AFD
AGENCE FRANÇAISE DE DÉVELOPPEMENT

GDN Global Development Network

AFD-GDN Biodiversity and Development Awards

STORIES OF IMPACT

First Edition, 2020-2025

CONTENTS

Mainstreaming Biodiversity through Multidisciplinary Research

The AFD–GDN Biodiversity and Development Awards Programme, a joint initiative of the Global Development Network (GDN) and the Agence Française de Développement (AFD) under AFD's ECOPRONAT umbrella, was launched to support early-career researchers in low- and middle-income countries to investigate how biodiversity can be better integrated into development policy and practice.

At its heart, the programme sought to answer a simple yet transformative question:

How can biodiversity conservation and human development be understood and advanced together?

From the outset, the Awards were designed to encourage a multidisciplinary perspective, bringing together ecology, economics, and the social sciences to understand the interconnectedness of ecosystems, livelihoods, and governance. While natural sciences provide the evidence to measure biodiversity loss, it is through social sciences that we understand the human behaviours, institutions, and incentives that drive or mitigate it.

This perspective became central to the programme's identity, and the programme has evolved into an experiment to adapt funding and capacity building mechanisms to achieve this vision at the level of a global research funding program. By combining field ecology with anthropology, economics, and public policy, the awarded projects were able to connect scientific evidence with social realities, revealing, for example, how ecosystem-based livelihoods and community engagement approaches shape conservation outcomes in Ghana or how policy frameworks influence sustainable farming practices in Vietnam. In parallel, the GDN team analysed how different modalities of international funding, support, quality control, and network building could advance the important work led by researchers in their respective countries.

These projects showed that biodiversity cannot be mainstreamed through science alone. It requires an integrated approach that listens to local voices, values traditional knowledge, and aligns conservation goals with community needs and policy priorities. Similarly, the program showed that funding alone is necessary but not sufficient to trigger transformative work. Non-funding support was instrumental in advancing the projects.

As the programme evolved, it also became a space for learning about the value and challenges of transdisciplinary research. Beyond crossing disciplines, transdisciplinary work involves co-

producing knowledge with those who live and make decisions within ecosystems: farmers, fishers, local authorities, and civil society. It also requires longer timeframes for funding and diverse support strategies, combining mentoring and collaboration amongst peers.

Through mentoring, workshops, and peer exchange, grantees learned to navigate the complexities of working across academic, institutional, and cultural boundaries. This approach helped make their research more actionable, inclusive, and policy-relevant, a critical step toward mainstreaming biodiversity in development decisions.

The Awards Programme demonstrated that when researchers adopt a multidisciplinary and transdisciplinary lens, biodiversity research becomes not only richer in understanding but also more effective in shaping sustainable, equitable solutions. Similarly, it also demonstrated that flexibility and a commitment to understanding projects in their own terms and in their own context are essential for international funding to become catalytic for change.

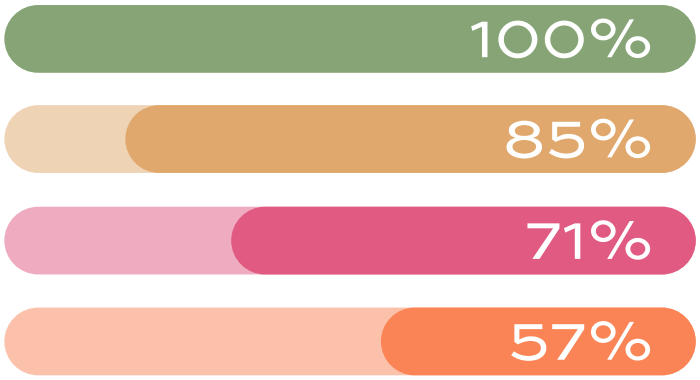
The following pages capture this impact through data, stories, and reflections from the researchers who have turned these principles into practice across Ethiopia, Fiji, Ghana, Madagascar, and Vietnam.

Impact at a Glance

The Awards Programme set out to test what happens when early-career researchers are given the space, support, and trust to approach biodiversity as a multidisciplinary and socially embedded challenge. The results reveal how this model has helped shape stronger science, deeper collaboration, and more visible influence across six countries in Africa and Asia.

A Multidimensional Focus

All seven projects funded under the programme went far beyond ecological research alone. Every team conducted original scientific fieldwork, but most combined it with policy analysis, community engagement, and institutional capacity building.

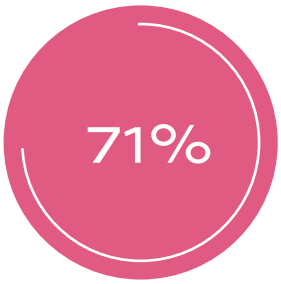


- **Conducted original research**
- **Engaged directly with local communities and government actors**
- **Built institutional capacity or regional partnerships**
- **Uundertook explicit policy advocacy or knowledge translation activities**

This diversity reflects the very essence of the programme: research designed to connect data, people, and policy. It also shows the wide diversity of pathways transdisciplinary engagement can take.

From Expectations to Measurable Impact

When asked what kind of impact they expected at the outset, most researchers anticipated contributing biodiversity data, local awareness, and socioeconomic benefits. By the end of their projects, these expectations had largely materialised, and in many cases, expanded.

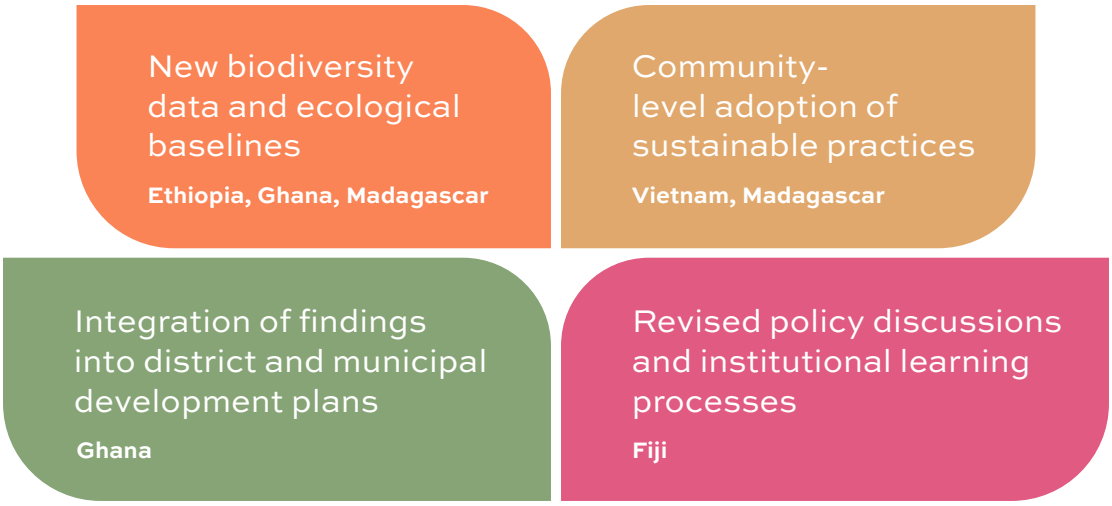


of grantees said their projects fully met their intended impact goals,

while

reported partially meeting them due to time or funding limitations.

In practice, this translated into tangible outcomes such as:



The fact that 29% reported partial achievement of their goals should not be surprising. These goals evolved and became more complex as the project evolved, and the program funded projects. Transdisciplinary research, however, is best understood as a career-long endeavour built on long-term work plans. Projects are a poor fit with the time, institutional, and scientific dimensions of transdisciplinary work.

Policy Uptake and Public Visibility

Evidence use was a core focus of the programme's design, and the results confirm a meaningful footprint in local and national decision-making spaces.

4 out of 7 projects reported their research was used or cited in policy debates, public forums, or official lanning processes.

7 out of 7 confirmed that association with GDN and AFD significantly enhanced the visibility and legitimacy of their work, facilitating dialogue with government bodies and NGOs.

Examples include:

1. The Keta Lagoon study in Ghana, which informed revisions to District Medium-Term Development Plans (2022–2025).
2. The Ethiopian carnivore study, whose data contributed to the African Lion Database, IUCN Red List and Green Status assessments for lions.
3. The Fiji EIA project, which catalysed conversations with the Ministry of Environment on modernising national guidelines.

Global funding programs not only make resources and support available, but they can also lend projects a legitimacy that can boost the plans of researchers when these are well thought-out. Mainstreaming biodiversity is about breaking institutional boundaries built into how states and policy are structured. External validation can be useful to advance well-justified change.

Stakeholders and Collaborations

The projects were marked by extensive engagement across institutional, governmental, and community levels.

Each project engaged 5 to 7 types of stakeholders, typically including

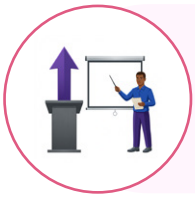
- Academic institutions (100%)
- Policymakers (86%)
- Communities (86%)
- NGOs (86%)
- Government agencies (71%)

This engagement led to co-authored publications, workshops, pilot initiatives, and joint field activities. Collaborations were not limited to national partners — several teams developed enduring South–South research networks, especially through the two cross-country projects (Fiji–Ghana and Madagascar–Vietnam). These collaborations between Vietnam and Madagascar have continued and even expanded beyond the initial project, fostering ongoing exchanges in soil ecology, agroecology, and sustainable farming systems.

Communities Reached and Capacity Built

Biodiversity mainstreaming is ultimately about people, about connecting knowledge with communities who live closest to ecosystems. The programme reached a significant number of local beneficiaries through education, training, and outreach.

Over 10,000 community members were reached through awareness activities, media campaigns, and school outreach.



Between 50 and 7,500 stakeholders were directly trained, depending on project scope.

Several teams supported **students and early-career researchers,** including postgraduate theses supervision in Ghana, Ethiopia, and collaborative field research in Madagascar and Vietnam.

These activities built not only local knowledge but also long-term institutional capacity for biodiversity research and management.

Publications and International Recognition

The Awards strengthened the visibility of Southern-led biodiversity research on global platforms.

> **5 of 7 grantees produced peer-reviewed publications or presented at international conferences, including the 2023 Global Development Conference in Quito, Ecuador, and other global fora.**

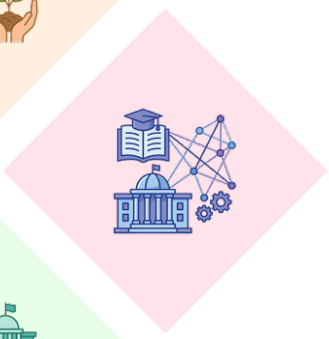
For many, association with GDN and AFD served as an institutional "quality stamp," helping them attract future collaborations and additional research funding.

Types of Impact Reported

Across the seven projects, researchers identified several layers of impact:

Scientific impact: generation of new biodiversity data, methods, and ecological insights.

Socioeconomic impact: improved community livelihoods and farmer resilience through nature-based solutions.



Institutional impact: strengthened universities and research centres in managing biodiversity-related research.

Policy impact: influence on local planning processes and environmental governance discussions.

Strategic impact: expanded visibility and legitimacy of Southern researchers in global biodiversity debates.

Perhaps the most meaningful result lies beyond the numbers. For the researchers, the programme was a journey of learning, on how to build interdisciplinary teams, how to work with non-academic actors, and how to translate science into action.

The majority emphasised that the flexibility of GDN–AFD funding, coupled with ongoing mentorship, allowed them to adapt, learn, and innovate. As one participant summarised, "Most grants focus on deliverables. This one focused on growth."

Stories of Impact

The following stories illustrate what growth looks like on the ground: how local innovation, scientific rigour, and social collaboration are helping mainstream biodiversity into the heart of development practice.

These initiatives demonstrate how locally driven, multidisciplinary research can translate scientific evidence into action, advancing conservation, improving livelihoods, and informing public policy.

Together, they showcase the power of collaboration between the natural and social sciences to address today's most pressing biodiversity and development challenges. They also show the unique strategic value that international research funding, if shaped by a commitment to understanding projects in their own terms, can bring to national research efforts.

ETHIOPIA

Conservation of Large Carnivores in the Omo Valley, Southwest Ethiopia

Tsyon Asfaw, University of Antwerp

Photo Credit: iStock/itpow

Challenge

The Omo Valley in southwest Ethiopia is one of Africa's biologically rich yet ecologically fragile regions. Wide-ranging large carnivores, including lions, leopards, cheetahs, spotted and striped hyaenas, and African wild dogs, are in steep decline due to multiple interacting threats: habitat fragmentation, competition and conflict with people and livestock, major land-use change (for example, sugar-cane plantations, dams), and low governance capacity.

Despite this importance, there was scant empirical research conducted to elucidate the impact of the ongoing agricultural expansion and infrastructure development on the conservation of large carnivores in the Omo Valley. Given the urgent need for large carnivore population assessment in Ethiopia, particularly in the southern boundary of the country, Tsyon aimed to understand the conservation status of large carnivores in the Omo Valley with key areas of focus in knowing the potential of the region in supporting medium and larger mammalian diversity, factors determining the occupancy of large carnivores, human-carnivore interactions and the role of Omo Valley in connecting the major key habitats of African Lion in the Lake Turkana catchment.

Solution

A research team led by Tsyon Asfaw deployed nearly 150 unbaited camera-traps in four protected areas of the Omo watershed (Omo National Park, Chebera Churchura National Park, Maze National Park, and Tama Community Conservation Area) between 2020 and 2022, covering >10,000 trap-nights. 277 households, conservation practitioners, and other stakeholders from the area were interviewed to understand the nature of human-large carnivore interaction in the area. Tsyon further collaborated with different organizations mainly with African Parks in Boma National Park, South Sudan and Ewaso Lions, from northern Kenya, to share lion sightings data to do robust modelling on habitat suitability and landscape connectivity in the Lake Turkana catchment.

Impact & Results

The study identified the presence of 51 mammalian species, which underscores the Omo Valley's rich biodiversity and highlights the area as a crucial hotspot for mammalian conservation, making it a key focus for biodiversity studies and preservation efforts. Of the 51 mammalian species, 30% of them are also globally threatened mammal species in the IUCN Red List status. The study further identified the emergence of 10 mammalian species and the disappearance of 27 species from the historical record of mammalian species in the area, underlining the ongoing challenges and the urgent need for effective conservation measures.

Her recent sighting of the white-eared kob in Omo National Park underscores the area's vital link to the Gambela-Boma landscapes. The recording of these species underlines the critical need for conservation measures to maintain and enhance

this connectivity, which is vital for the survival and genetic diversity of these and other species in the region.

The study also documented all six large-carnivore species across Ethiopia's Omo Valley, with Omo National Park standing out as the only site where all were recorded. Using a multispecies occupancy modelling framework, Tsyon examined how anthropogenic factors (distance to sugar factory, settlements, roads, livestock abundance) and ecological covariates (prey abundance, elevation, habitat) shaped carnivore occupancy and rarity. This study identified the availability of prey species as positively and strongly associated with large carnivores, while the occupancy of large carnivores was negatively and strongly associated with the distance to human settlement area, which led her to conclude that large carnivores potentially visit human settlement areas. Conflict is indeed a predictable outcome of overlap between large carnivores and people's property. Tsyon didn't stop there; she then continued studying the nature of human large carnivore interaction in all the study areas to draw a clear conclusion about the status of large carnivore conservation in the Omo Valley.

To examine the relation between people and large carnivores in the Omo Valley, she employed a non-framing approach, which describes, connects, and analyses multiple actors, practices, discourses, and processes related to natural resources. This approach incorporates Actor Network Theory (ANT), focusing on relationality, to trace and connect actors and describe the formation and sustainability of networks. As a result, her study indicated a high level of livestock losses in a place where people and livestock live alongside wildlife. Consequently, people from the Tama Community Conservation Area were more prone to human-large carnivore conflicts, as they have large livestock holding sizes and as they were primarily pastoralists living alongside large carnivores.

Tsyon also tried to understand what factors were affecting the local people's attitude towards large carnivore conservation and figured out that socio-demographic differences and personal experiences of carnivore damage significantly influenced local attitudes toward large carnivores. Thus, she highlighted the need for sustainable solutions for addressing human-carnivore conflicts and the complexities of addressing human-wildlife conflict, particularly in relation to livestock depredation by large carnivores. She modelled this complexity in her Actor Network Theory model. The model suggested that effective mitigation strategies must go beyond a single intervention and instead target the broader network of influences.

In conclusion, transdisciplinary research offers a comprehensive approach to developing conservation strategies for large carnivores. Additionally, modern technologies like camera traps have proven to be effective tools for surveying large and medium-sized mammals. The continued and expanded use of these methods can generate valuable long-term data, aiding in the monitoring of wildlife population trends and assessing the effectiveness of conservation efforts over time.

By involving local stakeholders (for field logistics, community conservation area management) the project also aimed to strengthen linkages between wildlife

science, communities and protected-area agencies. The research highlighted the delicate balance between biodiversity and development, exposing human–wildlife interface risks and the need for more robust monitoring of low-density species. It also strengthened local capacity by involving conservation staff, students, and community actors in fieldwork. The visibility gained through the AFD–GDN programme helped position the study within broader conservation and policy dialogues.

Overall, the findings provide crucial evidence for improving protected-area design and landscape connectivity in the Omo Valley, informing strategies to reconcile infrastructure expansion with long-term biodiversity conservation.

Future Prospects

The research team recommends that future conservation strategies in the Omo Valley adopt a landscape-connectivity approach, strengthen community-based initiatives, particularly in the Tama Community Conservation Area, and develop mitigation models for human–wildlife conflict based on the study's findings. The next step is to transform this research into a long-term wildlife monitoring programme, combining camera-trap data with genomic and spatial analysis to enable continuous population tracking.

Equally important will be linking these insights to decision-making by protected-area authorities and regional planners through policy briefs and stakeholder workshops. Ultimately, this project embodies the AFD–GDN programme's vision of mainstreaming biodiversity into development policy—showing how rigorous ecological science, grounded in social engagement and multidisciplinary collaboration, can yield actionable knowledge for balancing conservation and development in rapidly changing landscapes.

> *"Living alongside large carnivores is not a fantasy; it comes with real costs, deep complexities, and demands sustained, thoughtful intervention. Conservation in places like the Omo Valley means navigating the delicate balance between survival, coexistence, and stewardship."*

FIJI

Evaluation and Review of the Environmental Impact Assessment Guidelines for Fiji.

Lavenie Tawake, University of the South Pacific

Photo Credit: iStock/johnandersonphoto

Challenge

Fiji's Environmental Management Act (2005) and EIA Regulations (2007) set a solid legal framework, but the operational EIA Guidelines (2008) have gaps, and some sections are outdated. Biodiversity concerns in national policy and plan implementation are often under-addressed due to (i) poor access to EIA information (past reports, baselines, monitoring), (ii) limited technical capacity (taxonomy, valuation, TOR/review quality), and (iii) generic scoping/Terms of Reference that is overall weak in covering ecosystem realities—especially in coastal and marine zones. The result: uneven integration of biodiversity and sustainable-development considerations in project approvals.

Solution

The study brought together biodiversity experts across Fiji to identify the main barriers to integrating biodiversity into Environmental Impact Assessments (EIAs). The project used a qualitative, participatory approach, pre-interviews and a full-day Focus Group Discussion (FGD) with 20 Fiji biodiversity experts (academia, NGOs, registered EIA consultants, government). Experts were divided into aquatic and terrestrial sub-groups to surface lived experience, converge on barriers, and co-create practical fixes for mainstreaming biodiversity in EIAs. Plenary discussions were transcribed and thematically analysed to derive consensus recommendations for reform.

Impact & Results

Three core challenges emerged: limited access to EIA reports and actual raw data due to high retrieval costs and confidentiality restrictions, limited technical capacity among reviewers and institutions, and weak scoping and Terms of Reference (TOR) practices that often overlooked wider ecosystem impacts, especially in the outer islands.

Through participatory dialogue, experts co-designed practical reform pathways. They proposed creating a national data-sharing network and digital repository to consolidate EIA reports, baseline data, and monitoring information, linking them with global biodiversity sources. They also recommended reviving and adequately resourcing Technical Advisory Groups under the National Environmental Council to strengthen the vigour of scientific review, technical training, and standardised methodologies. Finally, they emphasised improving TOR quality and empowering Provincial Conservation Officers to enhance local-level screening and community engagement.

These findings culminated in a policy-ready set of recommendations for updating Fiji's outdated 2008 EIA Guidelines and institutionalising biodiversity data within future national environmental assessments.

Future Prospects

Looking ahead, the research team envisions the integration of its recommendations into national policy, beginning with the Department of Environment's update of Fiji's EIA Guidelines. A pilot EIA e-database could provide tiered access to regulators, consultants, and the public, improving transparency and data sharing.

To strengthen institutional capacity, Technical Advisory Groups (TAGs) should be reactivated with clear mandates and sustained funding, while a dedicated research and technical unit within the Department of Environment could help retain national expertise. Embedding biodiversity assessment and restoration standards, such as mangrove planting best practices, and ensuring that monitoring data feed into the national system will further improve environmental governance.

Finally, empowering Provincial Conservation Officers and community forums through targeted training will foster more informed local dialogue, shifting the focus from compensation to long-term ecosystem protection and resilience.

GHANA

Assessment of Ecosystem-Based Livelihoods on Biodiversity of the Keta Lagoon Complex Ramsar Site (KLCRS) in Ghana.

Margaret Fafa Akwetey, University of Cape Coast

Challenge

The Keta Lagoon Complex Ramsar Site (KLCRS) in southeastern Ghana spans roughly 1,000 km² and supports an estimated 900,000 people across six districts. The lagoon and its surrounding mangroves are biologically rich but face mounting threats, including saltwater intrusion, erosion, land-use change, declining fish stocks, and reduced soil fertility. The research identified significant habitat and biodiversity changes across the wetland, underscoring the importance of maintaining the lagoon's ecological integrity to sustain both biodiversity and local livelihoods. Within this context, the project addressed the dual challenge of safeguarding ecosystem services while supporting poverty-linked, ecosystem-dependent communities.

Solution

Led by a Ghana-based research team, the study utilised community-based approaches to reduce pressure on wetland resources and enhance biodiversity conservation within the Keta Lagoon Ramsar Site. The researchers worked with communities along the wetland to document local knowledge of environmental change and identify feasible livelihood alternatives that could reduce dependence on fishing and resource extraction. In parallel, biodiversity and environmental data were collected on waterbirds, fish, macroinvertebrates, vegetation, and key water quality parameters, including nitrates, phosphates, and pesticide residues. These measurements provided a scientific basis for understanding ecological change and guiding management actions.

Proposed solutions included training and financial support for trades such as carpentry, tailoring, and small-scale enterprises, alongside enforcement of local bylaws and sustainable resource-use practices. To address hydrological and ecological degradation, the team recommended follow-up studies on freshwater inflows and drainage patterns to restore the lagoon's natural balance. Community sensitisation and environmental education programmes were also promoted to strengthen stewardship and collective responsibility for the wetland ecosystem. By combining livelihood diversification, governance strengthening, and ecosystem restoration, the project demonstrates an integrated, locally driven model for sustaining biodiversity and improving community resilience in coastal wetlands.

Impact & Results

The study revealed the profound interconnection between human livelihoods and ecosystem health in one of West Africa's most critical wetlands. Field assessments across the Keta Lagoon Complex Ramsar Site documented ecological changes alongside community perceptions of environmental decline. Surveys recorded 132 bird species from 44 families, including three near-threatened migratory species, while fish assessments identified 10 species dominated by tilapias (Coptodon zillii and Sarotherodon melanotheron). The researchers identified 79 plant species from 39 families, with Avicennia germinans, Cyperus articulatus, Paspalum spp., and Sesuvium portulacastrum dominating the wetland cover. Water quality data indicated high concentrations of nitrates and phosphates both in water and sediment, consistent with agricultural runoff and reduced freshwater inflows, while macroinvertebrate assemblages pointed to moderate ecological stress. Through extensive community consultations, researchers found that residents clearly understood the biodiversity changes unfolding around them, from shrinking fish sizes, the disappearance of bird species, and saltwater intrusion to mangrove loss and soil infertility. By using the DPSIR framework, the project captured how socio-economic pressures such as population growth, overharvesting, and limited livelihood options directly translate into ecological degradation.

More importantly, the research process itself became a platform for co-learning. By valuing community perceptions as data, the team showed that local knowledge can enhance scientific understanding and policy design. Findings from this multidisciplinary collaboration informed local policy dialogues, particularly around sustainable fisheries, mangrove restoration, and wetland governance. This work underscored that protecting wetlands is not only an environmental imperative but also a social one, vital for nutrition, income, and resilience against climate change. The study strengthened awareness among district authorities and national stakeholders about the need to integrate biodiversity considerations into local planning processes.

Future Prospects

Building on these insights, the project has laid a foundation for community-based biodiversity monitoring and ecosystem restoration in the Keta Lagoon area. Researchers advocate for participatory management models that empower local fishers, farmers, and women's groups as custodians of the lagoon's resources. Future steps include strengthening institutional collaboration between the Wildlife Division, District Assemblies, and research institutions to improve data sharing and policy coherence.

Scaling up the participatory DPSIR approach to other Ramsar sites across Ghana could enable early detection of ecological stress and inform adaptive management strategies. The study also calls for investment in alternative livelihoods, such as eco-tourism, aquaculture, and mangrove nurseries, to reduce pressure on natural habitats. As the team's findings emphasise, achieving both biodiversity

conservation and poverty reduction will depend on recognising communities not as beneficiaries but as partners in the stewardship of Ghana's wetlands.

> *"The study revealed the profound interconnection between human livelihoods and ecosystem health, showing that protecting wetlands not only supports environmental integrity but also provides food security, income, and resilience to climate change for human communities."*

MADAGASCAR

Mainstreaming Soil Biodiversity as a Nature-Based Solution to Innovate Fish Farming Systems: Valorisation of Native Species of Earthworms

Malalatiana Razafindrakoto,
FADES c/o Laboratoire des Radioisotopes

Photo Credit: iStock/Onuchcha

Challenge

Smallholder farmers in Madagascar face mounting challenges from declining soil fertility, limited access to fertilisers, and low agricultural productivity. These constraints also extend to aquaculture, a sector with strong potential to address food insecurity and provide income diversification. However, the lack of affordable and sustainable inputs hampers the productivity of small-scale fish farming systems, leaving rural households vulnerable to both economic and ecological stress. However, without affordable and sustainable means of production, small-scale fish farming systems struggle to reach their potential, leaving rural families exposed to economic hardship and environmental pressures.

Solution

The project tested a nature-based solution that integrates soil biodiversity into aquaculture through the use of vermicompost and earthworms. The research team experimented with locally available earthworm species to produce vermicompost that could enhance pond fertility and serve as protein-rich fish feed. The approach aimed to close nutrient loops between agriculture and aquaculture, improve fish growth, and promote ecological intensification. The team also conducted extensive training sessions with over 7,500 farmers across 270 sites, building awareness and local capacity to adopt vermicomposting practices.

Impact & Results

The results showed that vermicompost improved pond productivity by increasing plankton abundance and enhancing fish growth rates. Tilapia fry recorded better weight gain and feed conversion ratios when reared in fertilised ponds. The study also found that 25% of trained farmers recognised the benefits of vermicompost, with more than half actively practising it in their farms. The initiative thus generated not only scientific evidence but also community-level adoption, linking biodiversity valorisation with food security. It demonstrated that locally adapted earthworm species can replace costly imported ones, making sustainable aquaculture practices accessible for low-income farmers.

Future Prospects

This project lays the groundwork for a scalable agroecological model that unites soil and aquatic biodiversity management, offering practical solutions to improve food security, climate resilience, and rural livelihoods. The researchers plan to refine feed formulations and expand pilot sites, integrating vermiculture into national agricultural and aquaculture training programmes. The broader vision is to mainstream biodiversity-based innovations into Madagascar's development strategies, advancing sustainable livelihoods while regenerating ecosystems.

> *"More than science, this project gave farmers the tools to transform waste into wealth."*

VIETNAM

Mainstreaming Biodiversity in Vegetable Farming in Vietnam through Promoting Adoption of Low Chemical Pesticide Practices: A Discrete Choice Experiment Approach.

Nam Hoang Vu, Foreign Trade University

Photo Credit: iStock/guenterguni

VIETNAM

Challenge

Vietnam's vegetable sector, a key contributor to national food security and exports, faces a paradox: high productivity driven by excessive pesticide use has degraded biodiversity, damaged ecosystems, and endangered farmers' health. Despite mounting evidence of these impacts, the adoption of sustainable alternatives, such as integrated pest management and bio-pesticides, remains limited. Smallholders, often constrained by low incomes and risk aversion, continue to rely on chemical inputs, unaware of both the long-term ecological costs and the potential gains of low-chemical practices.

Solution

The research team used a discrete choice experiment (DCE) with 640 farmers across Hanoi and Lam Dong to identify what drives or hinders the adoption of Low Chemical Pesticide Practices (LCPPs). Through structured interviews and economic modelling, they evaluated how farmers balance profit expectations, installation costs, health benefits, and biodiversity outcomes when deciding whether to shift away from pesticide-intensive methods.

Impact & Results

The study provided the first quantitative evidence of farmers' preferences for sustainable farming in Vietnam. Results showed that health improvement and profitability are the strongest incentives for adoption, while biodiversity conservation alone is rarely a decisive factor unless coupled with economic gains. The findings directly informed policy dialogues on green agricultural transformation, providing empirical inputs for Vietnam's 2021–2030 Sustainable Agriculture and Rural Development Strategy. They also encouraged engagement between farmer unions, extension services, and policymakers to design incentive schemes that reflect farmers' real priorities.

Future Prospects

By combining economic, environmental, and behavioural insights, this project bridges the gap between biodiversity research and farmer decision-making. The team aims to collaborate with local authorities and agribusinesses to pilot LCPP demonstration farms and explore market-based certification models that reward biodiversity-friendly production. As Vietnam transitions toward sustainable agriculture, such evidence-based approaches can guide inclusive policies that protect both livelihoods and ecosystems.

Collaborative Projects

Awarded research teams were offered an incentive to go beyond their national contexts and collaborate across countries. These Collaborative Projects brought together awardees working on related themes to jointly explore biodiversity and development challenges in different ecological and socio-economic settings.

Through this top-up funding, individual grantees received additional resources to co-design research questions, compare data, and share methodologies, strengthening the programme's multidisciplinary character. Despite facing logistical and contextual challenges, the collaborations fostered meaningful knowledge exchange, mutual learning, and a richer understanding of how biodiversity mainstreaming can be adapted across regions.

FIJI 🤝 GHANA

Assessing the Role of Different Types of Knowledge for Mainstreaming Biodiversity Conservation in Ramsar Sites in Fiji and Ghana

Principal Investigators: Lavenie Tawake (Fiji) and Margaret Fafa Akwetey (Ghana)

Embedding locally appropriate communication approaches into wetland management plans is essential for strengthening community participation and long-term stewardship.

Photo Credit: Wikimedia Commons

Challenge

Wetlands in both Ghana and Fiji face mounting pressures from human activity, including overfishing, pollution, and land-use change. Despite their global ecological significance, there is a limited translation of scientific evidence into accessible, actionable knowledge that informs community engagement and policy decisions, particularly in the Global South. Consequently, many Ramsar sites lack effective, inclusive communication frameworks that integrate both scientific and local knowledge into their management. Policymakers often operate without sufficient understanding of community perspectives, while local users remain disconnected from national conservation agendas.

Solution

The collaborative project united researchers from the University of Cape Coast (Ghana) and the University of the South Pacific (Fiji) to co-design a study exploring how communities perceive, value, and communicate biodiversity knowledge. Using structured interviews with over 550 wetland users and landowners across the Keta Lagoon Complex Ramsar Site and Upper Navua Conservation Area, the team developed a participatory communication framework tailored to local contexts. They identified trusted communication channels, such as community gatherings, radio programmes, and training-of-trainers models, as the most effective ways to engage and educate. For strengthening biodiversity communication, the study proposes practical solutions such as empowering local messengers and traditional leaders to champion conservation messages, integrating traditional and scientific knowledge in decision-making, and establishing feedback mechanisms that ensure community voices inform policy and management.

Impact & Results

The project produced one of the first cross-country analyses of biodiversity knowledge exchange between Africa and the Pacific. It revealed that while Ghanaian communities favoured oral and radio-based outreach, Fijian landowners preferred capacity-building through peer training and social media. These insights directly informed national wetland management discussions in both countries and strengthened collaboration among local authorities, NGOs, and traditional leaders. Building on these insights, the team designed a practical communication framework to strengthen dialogue between scientists, policymakers, and local communities. The framework outlines practical steps for co-designing communication strategies, including the identification of key actors and knowledge sources, as well as trusted messengers and channels. It stresses the importance of interactive communication, which facilitates both the dissemination of information from scientists and agencies to communities and the integration of community feedback and traditional knowledge into management decisions. The practical communication frameworks now serve as blueprints for community engagement and knowledge exchange around Ramsar sites in data-limited settings.

Future Prospects

The collaboration demonstrated the significance of cultural differences in cross-regional learning in biodiversity mainstreaming, particularly in how stakeholders communicate, share knowledge, and interact with the wetland. For instance, while oral and radio-based outreach resonates more in Ghana, peer-to-peer and digital communication are stronger in Fiji. These insights provide a foundation for adapting communication frameworks to diverse local contexts across other Ramsar sites. Their work underscores that successful biodiversity conservation depends as much on how knowledge is shared as on the science itself.

> *"Embedding locally appropriate communication approaches into wetland management plans is essential for strengthening community participation and long-term stewardship."*

MADAGASCAR VIETNAM

Agroecology for Biodiversity Mainstreaming and Welfare in Africa and Asia: A Comparative Study on Organic Fertiliser Utilisation

Principal Investigators: Malalatiana Razafindrakoto (Madagascar) and Nam Hoang Vu (Vietnam)

Two continents, one goal: restoring soil life for farmers' prosperity

Photo Credit: iStock/boyloso

Challenge

Agricultural intensification has long been seen as key to boosting productivity, yet it often comes at the cost of soil degradation and biodiversity loss. In both Madagascar and Vietnam, farmers face declining yields, high input costs, and ecosystem depletion from chemical fertiliser overuse. A shared challenge across both contexts was how to balance productivity and profitability with ecological sustainability.

Solution

Researchers from the University of Antananarivo (Madagascar) and the Foreign Trade University (Vietnam) collaborated to assess the potential of agroecological practices, focusing on the use of organic fertilisers derived from local materials, including earthworm compost and crop residues. Through field experiments, farmer interviews, and economic modelling, they compared adoption drivers, cost-effectiveness, and ecological benefits in both countries. The study applied a discrete choice experiment to capture farmers' preferences and barriers to transitioning away from chemical inputs.

The study identified that locally produced organic fertilisers, such as earthworm compost and crop residue-based composts, offer a practical and sustainable alternative to chemical fertilisers in both Madagascar and Vietnam. These agroecological options help restore soil biodiversity, reduce production costs, and maintain yields while minimising environmental impacts.

The joint research between the University of Antananarivo and the Foreign Trade University provided the scientific basis for this solution through field trials, farmer interviews, and economic modelling. The discrete choice experiment helped pinpoint key incentives and barriers to adoption, paving the way for targeted extension strategies and supportive policies.

Impact & Results

The project provided robust, comparative evidence that organic fertiliser use enhances soil biodiversity, reduces input dependency, and supports farmer income in both African and Asian contexts. It strengthened collaboration between research institutions and agricultural extension agencies, helping local policymakers recognise agroecology as a viable pathway to sustainable intensification. In Madagascar, the results informed discussions on integrating soil biodiversity management into national agricultural training curricula. In Vietnam, the findings supported policy dialogue on reducing chemical fertiliser subsidies.

Future Prospects

Building on this collaboration, both research teams aim to establish long-term demonstration plots and South–South knowledge exchanges to scale agroecological practices. The study's integrative approach, combining ecological science, economic analysis, and farmer perspectives, highlights the promise of transdisciplinary collaboration in transforming food systems toward resilience, biodiversity protection, and sustainable livelihoods.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