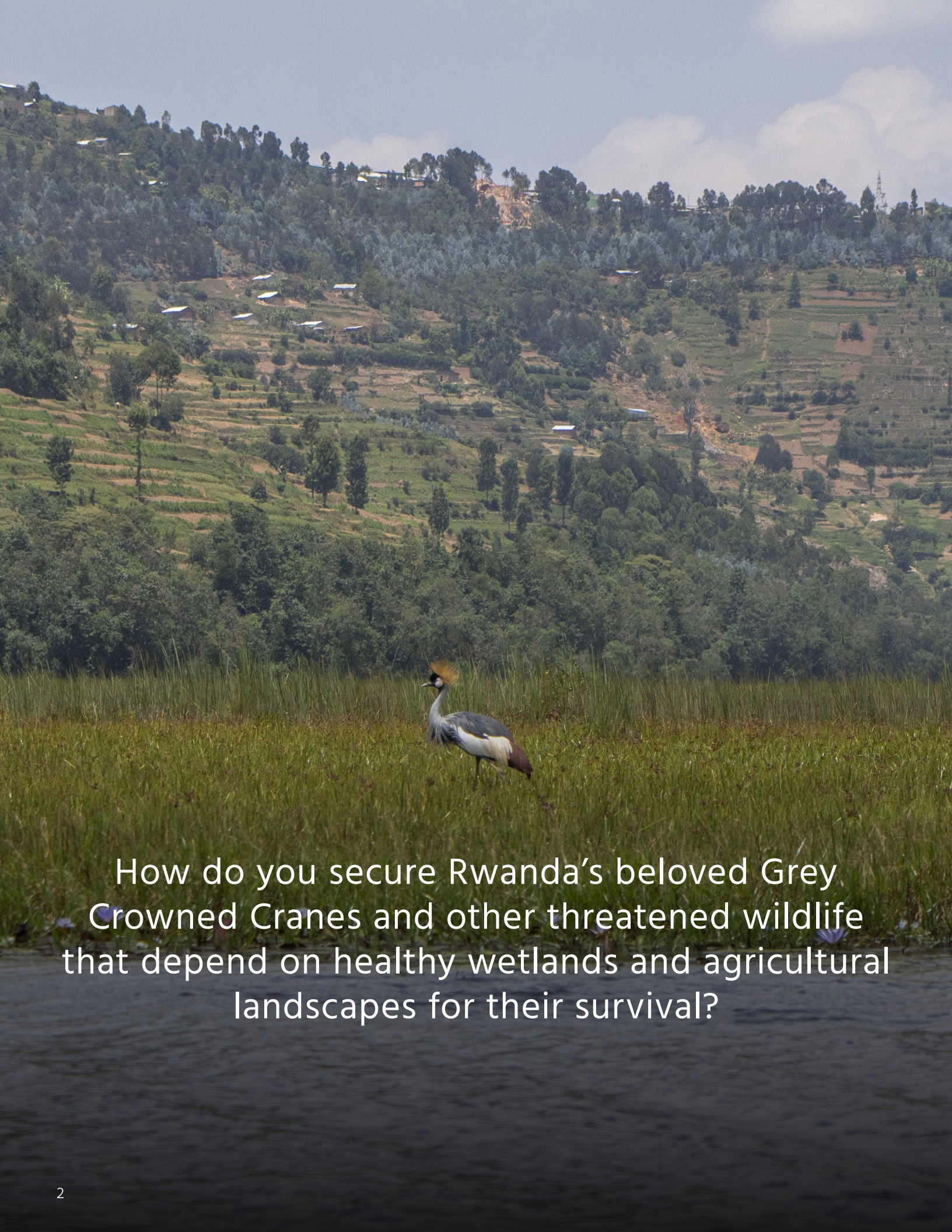




BUILDING RESILIENT LANDSCAPES FOR COMMUNITIES AND CRANES

Safeguarding Rwanda's Wetlands

Photo by Kerry Morrison



How do you secure Rwanda's beloved Grey Crowned Cranes and other threatened wildlife that depend on healthy wetlands and agricultural landscapes for their survival?



By improving the livelihoods and strengthening the resiliency of the people who share the landscape with cranes and other wildlife, through innovative agricultural solutions such as climate-smart and crane-friendly agriculture, catchment protection and restoration, and much more.

Rwanda's Vital Wetlands

A Crucial Resource . . .

Rwanda's wetland and catchment ecosystems provide a wide range of services and are vital to the nation's aspirations for sustainable development. Wetlands cover about 10.6 percent (2,785 Km²) of Rwanda's land area and provide essential ecosystem services critical to biodiversity, water management, and livelihoods. These services include providing habitats for biodiversity, filtering sediments and nutrients, protecting water quality, controlling floods, sequestering carbon at high rates, and buffering against climate change impacts, as well as supporting food security through rice production, fishing, livestock watering, and harvesting grass and other resources.

Rugezi Marsh, our focal site, is a 6,735-hectare high-altitude peatland located in the northern province of Rwanda and situated within the Nyabarongo and Akagera river basin, upstream of Burera and Ruhondo lakes, and part of Lake Victoria Watershed. It is a critical conservation target due to its ecological, hydrological, and socio-economic importance. It is a biodiversity hotspot, supporting 403 species comprised of 194 plant species, 127 bird species, 14 amphibian species, 13 reptile species, 52 mammal species, and 3 fish species. In addition, Rugezi Marsh offers important ecosystem services, including water provision and purification, hydroelectric power, flood control, recreational/aesthetic, and carbon sequestration through its capacity to store an important amount of carbon in the form of peat. It also serves as a lifeline for over 300,000 people who rely on the marsh for water, fodder, and natural materials.

. . . In Jeopardy

Despite their value, wetlands are one of Rwanda's most threatened ecosystems, with more than half being used for agriculture or energy. They face degradation from agricultural expansion and intensification within wetlands and surrounding catchments, peat extraction for energy, mining, pollution, and infrastructure development.

Population growth and the increasing need for agricultural land drives wetland degradation in Rwanda by intensifying pressure on limited land resources. Rwanda is the second most densely populated country in Africa, with more than 500 inhabitants per square kilometer. In addition, more than 65 percent of the population depends on agriculture as the main livelihood activity. With the current scenario, the projected population growth (2.3 - 2.6 percent annually) is expected to increase demand for food and other ecosystem services, pushing to more encroachment on wetlands and agriculture intensification in wetland catchments. This will cause more soil erosion, siltation, and pollution.

Rugezi Marsh alone supports the livelihoods of more than 300,000 people. Their livelihoods center on rain-fed agriculture, with over 80 percent of the population depending on subsistence farming due to limited land (average farm sizes ≤ 0.5 ha for 56 percent of households). This pushes farming onto steep slopes, causing soil erosion, reduced agricultural productivity, poor soil fertility, and increased vulnerability.







Cranes at Risk

Grey Crowned Cranes hold deep symbolic value in Rwandan culture. As the totem of Rwanda's royal clan, they symbolized elegance, prestige, peace, and longevity, and killing one was considered taboo. Unfortunately, this did not play in their favor, since it led to widespread capture for use as pets by hotels and wealthy families. This often involved wing clipping or breaking, causing stress, malnutrition, and no breeding. The loss of wetland habitat due to wetland drainage for agricultural conversion, the reduction of suitable crane nesting sites, poverty that encouraged egg collection and bushmeat hunting, pesticide poisoning, and collisions with power lines were additional factors contributing to the population decline, which reached a low of 459–487 individuals in 2017–2018. Though conservation efforts have led a significant recovery of up to 1,245 cranes by 2025, there is still much work needed to increase the population out of the risk of local extinction.

The survival of the Grey Crowned Crane and other species, as well as community resilience, depends on healthy wetlands and the choices we make today.

Cranes depend on healthy wetlands to feed, roost, and raise their chicks. The health of crane populations is an indicator of the overall health of the wetlands. Healthy wetlands—those with minimal agricultural encroachment and well-managed catchments—provide safe drinking water and abundant resources for communities. Healthy wetlands also have minimal disturbance to cranes

and other wildlife, giving them room to breed and increase their numbers.

The most immediate threat to wetlands comes from agricultural encroachment into the wetlands and degradation of their catchments. Facing the greater demand for food to feed an increasing population and shrinking harvests, Rwanda's farmers have been forced to convert wetlands to agriculture or encroach on the wetlands to meet their livelihoods. When wetlands are drained and converted to agriculture, the loss of breeding habitat displaces cranes and other wildlife into surrounding lands.

Moreover, as communities increase their dependence on wetland resources, cranes come into more frequent contact with people, livestock, and dogs, which causes them to become increasingly stressed. As the cranes spend more time watching out for potential threats, they spend less time nesting and caring for chicks, which reduces their reproductive success. The theft of crane eggs for food and the capture of cranes for illegal wildlife trade have also slowed population growth.

When cranes abandon degraded wetlands to feed on agricultural lands, they come into conflict with farmers who seek to protect their crops. Cranes on farms may be beaten or killed by angry farmers, deliberately poisoned, inadvertently poisoned by pesticides, or killed through collisions with fences and power lines.

Restoring Rugezi Marsh and its Catchments

An Integrated Plan

Rwanda is known as a country of a thousand hills. Its terrain is associated with valleys and wetlands. Rugezi is not an exception to this, as it is surrounded by steep hills dominated by intensive subsistence agriculture with poor soil conservation and water management. This contributes to intense soil erosion and wetland sedimentation, affecting the wetland's ecological integrity and reducing the availability and quality of the crane breeding area.

This is why the International Crane Foundation, in collaboration with partners, the local government, community groups, and other organizations, is committed to a multi-pronged approach that focuses on catchment restoration, agricultural productivity, and resilient livelihoods of the people who share the same landscape with cranes.

To promote sustainable farming, our major focus will be to work with the government and agricultural partners to improve farming practices and reduce agrochemical pollution. Our Farmer Field School approach is a participatory, group-

based learning approach where farmers learn by doing, experimenting, and solving agricultural problems collaboratively under the guidance of a trained facilitator. Through this approach, we will expand regenerative, climate-smart, crane-friendly agriculture to minimize crane-farmer conflicts and promote environmentally responsible farming across the catchment.

To complement these efforts, we will expand alternative livelihood initiatives to provide communities with resilient income options. By diversifying livelihoods and integrating conservation awareness, the initiative seeks to reduce pressure on wetlands and promote positive attitudes and behaviors toward crane and ecosystem protection.

Targeted research and monitoring will be strengthened to fill critical information gaps regarding crane populations, breeding success, and wetland health. Strong partnerships with local government, NGOs, businesses, and research institutions will support implementation and help build national wetland management capacity based on lessons learned from Rugezi and other conservation efforts.









Innovative Agricultural Practices for Small- Scale Farmers

Sustainable agriculture is at the heart of our conservation efforts around Rugezi Marsh.

We work with large-scale farmers on policy engagement, sustainability incentives, and land-use negotiations to provide cranes with safe spaces for foraging, flocking, roosting, and breeding.

At the community level, we work with small-scale farmers on innovative approaches to a healthier, more sustainable “agriculture 2.0.” Building on information gathered from farmers at meetings, one-on-one interviews, and community gatherings in and around the catchment area, we are working with local growers to implement agricultural practices that preserve the wetlands, protect cranes, and provide for people.

On farms throughout Kenya, the International Crane Foundation is helping growers maintain and improve soil fertility, reduce erosion, boost yields, and improve the quality and market value of their produce—all while reducing human impact on the wetlands.



Farmer Field School

We use the Farmer Field School approach to promote improved agronomic practices through peer-to-peer learning, active experimentation, and local problem-solving, aligning with principles of community-led development and climate-smart resilience. It is implemented on demonstration plots, where farmers meet regularly during a growing season to learn through experience, experimentation, and critical analysis.

With a two-season-long learning process, we take farmers through different sustainable farming practices, including composting and organic fertilizer preparation, land preparation and planting, soil and water conservation techniques, integrated pest and disease management, harvesting and post-harvest handling and recordkeeping. In addition, we train farmers in market value chains and financial literacy.

We also work with two farm cooperatives in two sections of the Rugezi wetland ecosystem, which the Rwandan government ceded to the community to farm. These are peatlands, and the prevailing farming practices are maladapted to peatland systems and are unsustainable. This is also where much of the crane-farmer conflict occurs.

Vegetable Growing

Our support for vegetable growing addresses two critical issues affecting wetland conservation and community wellbeing. First, we address the issue of competition for available farming land, where local farmers prioritize hillside agriculture for starchy food crops such as Irish potatoes, maize, and sorghum. When farmers prioritize these crops, they have little space left to grow vegetables.

Therefore, they expand vegetable plots into wetlands. Secondly, our approach addresses the issue of malnutrition and stunting, which is rampant in our focus area, affecting mostly women and children.

This work is part of our broader Population, Health and Environment approach in East Africa, which seeks to address the interlinkage of these three components. In Rwanda, our work focuses on two components, including addressing malnutrition to improve human livelihoods and preventing wetland degradation.

Through this approach, we work with health centers to establish vegetable gardens, providing capacity building as well as high-value vegetable seeds, including cabbage, carrots, tomatoes, and beetroots. These vegetable gardens serve

as teaching materials for malnourished families supported by the health centers. In turn, supported health centers provide a platform for delivering conservation-related behavior change messages. Through this collaboration, we engage malnourished families in growing vegetables using innovative techniques to maximize productivity in limited spaces such as repurposing sacks and used tires to create compact yet efficient gardening spaces near their homes. These compact, easily accessible gardens remove the need to encroach on the wetland. Such gardens also boost crop production and provide families with nutritious food. Through this initiative, we plan to expand into a business enterprise to increase livelihood benefits to target households.

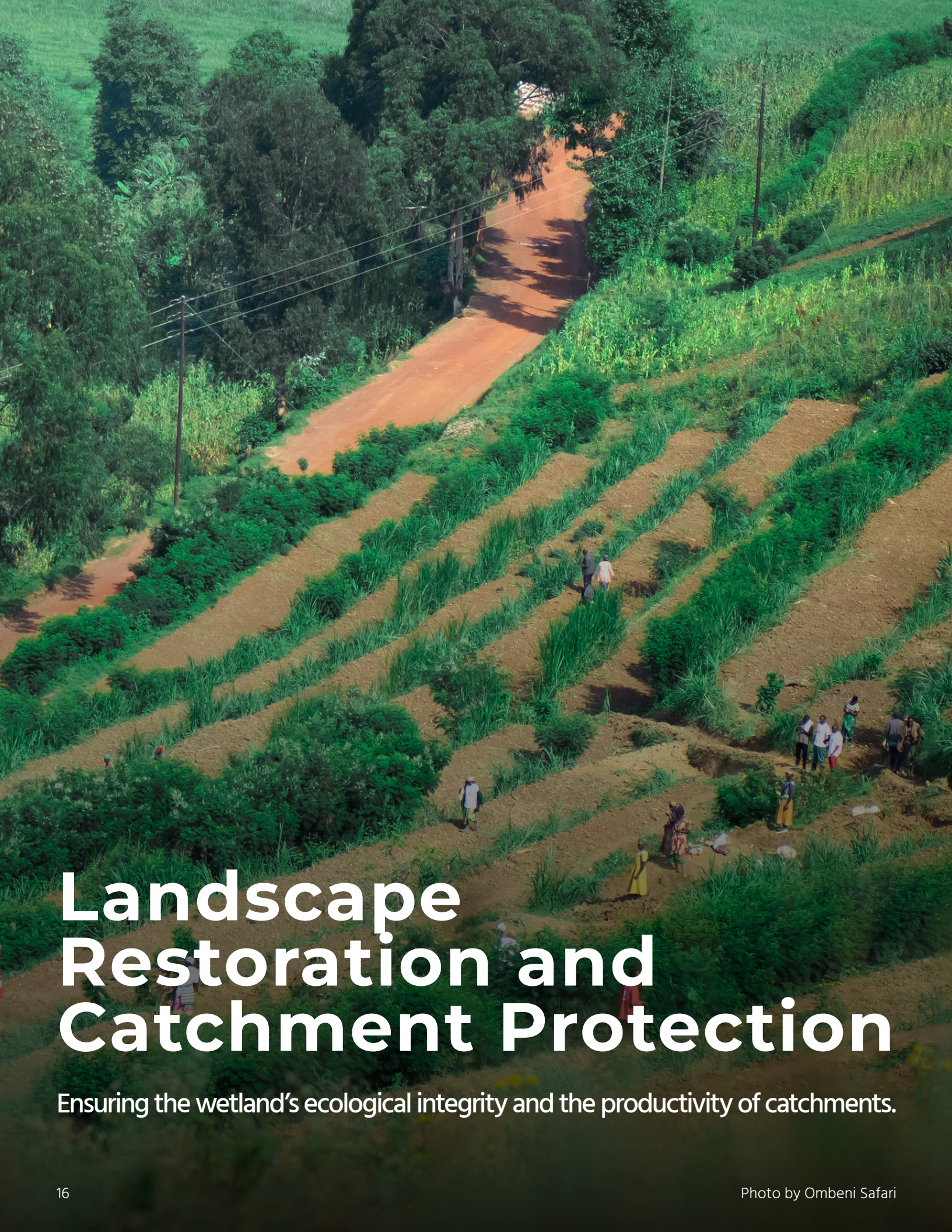


Mushroom Growing

The tree oyster mushroom-growing initiative is becoming a successful community-based enterprise in Rwanda and East Africa, with a strong connection with the conservation of Endangered Grey Crowned Cranes and the wetlands they call home. While traditional farming focuses on beans, Irish potatoes, and sorghum, these crops take months to harvest, which can push farmers toward unsustainable practices. For \$104-worth of mushroom tubes (the starter material), farmers can generate more than \$180 in mushroom sales within the first two months—more than what another crop may yield in much less time. In addition to providing a reliable source of income that does not require extensive land or put pressure on wetlands, mushrooms also provide another source of protein that has been adopted into local diets.







Landscape Restoration and Catchment Protection

Ensuring the wetland's ecological integrity and the productivity of catchments.



Rwanda's landscape is dominated by hills with steep slopes, most notably in the northern, western, and southern parts of the country. This makes these parts of the country more prone to soil erosion, with 33 percent of the area located in high to extremely high soil erosion risk.

Rugezi Marsh catchment is located in an erosion-prone area. Soil erosion contributes to the loss of nutrient-rich topsoil, reducing soil fertility, lowering crop yields, and deepening food insecurity. Sediments washed into the marsh and downstream lakes destabilize ecosystems, degrade vegetation, and affect biodiversity, reducing habitat quality and nesting grounds of the Grey Crowned Crane.

Soil and water conservation

We work with local governments from the district to the village level to mobilize and engage the local community in establishing terraces and water channels along the hillsides to manage water runoff. Additionally, we provide Napier grass and agroforestry seedlings for planting along terrace embankments and water channels to stabilize and retain soils.

Napier grass is a native, perennial species well adapted to the catchment ecosystem. Napier grass has previously shown a great impact in reducing soil erosion through its soil retention capacity, improving livestock feed and reducing the local community's need to visit the marsh to collect fodder. This then reduces disturbance to breeding cranes and increases their breeding success. With support from our local partners, we plan to increase our capacity to distribute Napier grass to more areas by establishing more nurseries.

Promoting agroforestry for soil management and livelihoods

Our catchment protection and restoration efforts include promoting the planting of agroforestry tree and shrub species on established terraces.

These plantings stabilize the soil, reduce erosion, enhance water infiltration, and increase soil fertility through their nitrogen and carbon-fixing capacity. Agroforestry species include Calliandra, Acacia, and Leucaena; indigenous species such as Ficus, Erythrina, and others; and fruits such as tree tomatoes, passion fruits and avocado.

The flagship agroforestry species we promote is avocado. The Hass avocado was selected because it grows faster than other varieties and it is in high demand on national and international markets, mainly in China and Dubai. For that reason it offers a good alternative income option to farmers. Our approach looks at the whole avocado value chain, including securing high-quality seedlings. To that end, we supported and empowered a community group in Ruhunde Sector to establish a tree nursery with the capacity to produce at least 50,000 avocado seedlings and 30,000 seedlings of other agroforestry species annually. We have helped provide technical capacity to avocado farmers to improve agronomic practices and meet quality demands, and to create market linkages.

Energy-saving cookstoves

Biomass energy for cooking in Rwanda primarily involves firewood and charcoal, accounting for 83 percent of total energy use, with over 90 percent reliance on these materials in rural areas. The unsustainable demand is an important driver of forest loss, exacerbating soil erosion and biodiversity loss. CO₂ emissions and indoor air pollution also cause respiratory issues. The demand for biomass for cooking causes the degradation of the wooded buffer zone around Rugezi and the harvest of wetland plants, therefore contributing to crane disturbance and loss of crane roosting trees. To remedy this, we distribute energy-saving cookstoves, aiming to reduce firewood use at the household level. We have distributed more than 800 cookstoves to 400 households as of March 2026.





Reducing Wetland Competition and Conflict

Communities need water and land to thrive—as do endangered crane populations. When people and cranes depend on the same wetland areas for water, food and other wetland resources, they can come into conflict, putting crane recovery at risk.

We work with farmers to reduce reliance on wetland resources, shield crops from wildlife-inflicted damage, decrease encroachment, and protect vulnerable cranes.

Mattress Distribution

Rugezi Marsh has long been threatened by the surrounding local communities harvesting grass to make traditional sleeping mats. This disturbance poses a significant threat to Grey Crowned Cranes, which use Rugezi Marsh as their key breeding ground. People entering the marsh to harvest grass can cause breeding cranes to abandon their nests and sometimes eggs before hatching. Additionally, this creates an opportunity for people to collect eggs and capture young chicks, thereby reducing crane breeding success.

We use threat data to target critical areas and work with the local government to identify vulnerable households lacking necessities, particularly bedding and mattresses. These households are potentially most inclined to harvest grasses from the marsh, and we provide them with mattresses. Having mattresses in their home reduces the need to go to the wetland. There are other positive impacts, too, such as increasing household hygiene, giving women more time for productive activities, and increasing school attendance for children.

Human-Wildlife Conflict

Crane-driven crop damage is a serious problem for catchment farmers. Crops eaten by displaced cranes cause significant economic losses for farms close to crane habitat. Farmers, needing to protect their livelihoods, can feel pressure to drive cranes off their land. Meanwhile, large-scale farmers are incentivized to use unsustainable growing methods on their lands, putting pressure on cranes.

We are committed to finding genuine, mutually beneficial solutions to this problem. By learning directly from affected communities, we determine when, where, and how cranes and granivore bird species such as weavers, larks, and pigeons are most likely to damage crops. Through policy engagement, sustainability incentives, and land-use negotiation, as well as direct work with affected farmers, we reduce harm to crane populations while also protecting crop yields. We also support and promote the uptake of practical mitigation actions that can reduce the impact of crane crop depredation on vulnerable crops such as maize, peas and beans. Effective mitigation actions will be shared with government extension services and other NGOs to help scale these solutions across crane areas in Rwanda.

Championing Cranes and Wetlands Across Rwanda

To increase national support for cranes and wetlands for the well-being of all Rwandans, we are telling the important stories of wetland restoration and crane conservation through media and communications channels, in-person events, and educational initiatives.



Photo by Ondrej Prosicky

Communications

Through advertisements and appearances on TV and radio, we are spreading the word about the importance of the wetlands to Rwanda's future. In addition, by partnering with places of worship and other gathering spaces, our staff speak directly with communities about the close relationship between ecological conservation and the issues that are most important to them.

Events

By celebrating environmental days such as World Wetlands Day (2 February) and World Environment Day (5 June) every year, we create inviting spaces where people learn important messages about conservation and crane population health.

Through our popular crane festivals featuring

art demonstrations, plays, and dance recitals, we attract diverse audiences and bring key stakeholders together to learn about the importance of wetlands and the cranes that depend on them.

Crane Ambassadors Program

Our Crane Ambassador program aims to engage local volunteers in raising awareness and promoting the conservation of cranes within their communities. This program is instrumental in promoting community engagement for the conservation of the Grey Crowned Cranes around Rugezi Marsh. The dedicated and enthusiastic Crane Ambassadors help disseminate conservation messages across various community platforms, fostering a deeper appreciation of the importance of preserving Rugezi Marsh and its rich biodiversity.



Partner Engagement

Our Partner Engagement strategy is crucial to the effectiveness of our work in the Rugezi catchment. Through partner engagement, we apply lessons learned from our work in Rugezi and elsewhere to national efforts to enhance integrated conservation and development around other critical wetlands in Rwanda.

Building partnerships for effective implementation

One of the key challenges that affect wetlands in Rwanda is the lack of wetland management capacity. We collaborate with the government to develop national wetland management capacity through capacity building and by leveraging lessons learned from Rugezi and other International Crane Foundation projects.

Improving protection status

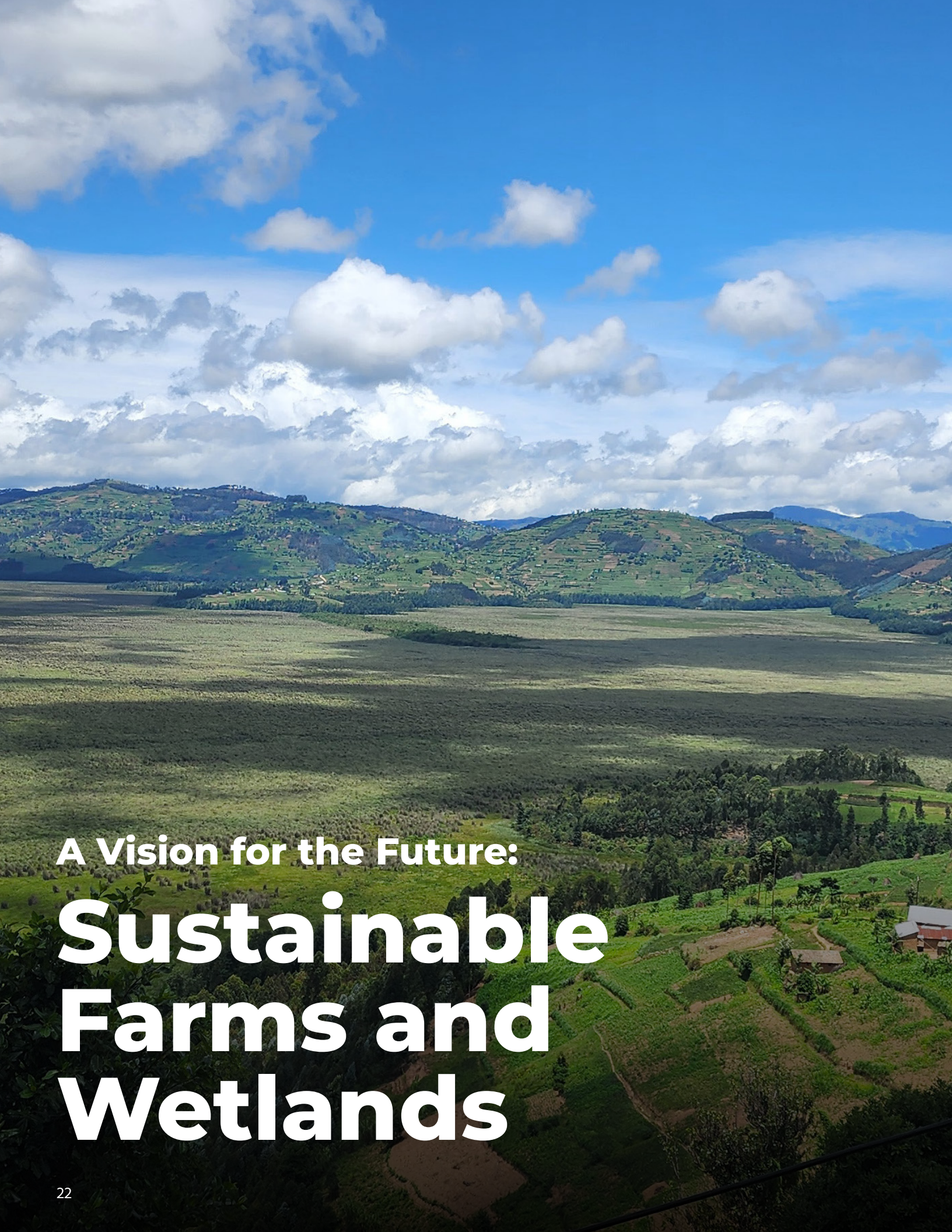
We are encouraging the Government of Rwanda to declare Rugezi Marsh a national park while supporting sustainable livelihoods for local communities through ecotourism-based activities. We conducted a feasibility assessment study to assess the viability of elevating Rugezi to a national park.

Through engagements with key stakeholders in

Rwanda, we learned there is heightened support for the declaration of Rugezi Marsh as a national park. Both the Rwanda Environmental Management Authority, the current custodian of the marsh as a Ramsar Site, and the Rwanda Development Board, under whom it would fall once declared a national park, expressed full commitment to this move. In addition, most of the community members around the marsh and catchment support elevating its status to a protected area. The motivation for this is the anticipated benefits from increased tourism and livelihood opportunities that they believe will result from protecting the marsh and its wildlife.

With high levels of support for the declaration of Rugezi Marsh as a national park, the International Crane Foundation and Rwanda Wildlife Conservation Association teamed up to secure funding from the Rainforest Trust to work with the government to elevate Rugezi to a protected area. We believe that achieving this proclamation will ensure that “Rugezi Marsh Protected Area” becomes a well-established ecotourism destination. The protected area will be valued by community members and stakeholders who draw on its economic potential. Livelihood projects in the catchment hold out the promise of building a green economy, thus reducing threats to the marsh and its biodiversity for the benefit of all.





A Vision for the Future:

Sustainable Farms and Wetlands



Goals for Rwanda

The International Crane Foundation envisions expanding our initiatives over the next decade to reach **21,000 small-scale farmers around Rugezi Marsh.**

We have been actively training farmers in climate-smart agriculture through our Farmer Field School—a hands-on, participatory learning platform that empowers small-scale farmers with sustainable and agroecological farming techniques. This approach helps farmers maximize space, boost crop production, enhance family nutrition, and maintain year-round food security, while creating and strengthening community resilience and environmental stewardship. This is done through gaining practical knowledge that supports sustainable livelihoods without encroaching on fragile wetlands, thus reducing conflicts with the Endangered Grey Crowned Crane and other wildlife.

Our current scale-up model involves working with target community groups, where we train selected members (called Farmer Field School Facilitators) through a two-season-long curriculum. Once graduated, each facilitator is supported to train five farmers, therefore increasing our reach. Since 2023, 477 farmers have participated in training sessions. These include 177 facilitators and 300 farmers trained by facilitators (second generation).

Our plan in the next 10 years is to integrate our Climate-Smart Agriculture work into our catchment restoration initiative, targeting all farmers on the restored land, allowing us to scale up even further.





Alignment with National and International Initiatives

The International Crane Foundation's work is closely aligned with Rwanda's national strategies and policies. Our work on wetland conservation, particularly in Rugezi Marsh, which supports Grey Crowned Cranes and other biodiversity, is well aligned with the National Biodiversity Strategy and Action Plan - NBSAP (2025-2030), Biodiversity Policy, and Wildlife Policy goals for ecosystem protection and restoration.

Additionally, our climate-smart agriculture work, including mushroom farming, energy-efficient cookstoves, and alternative livelihoods to reduce wetland dependency and support resilient community livelihoods, are well aligned with Rwanda's Vision 2050, National Strategy for Transformation – NST2 (2024-2029), Rwanda Green Growth Strategy, National Determined Contribution (NDC 3.0), Land Policy, and the Fifth Strategic Plan for Agriculture Transformation - PSTA 5 (2024-2029).



Globally, our work in Rwanda is aligned and directly contributes to 7 out of 17 Sustainable Development Goals, including:

No Poverty, Zero Hunger, Decent Work and Economic Growth

By helping small-scale farmers increase crop yields and generate income by selling lucrative products, the integrated plan for the wetlands is reducing poverty and increasing food security in the catchment—thereby addressing one of the root causes of wetland encroachment and degradation.

Climate Action, Life Below Water, Life on Land

Working alongside local communities to develop sustainable agricultural and husbandry practices that protect the wetlands—and benefit the cranes and people that depend on them—the integrated plan for the wetlands is empowering the people of the catchment to increase climate change resilience and safeguard biodiversity both in the wetlands and in the catchments.

Good Health and Wellbeing, Affordable and Clean Energy

By encouraging agricultural practices that reduce the need for industrial agrochemicals and prevent runoff and soil erosion into wetlands, and by supplying energy-saving cookstoves, the integrated plan is empowering local communities to reduce the cutting of trees for biomass energy and to provide nutritious, healthy food for their communities, thereby contributing to positive health and environmental outcomes.

Our Partners

To achieve our goals, we will continue to work with the local government from the district to village levels in our intervention area. We will also work with various government institutions at the national level, including the Ministry of Environment, the Rwanda Environmental Management Authority, the Rwanda Development Board, the Rwanda Water Resources Board, and Rwanda Agriculture. For capacity building and research, we will work with local universities and research centers such as the University of Rwanda, the Rwanda Polytechnic-Kitabi College, the African Leadership University and the Center of Excellence in Biodiversity and Natural Resources Management. We will also work with private sector companies as part of our initiative to create market linkages for our communities' agricultural products. Furthermore, we will continue to engage and build partnership with NGOs such as the Rwanda Wildlife Conservation Association and other local and international NGOs with whom we share similar interests and whose work complement ours and interests intersect with ours.







The Wetlands Restored: A Vision for the Future

The future of cranes in Rwanda will depend on the decisions we take today that ensure cranes and people live in perfect harmony, supported by healthy wetlands and protected and productive catchments.

In the envisioned future, Rugezi Marsh thrives as a pristine crane haven, with its water crystal clear and natural vegetation swaying undisturbed, hosting a flourishing population of Grey Crowned Cranes. Protected waters, quiet roosts, and living peat breathe resilience, letting courtship dances ripple hope across the marsh.

From hillside to shore, safeguarded, productive catchments bolstered by reforestation and erosion control, keep the lifeblood flowing—clean, reliable water, restored soils and biodiversity, and climate-smart farms that feed families while healing the land.

Prosperous and resilient communities around this haven stand as proud stewards—earning from eco-tourism, green enterprises, and regenerative agriculture and teaching the next generation to guard the wetland, so every crane in flight signals shared promise and enduring prosperity.

