Protection and conservation of freshwater resources

Join For Water

How to establish sustainable solutions for people and nature?

Join For Water strives to protect freshwater resources to ensure long-term access to water for people and nature.

To this end, it is essential to find a balance between environmental protection and ensuring human rights and needs for natural resources.

Yet, no one-size-fits-all solution exists to find that balance. Join For Water sets out to explore innovative solutions for this challenge in different contexts.

Context

Across the planet, communities experience water challenges such as water pollution, water scarcity, flooding, ecosystem degradation, and unequal water distribution. These challenges show that we cannot take water availability for granted. The demand for water continues to grow, yet we are approaching the limits of the carrying capacity of the natural system on which we depend. The climate crisis threatens to exacerbate these challenges.

At Join For Water, we have long known that water is essential for development. We have witnessed how access to water makes a big difference when it comes to health, education, improving the position of women and young people and reducing poverty. Join For Water, together with many partners, have years of experience in developing approaches to sustainably manage drinking water systems. These efforts have always aimed at explicitly linking the management of the system itself with the needs of its users.

Since 2022, Join For Water sets out to support partner organisations in doing a similar effort to help sustainably protect and conserve freshwater resources. We set up pilot-projects for water resource conservation and to improve access to water in all its dimensions. These actions are combined with targeted knowledge building to generate an evidence-base and strengthen the capacity of communities to defend their right to water, and of governments to develop appropriate water policies.

Kim Vercruysse

One goal, 5 key questions, 8 pilot projects

Join For Water aims to establish sustainable mechanisms to support long-term protection and conservation of freshwater resources, with explicit consideration for people and nature. To this end, five interlinked questions are addressed via 8 pilot projects across the world.

Financial

Where and how can we establish mechanisms for communities and/or other actors to contribute financially to protection and conservation?

Policies

How can policies be used and/or transformed to ensure effective ecosystem conservation?

Ecology

How and when is a water resource sufficiently protected; what are the most important parameters?

Technological

Under what conditions can we apply innovative agricultural techniques as an incentive to protect ecosystems?

Social

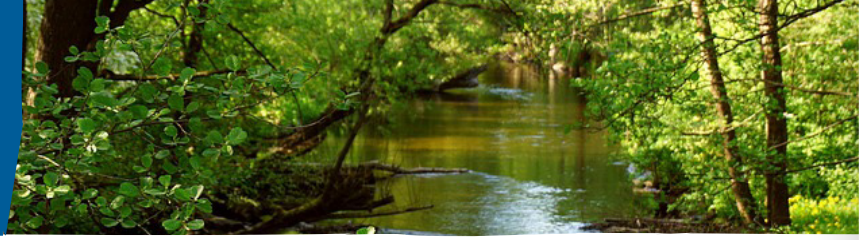
What are the main social, economic, and gender barriers to the long-term and sustainable conservation of ecosystems?

The way forward

These key questions are addressed by setting up a community of practice on protection and conservation of freshwater resources in all countries were Join For Water works. In total, 8 context-specific themes were identified based on needs and existing expertise in each country. Through regular knowledge exchanges across Join For Water and partner organisations, we systematically collect and analyse information and lessons learned.

We share our findings with the global community, so that our experiences can be used beyond our projects by actors in the development and environmental sector, policy-makers, and relevant government agencies. In doing so, we are contributing to the necessary global effort to mitigate and adapt to climate change and its detrimental effects on the human right to water.

BELGIUM



Participatory water management

Establishment of localised participatory water management to mitigate flooding and water stress at the community level

Join For Water and its partners support the development of sustainable mechanisms for long-term protection of freshwater resources, with explicit consideration for people and nature. Yet, no one-size-fits-all solution exists. In Belgium, we focus on localised participatory water management to mitigate flooding and water stress at the community level.

Context

Belgium is vulnerable to the impacts of climate change. Winters are becoming wetter in contrast to summers that show longer periods of drought, and higher precipitation peaks already occur more frequently.

Despite a temperate climate, Belgium scores worse on water availability than Mediterranean countries such as Spain. According to the World Resource Institute, Belgium ranks 23rd globally. Simulations show that under the high-impact scenario the probability of flooding in Belgium will increase by a factor of 5 tot 10. Inaction on water now will have dire consequences for people, the economy and nature in the future.

Belgium is a very densely populated country and it has historically been designed so that rainwater is drained to the sea as quickly as possible via sewers and watercourses. Those watercourses have often been straightened and streams drained.

Schemes such as the Blue Deal aim for a more sustainable water policy. But collective action is also needed, involving stakeholders and especially citizens to ensure local ownership of water management efforts. This requires a cultural change. Citizens and public bodies currently lack concrete action models to get started.

Charlotte Faes

Challenge

The challenge is to develop localised, community-based action models that facilitate collective action to ensure resilient water management.

For many citizens translating global water problems into local actions and solutions remains abstract. Research shows that citizens need support and advice to be able to take collective action. But currently not a lot of succesful models exist to offer that support. Similarly, actors such as municipalities and schools also need action models to involve their target groups in policy development and implementation around water management at the community level.

What's next?

Join For Water and its partners will seek solutions to ensure citizen participation in water management. We test and organise participation in localised water management projects in different municipalities.

Stakeholder insights and hydrological data will be collected to identify appropriate actions to enhance participation into small-scale infiltration projects in Flanders. This will feed into our knowledge-base about successes and faillures, and methodologies regarding participation in water projects.

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Join For Water

BENIN

Floodplain canals

Establishing sustainable and financially viable canal maintenance services in the Ouémé Floodplain

Join For Water and its partners support the development of sustainable mechanisms for long-term protection of freshwater resources, with explicit consideration for people and nature. Yet, no one-size-fits-all solution exists. In Benin, we focus on canals in the floodplains of the Ouémé River to establish sustainable and financially viable canal maintenance mechanisms.

Context

In Benin, Join For Water and its partners work in the Ouémé floodplains in the communes of Dangbo and Aguégues. The river and its extensive floodplains provide many benefits to people and the environment, which are known as “ecosystem services”. They provide water and other resources, and their rich soils help to grow food. They also play a role in regulating the water cycle (water infiltration) and the climate (storing greenhouse gases in the soil).

In addition, people can also create or optimise ecosystem services. In the Ouémé floodplains, people have dug side canals to the river system to facilitate the transport of people and goods (agricultural products,...).

In addition, the canals also help to spread seeds from indigenous trees such as mangroves via the flowing water.

However, due to a lack of regular maintenance, the canals are invaded by aquatic vegetation and sediments, severely limiting their navigability by communities and impacting agricultural production (degradation of drainage).

To better understand the problem, Join For Water supported a participatory diagnostic study of the existing social dynamics around the canals. The public utility of the canals was clearly recognized, but the lack of maintenance was indeed identified as a major problem.

Ganyou Abou

Francis Guyon

Challenge

The challenge is to sustainably manage these canals in the flood-plains of the Ouémé over the long-term, especally in changing contexts (population pressure, climate change,...).

Three interlinked challenges:

1) Inadequat municipal budget;

2) Lack of community-based maintenance initiatives;

3) No dissemination of best-practices on technical solutions that are effective and cost-efficient.

Our objective is to support the design and implementation of a shared local governance approach to improve the financial, technical and environmental sustainability of five selected canals.

What's next?

Join For Water is initiating collaborative work and advocacy between the authorities of the two communes and representatives of the 10 villages involved. Collaboration and exchanges are aimed at defining management methods that would allow the sustainability of the ecosystem services offered by the canals.

The objectives are as follows:

1) Establish a dedicated and substantial line in the annual budgets of each municipality;

2) Install a community savings dynamic at each site for maintenance;

3) Develop and implement canal management guidelines, with monitoring by communities and administrative authorities.

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Join For Water

BURUNDI

Water source areas

Towards long-term protection of water sources under high land and population pressure in Isare and Bubanza

Join For Water and its partners support the development of sustainable mechanisms for long-term protection of freshwater resources, with explicit consideration for people and nature. Yet, no one-size-fits-all solution exists. In Burundi, we focus on establishing mechanisms for long-term protection of water sources under high land and population pressure.

Context

In Burundi, Join For Water and its partners, work in two communes outside of Bujumbura (Isare and Bubanza). Burundi is rich in water resources, including lake Tanganyka and a dense network of rivers, marshes and smaller lakes. According to a survey carried out by the Directorate General for the Environment, Water Resources and Sanitation (DGEREA) in 2018, the country has over 24,000 springs.

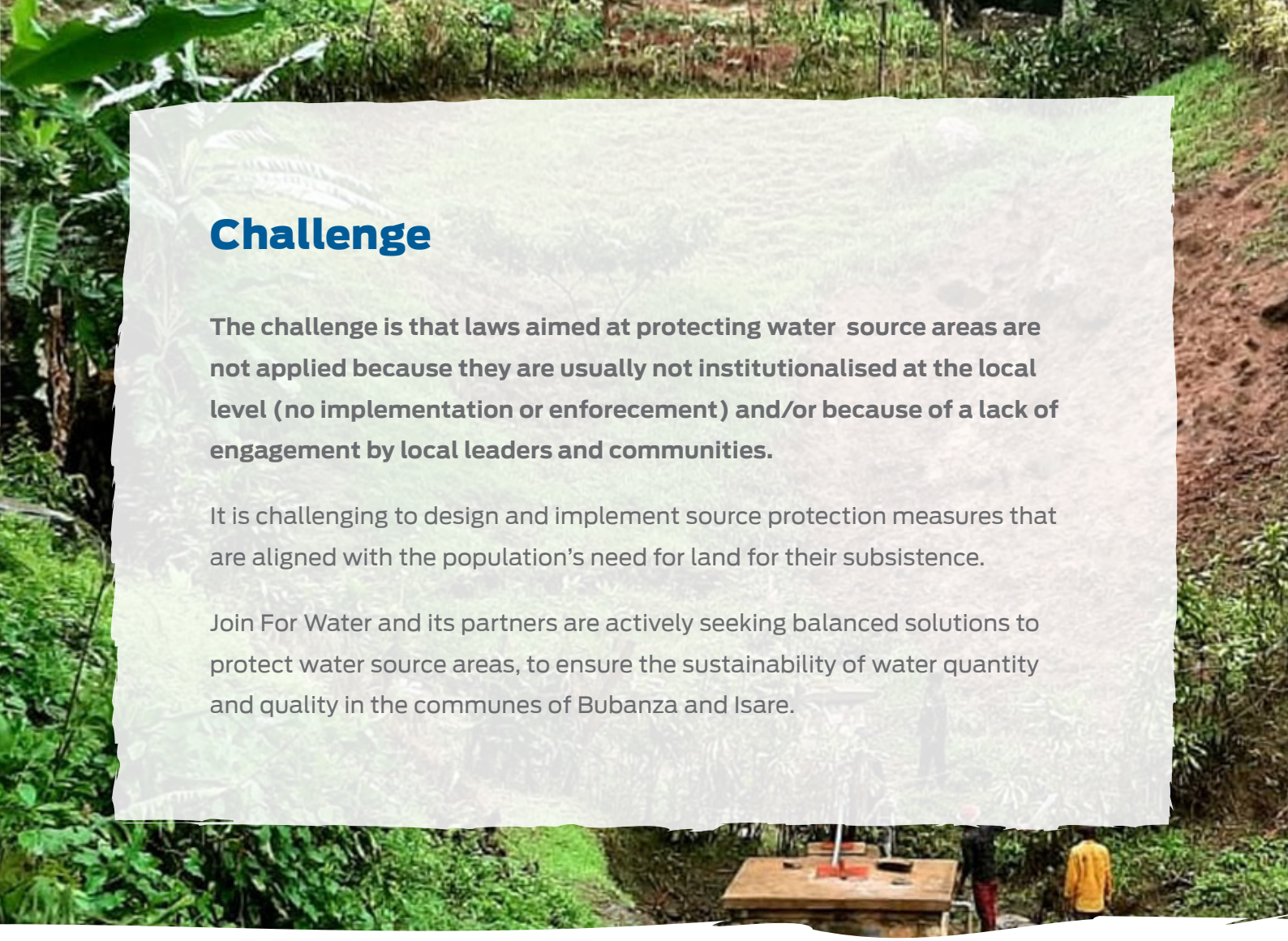
However, Burundi is also very vulnerable to water-related hazards, such as droughts and floods. Out of all the springs, at least 2,400 have already dried up, and around 4,000 are seriously degraded. These processes are likely to exacerbate in the future due to climate change and unsustainable land management.

Water resources are already under pressure due to Burundi's high population (over 12 million), and especially its population density which is the world's top 20. Of the entire population, 90% live in rural areas and are dependent on subsistance agriculture.

This situation leads to an increasing number of people cultivating and/or settling on land located in water source areas without considering the impacts on water quality and availability over the long term.

Furthermore, massive deforestation and a lack of erosion control policies contribute to the drying up of springs because water does not infiltrate sufficiently into the soil.

Joëlle Munezero



Challenge

The challenge is that laws aimed at protecting water source areas are not applied because they are usually not institutionalised at the local level (no implementation or enforecement) and/or because of a lack of engagement by local leaders and communities.

It is challenging to design and implement source protection measures that are aligned with the population's need for land for their subsistence.

Join For Water and its partners are actively seeking balanced solutions to protect water source areas, to ensure the sustainability of water quantity and quality in the communes of Bubanza and Isare.

What's next?

Join For Water and its partners will work on addressing this challenge via three tracks:

1) Pilot protection and conservation measures within both communes: data will be collected on 75 springs to be protected, i.e. 41 springs in Bubanza and 34 in Isare. Appropriate measures will then be implemented (incl. reforestation, demarcation, adapted agricultural practices).

2) Development of compensation mechanisms: identification of land owners upstream of the springs and develop alternative livelihood approaches.

3) Advocacy and collaboration with authorities: advocacy for implementation of policies to protect source areas, develop appropriate management plans, as well as ensuring the right to water.

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Join For Water

DRC

Forest protection

Promoting agroforestry as a mechanism for soil and water conservation to reduce slash and burn agriculture in Tshopo

Join For Water and its partners support the development of sustainable mechanisms for long-term protection of freshwater resources, with explicit consideration for people and nature. Yet, no one-size-fits-all solution exists. In the DRC, we focus on promoting agroforestry for soil and water conservation to reduce slash and burn agriculture.

Context

Water and trees are inextricably linked. Without trees, the water cycle would not function and without water, trees would not exist. Forests provide many water-related benefits to humans (called « ecosystem services »), such as water regulation via water infiltration and purification, keeping water in the soil, regulating temperatures, etc.

In the DRC, in the forest territory of Bafwasende (Tshopo province), Join For Water and its partners are carrying out a programme on the protection and conservation of the valuable rainforest. Community forest management is one of the main pillars of the programme, which is carried out at the level of “local community forest concessions” (LCFCs).

Compared to other rainforest regions, industrial scale deforestation is not (yet) the main threat to primary forest. Instead, slash and burn agriculture is responsible for more than 80% of the loss of forest cover in the region, and is one of the main drivers of fragmentation of primary rainforests in the Congo Basin.

This type of agriculture is widely practiced in the region due to the rapid depletion of soil nutrients in tropical soils. Trees are burnt to promote the rapid availability of nutrients via the ashes. Unfortunately, the fertility created by this practice does not last, as the nutrients are quickly leached to the deep soil and downstream rivers after a few cropping seasons. This creates the need for new fertile land to be cleared.

David Ushindi Chishugi

Challenge

The challenge lies in understanding under which conditions alternative agricultural approaches will effectively encourage sustainable protection of tropical forests.

It is essential to find alternatives to slash-and-burn agriculture. It is therefore necessary to develop and support the adoption of sustainable agricultural practices based on agroforestry and agroecology in order to maintain soil fertility as long as possible.

What's next?

The CFCLs must have sustainable management plans that are validated and developed in a participatory manner by the communities. These plans focus on sustainable management of the different land uses. Hence, alternative sustainable agricultural practices in exchange for slash-and-burn agriculture are to be promoted in these plans.

Using an agroforestry approach, we will support communities grow cocoa and other crops in combination with local food crops, and using soil and water conservation practices. Emphasis will be placed on how to combine and rotate different crops on the same field, optimising nutrient retention in the soil.

In the following period, we will assess when and where access to knowledge about sustainable land and water management through agroforestry can contribute to long-term protection of rainforest.

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Join For Water

ECUADOR-PERU

Binational river catchment

Desiging a binational water fund for equitable and sustainable water managenent and conservation at the catchment scale

Join For Water and its partners support the development of sustainable mechanisms for long-term protection of freshwater resources, with explicit consideration for people and nature. Yet, no one-size-fits-all solution exists. In the binational catchment of the Mayo-Chinchipe River in Ecuador and Peru, we support the design and development of a binational water fund.

Context

The binational Mayo-Chinchipe catchment is located on the border between the south of Ecuador and the north of Peru. The river is a tributary of the Marañón River, one of the main tributaries of the Amazon River. In the catchment (978,535 ha) live approximately 230,246 people.

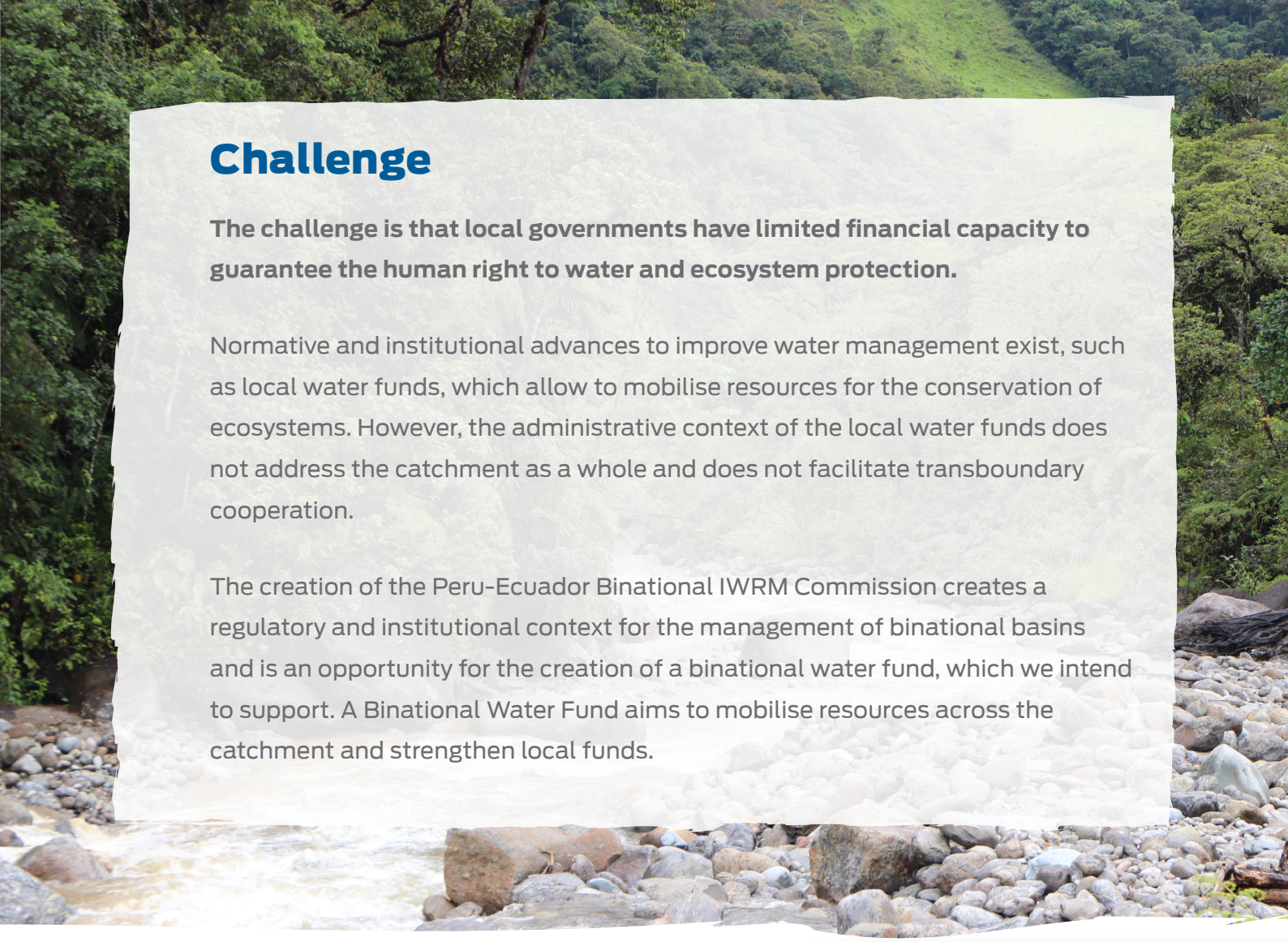
Deforestation, extensive coffee and cattle farming, mining, and the absence of wastewater treatment, combined with socio-economic factors such as population growth, urban expansion and poverty lead to a deterioration of water quality and quantity, disappearance of important ecosystems, and inequitable access to water and other ecosystem services. On the Ecuadorian side, rural access to water is 30%, while in Peru it is 64%.

There is an important social fabric based on farmer communities and decentralised local governments. However, there is an inefficient institutional framework for binational catchment management, and limited planning processes to develop appropriate policies. Investments in water infrastructure, resource management, and ecosystem protection are insufficient.

There is a need for the development of sustainable financial mechanisms to help address the problem of access to and management of water-related ecosystem services. In addition, there is a need to generate better knowledge and information on the impact of different pressures on water quality and quantity.

Helder Solis

Sandra Neyra



Challenge

The challenge is that local governments have limited financial capacity to guarantee the human right to water and ecosystem protection.

Normative and institutional advances to improve water management exist, such as local water funds, which allow to mobilise resources for the conservation of ecosystems. However, the administrative context of the local water funds does not address the catchment as a whole and does not facilitate transboundary cooperation.

The creation of the Peru-Ecuador Binational IWRM Commission creates a regulatory and institutional context for the management of binational basins and is an opportunity for the creation of a binational water fund, which we intend to support. A Binational Water Fund aims to mobilise resources across the catchment and strengthen local funds.

What's next?

Join For Water and Protos Andes are joining forces together with other partners in a multiyear programme called CUIDAR. We will develop the framework for the creation of a binational water fund, driven by a broad consultation process with social and institutional actors.

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The following steps will be taken:

- Develop a proposal to establish binational funds agreed with the Technical Secretariat of the Binational Commission of both countries.
- Ratify and expand the membership of the fund's steering committee and encourage the inclusion of new actors, with focus on gender, interculturality and inequalities.
- Generate financial and operational partnerships and agreements with local funds.

Developing this framework will enable resource mobilisation in other transboundary basins, and create pportunities for replication and dissemination of lessons learned.

Protos Andes
#AquaResiliente

Join For Water

HAITI

River catchment

Beekeeping as alternative income to support catchment management in the Moustique catchment

Join For Water and its partners support the development of sustainable mechanisms for long-term protection of freshwater resources, with explicit consideration for people and nature. Yet, no one-size-fits-all solution exists. In Haiti, we focus on beekeeping as alternative income generation to support the catchment management process.

Context

Join For Water and its partners in Haiti work intensively in the catchment of the Moustique River.

The catchment is under heavy human pressure, which is increasing over the years due to rapid population growth. Agricultural practices based on the slash-and-burn system, and the cutting of trees for charcoal and wood production are the main sources of household income.

Deforestation and poor agricultural practices on steep valley slopes reduce water infiltration in the soil, accelerate rainwater runoff, and lead to soil degradation.

As a result, agricultural yields decline and households enter a vicious cycle of impoverishment.

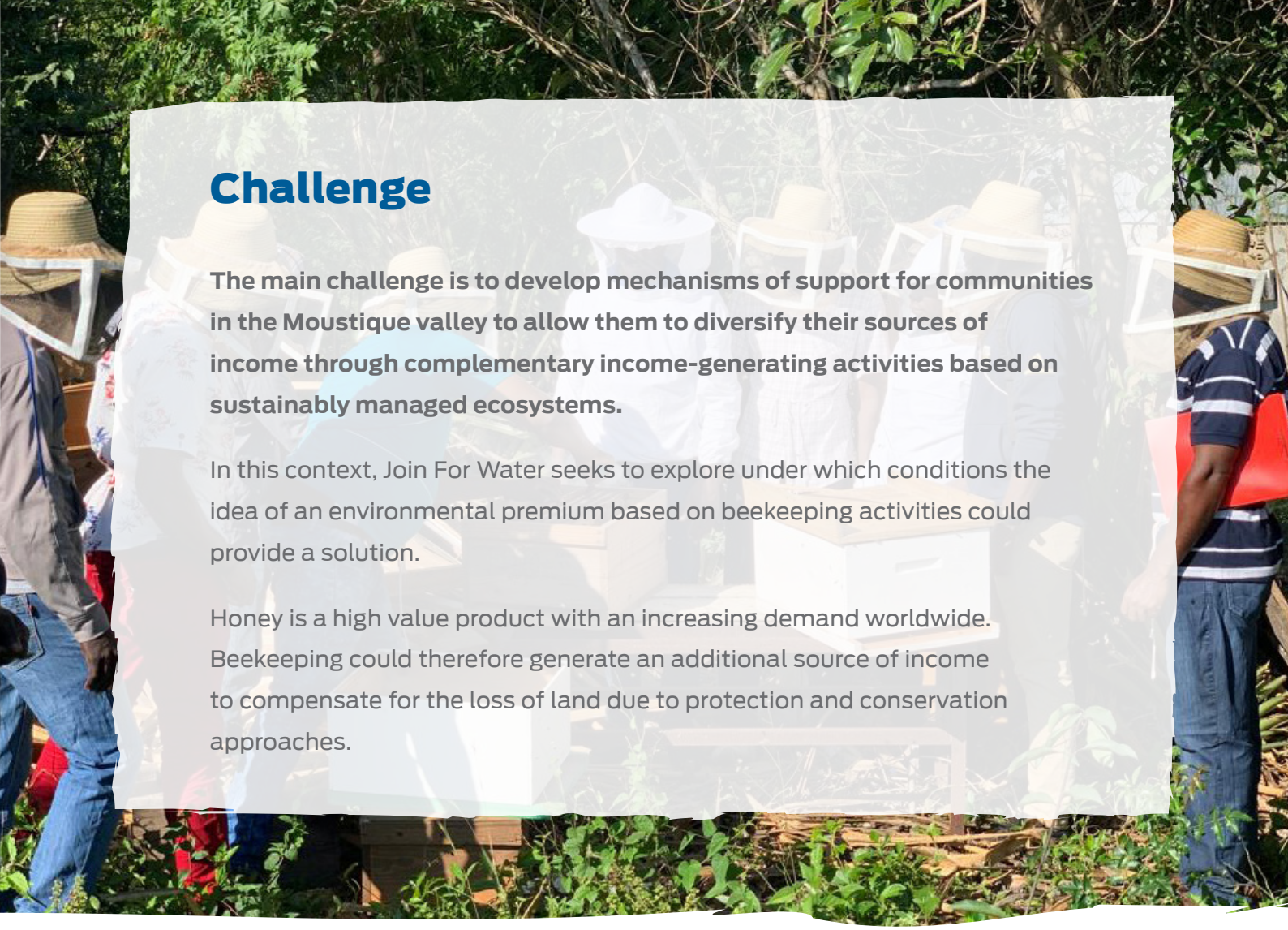
Furthermore, degraded ecosystems no longer provide other benefits to people. The lack of water infiltration into the soil reduces groundwater recharge. This leads to the drying up of the river and the acceleration of the desertification process with increasingly frequent periods of drought.

Over the past years, Join For Water has been supporting farmers in the creation of woodlots in the Moustique valley as part of a large scale catchment management approach. It is necessary to find mechanisms to preserve these plots over the long term.

Luc-Hobert Henri

Céline Jacmain

Reyvenley Auguste



Challenge

The main challenge is to develop mechanisms of support for communities in the Moustique valley to allow them to diversify their sources of income through complementary income-generating activities based on sustainably managed ecosystems.

In this context, Join For Water seeks to explore under which conditions the idea of an environmental premium based on beekeeping activities could provide a solution.

Honey is a high value product with an increasing demand worldwide. Beekeeping could therefore generate an additional source of income to compensate for the loss of land due to protection and conservation approaches.

What's next?

Join For Water and its partners did a preliminary study, which highlights the economic interest of beekeeping by farmers, without them being well aware of the other environmental services it provides. It is essential to popularise the importance of bees in the pollination process and its importance for agricultural production. Furthermore, the degradation of ecosystems and the loss of plant diversity make it increasingly difficult for bees to feed and produce honey all year round. Therefore, we will focus on 4 main activities:

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1) Support the securing of land for apiaries and the improvement of their environment.

2) Capacity building (training of trainers, exchange visits for beekeepers).

3) Modernisation of apiaries while enhancing traditional knowledge and know-how.

4) Develop a business plan for beekeeping and consider setting up a cooperative managed by the river catchment committee.

Join For Water

MALI

River catchment

Sustainably restoring hillsides against erosion in order to create a win-win situation in the Faraba subcatchment

Join For Water and its partners support the development of sustainable mechanisms for long-term protection of freshwater resources, with explicit consideration for people and nature. Yet, no one-size-fits-all solution exists. In Mali, we focus on sustainably restoring hillsides against erosion in order to create a win-win situation at subcatchment level.

Context

Join For Water and its partners in Mali work in several villages around the capital city of Bamako. In Mandé, we work in the Faraba subcatchment, which flows into the Niger River near Bamako. The village of Faraba is located at the edge of the classified forest of Monts Mandigues.

The classified and protected forest is being degraded by deforestation (for charcoal and timber) and land degradation through the expansion of cultivated land and other types of exploitation by riparian communities.

The bare soils are becoming more sensitive to erosion. Soil erosion by flowing water is a process whereby parts of the soil are loosened and carried away with the flowing water. It is a natural process, but human activity, such as agriculture and deforestation, can increase erosion rates.

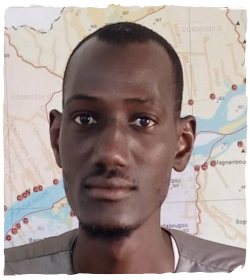
Large amounts of sediment can invade lowland rice fields. As a result, the rice fields around Faraba are becoming less productive, which in turn increases the pressure on the remaining forest. Trees are cut to compensate for the loss of agricultural income.

In short, while the forest is legally protected and no wood cutting is permitted, general degradation of the subcatchment is pushing people to further encroach the forest.

A previous study highlighted that one of the causes of the failure to protect classified forests in Mali is the weak involvement of local communities in forest management (Bather KONE, 2001).

Massa Ahmed Kam

Yassi Diaby



Challenge

The challenge in the Faraba subcatchment is finding mechanisms to restore and preserve forest areas and agricultural land in a financially viable and sustainable way to create a beneficial situation for both up- and downstream communities.

The NGO CSPEEDA, which is a partner of Join For Water, has already conducted a first diagnostic study in the area. The communities of the villages bordering the classified forest are aware of the impact of forest and soil degradation. Nevertheless, communities further downstream are struggling to find sustainable solutions to restore the forest and theas well as protect soil fertility (CSPEEDA, 2022).

What's next?

Join For Water and its partners in Mali will organise surveys and workshops with stakeholders to:

1) Gain Insights into communities' perception of the link between forest degradation, erosion and soil productivity;

2) Identify desired restoration and conservation measures;

3) Strenghthen capacities, legitimacies and possible roles in ecosystem management;

4) Set up monitoring plans to measure the impact of protection actions.

Join For Water will also coordinate a study of the hydrological characteristics of the sub-catchment. After this phase, we will implement restoration and anti-erosion actions with community involvement, and coordinate a study to evaluate the impacts of restoration and protection action. Finally, awareness raising on the ecosystemic management approach per sub-watershed will also be organised throughout the programme.

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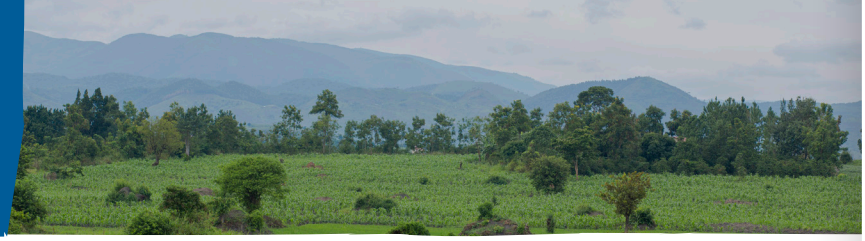
Join For Water

UGANDA



Rivers and wetlands

Long-term protection of wetlands and rivers under high land and population pressure in the Mpanga and Semliki catchments

Join For Water and its partners support the development of sustainable mechanisms for long-term protection of freshwater resources, with explicit consideration for people and nature. Yet, no one-size-fits-all solution exists. In Uganda, we focus on long-term protection of wetlands and rivers under high land and population pressure.

Context

In Uganda, Join For Water and its partners work in the catchments of the Semliki and Mpanga Rivers. Both catchments contain important freshwater ecosystems such as rivers, wetlands and lakes.

Freshwater ecosystems are often threatened by what is happening around them. For example, they can be damaged by agricultural encroachment, water abstraction, pollution, and deforestation. Therefore, maintaining bufferzones along watercourses and other freshwater ecosystems is a common method for protecting them against these impacts.

In addition, these bufferzones can also literally be a buffer against floods and droughts by increasing water infiltration, and thus provide additional benefits to people.

Bufferzones can be designed in different ways. They can be organised in a restrictive manner by delineating certain zones where no activities are allowed, or alternatively more on an incentive basis that allows access to these zones under certain conditions.

In Uganda, protection of freshwater resources is embedded in policy and legislation. Rivers, wetlands and lakes are required to have 100m bufferzones under the Ugandan National Environment Regulations, where human activities are strictly limited.

However, despite various legislative frameworks and policy initiatives, little priority has been given to the sustainable management of bufferzones.

George Bwambale

Marion Iceduna

Challenge

The main challenge is to find mechanisms to sustainably protect buffer zones without completely restricting access to the benefits freshwater ecosystems provide to people.

There are many degraded freshwater ecosystems where legal protection of bufferzones is not sufficient, especially in a context with high population pressure and need for natural resources. There are currently insufficient institutional linkages and funds (e.g. for law enforcement), persisting conflicts of interest (gravel mining,...), and a lack of sustainable alternative livelihoods to compensate for the loss of land when moving out of the buffer zones.

What's next?

To improve policy implementation, Join For Water and its partners will continue to work with researchers and experts to further explore how to address the challenge of buffer zone protection in the face of climate change and population pressure, and investigate what recipes for success exist in Uganda and beyond. Aligned with this, a dedicated policy support plan will be developed.

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To explore and demonstrate sustainable interventions, Join For Water and its partners have already started implementing pilot buffer zone protection and restoration measures, and are testing participative approaches with government and communities. With their help and adapted to the local context, we can identify sustainable management approaches and define innovative solutions that not only protect the river catchments but also guarantee the people's right to water and protect their livelihoods.

Join For Water

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Are these topics in line with your organisations' objectives and do you want to join us to scale up these actions?

Please do get in touch to discuss possible collaborations and funding opportunities.

Are you a researcher already working on these topics or do you want to explore them together with us?

We are looking for you, so please get in touch!

Are you an expert in one of these topics and would like to offer your advice?

We are always looking for relevant experiences and case-studies, so please do reach out!

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