies and create new ones. For example, they can work with the private sector to compensate for water footprints. Harnessing new resources will enable them to increase the scope and impact of their measures.



Exchange of experience in Colombia among community members and technical teams from Cuenca Verde and Aquafondo's EbA and GESI projects. Photo credit: FFLA and CDKN



Community members participating in FONAG's EbA and GESI inception workshop. Photo credit: FFLA and CDKN

Final reflections

The findings from this study serve as a starting point for water funds, based on their current implementation of EbA. Orienting the actions of the water funds through the lens of EbA is an opportunity to consolidate their role in the field as promoters of integrated, local strategies for human and planetary well-being. This ecosystem-based approach not only encourages the protection of water sources through conservation, restoration and sustainable use activities, but also promotes biodiversity, climate resilience and GESI, focusing on increasing the resilience of the most vulnerable populations. Water funds are ideal mechanisms for promoting EbA and GESI. By incorporating holistic approaches to existing measures and designing new innovative ones, water funds can become catalysts for advancing inclusive, resilient, and sustainable water governance across diverse socio-ecological landscapes.

Endnotes

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Appendix: Conceptual approach and methodology

The conceptual basis for this study is the EbA evaluation framework and its quality standards, developed by Friends of Ecosystem-based Adaptation (FEBA) in 2017. The framework is based on the three EbA elements highlighted in the Convention on Biological Diversity definition and contains two criteria under element A, one under element B and two under element C as shown in Table 1:

Table 1: EbA elements and criteria

Element A – “EbA helps people adapt to climate change”	1) Reduces social and environmental vulnerabilities 2) Generates societal benefits in the context of climate change adaptation
Element B – “Making active use of biodiversity and ecosystem services”	3) Restores, maintains or improves ecosystem health
Element C – “Part of an overall adaptation strategy”	4) Is supported by policies at multiple levels 5) Supports equitable governance and enhances capacities

Based on these elements and criteria, 23 standards were identified for the framework, aimed at ensuring that measures are effective. For the present analysis, the framework was customised to incorporate adjustments from a version adapted for water funds (González, n.d.) as well as to strengthen some of the language considering the seven EbA principles (IUCN, 2014), in particular gender and social considerations. These principles are:

1. Promote a multisectoral approach.
2. Operate at multiple geographic scales.
3. Integrate flexible management structures that allow for adaptation.
4. Minimise trade-offs and maximise benefits aligned with development and conservation objectives to avoid unwanted social and environmental impacts.
5. Use the best scientific and local knowledge available and generate and disseminate knowledge.
6. Promote ecosystem resilience using nature-based solutions that create human benefits, especially for the most vulnerable.
7. Be participatory, transparent, accountable and culturally appropriate, while actively considering equity and gender.

The adapted framework applied in this study contains 23 standards grouped by criteria (see Table 2 in the Appendix).

Table 2: Customised standards for each EbA criterion

Under criterion 1: Reduces social and environmental vulnerabilities	
1.1.	Use of climate information/climate change projections/scenarios
1.2.	Use of local and traditional knowledge from a diversity of women and men to identify vulnerabilities
1.3.	Integrates findings from vulnerability/climate change risk assessments
1.4.	Reduces environmental vulnerability at an adequate geographic scale for the water fund
1.5.	Reduces social vulnerability (with a gender perspective)
1.6.	Integrates findings from social and gender analyses to understand existing climate vulnerabilities and inequalities and the best ways to address them
Under criterion 2: Generates societal benefits in the context of climate change adaptation	
2.1	Quantity and quality of societal benefits for a diversity of men and women, especially those belonging to the most climate-vulnerable/climate-affected populations, compared to other adaptation options
2.2	Timeframe of demonstrated social benefits
2.3	Economic feasibility and advantages compared to other adaptation options
2.4	Number of community members and other relevant stakeholders, including a diversity of women and men, especially those belonging to the most climate-vulnerable/climate-affected populations
2.5	Distribution of benefits among a diversity of men and women from different social groups, especially those most climate-vulnerable/climate-affected
Under criterion 3: Restores, maintains or improves ecosystem health	
3.1	Geographic scale of management is appropriate for the water fund to be effective in EbA
3.2	Prioritisation of key ecosystem services considering a diversity of values
3.3	Monitoring and evaluation of ecosystem service health and stability using EbA
3.4	Protection and management area coverage, restoration and/or sustainable management
3.5	Level of co-management for the interventions (government, communities, private sector) and participation of a diversity of women and men from different social groups
Under criterion 4: Is supported by policies at multiple levels	
4.1	Compatibility with policy and legal frameworks and planning/management capacity and support of actors involved in these areas at different levels
4.2	Multi-actor and multi-sector engagement and commitment (communities, civil society, private sector), including men and women from different social groups

Under criterion 5: Supports equitable governance and enhances capacities

- 5.1 Accountability and group representation of multiple actors
- 5.2 Consideration of gender balance and empowerment
- 5.3 Incorporation of Indigenous and local knowledge and institutions represented by a diversity of men and women
- 5.4 Long-term capacity to ensure sustainable governance
- 5.5 Improvement in the knowledge and capacities of multiple actors (women and men from communities, local and/or regional authorities)

To identify EbA measures, a bibliographical review was conducted of key water fund documents, including strategic plans. Virtual and in-person interviews were conducted with technical secretaries, directors and technical teams from the eight water funds to validate the measures in a participatory manner and gain an understanding of the context of each water fund. Field visits were also undertaken with some of the water funds to speak with diverse women and men from local and Indigenous communities participating in water fund activities.

As the literature does not clearly define a classification system nor a minimum threshold to determine what qualifies as an EbA measure, a scoring system was used that could be equally applied to each of the five EbA criteria in the framework matrix. Different representatives from water funds rated the identified measures on a continuum from strong to weak for each standard, on a scale of 1–5. Each standard and criterion was scored and these scores were averaged. If the score fell in the middle of the scale or above, the measure was considered EbA. In this manner, between one and four EbA measures were identified for each water fund. During the interviews, representatives of the water funds provided inputs on why they considered certain measures responded more to the EbA criteria than others. This was also captured as part of the analysis.

About CDKN

The Climate and Development Knowledge Network (CDKN) is a Southern-led global programme, established in 2010 to enhance the well-being of those most affected by climate change – especially women, girls and marginalised groups – through transformative climate action. Its current five-year phase (2022–2027) supports equitable, locally-led, financed and ecosystem-based climate responses that mobilise the capacity and leadership of local actors, including community organisations, governments, researchers and civil society groups, across the Global South. CDKN is managed by SouthSouthNorth, in partnership with Fundación Futuro Latinoamericano (FFLA) and ICLEI South Asia, and co-funded by the Ministry of Foreign Affairs of the Netherlands and Canada's International Development Research Centre.

About FFLA

Fundación Futuro Latinoamericano (FFLA) is a Southern-based NGO with over 30 years of experience. Its main aim is to facilitate and promote the management of sustainable territories in Latin America through constructive dialogue, good governance and the strengthening of citizen and institutional capacities. FFLA works across Latin America on initiatives focused on biodiversity conservation, climate mitigation, adaptation and resilience, nature-based solutions, clean and renewable energy and water management. These issues are addressed holistically, with a gender equality and social inclusion perspective, and through co-creation and knowledge-brokering methodologies grounded in local contexts, knowledge and action. Since 2010, FFLA has acted as the Regional Coordinator for Latin America of the Climate and Development Knowledge Network (CDKN).

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