UNHCR The UN Refugee Agency | Innovation Section

A Rohingya Energy Ambassador trained at the Green Innovation Hub performs maintenance on solar street lights in Kutupalong refugee camp, Bangladesh

Environment and Climate Action Innovation Fund

Areas of Exploration

The Environment and Climate Action Innovation Fund supports colleagues to work with communities to develop sustainable solutions that address the impacts of the environmental and climate crises. It supports the protection, adaptation, and resilience of forcibly displaced and stateless people, while helping preserve and rehabilitate the environment. It nurtures early-stage innovations that contribute to UNHCR's Strategic Framework for Climate Action and Operational Strategy for Climate Resilience and Environmental Sustainability.

The areas of exploration the Fund prioritises are aligned to these strategies. This document provides more information about these areas.

Please note, however, that the following list is not exhaustive and the Fund remains open to creative initiatives addressing other challenges identified by UNHCR colleagues alongside forcibly displaced and stateless people.

1. Access to resilient and sustainable services

A South Sudanese refugee in Palorinya refugee camp, northern Uganda tends to lemongrass planted around her home, a nature-based solution to support malaria prevention

Community-based environmental management: How might we integrate ecosystem-based approaches and support thriving environments in our community-based protection work?

What it is: Thriving environments can have positive impacts on a wide range of services and opportunities, from meeting basic needs to health and wellbeing at both the individual and community level. Addressing environmental challenges prioritized by communities reduces risks and creates social and environmental co-benefits as well as supporting community-led action. Examples include empowering women in resource management or restoring degraded environments to foster social cohesion.

Why it matters: Environmental degradation can lead to increasing risks and vulnerabilities, such as increasing difficulty in access to resources, greater exposure to hazards and compounding existing challenges, particularly for more vulnerable groups. Ensuring an AGD approach can help address inequalities or impacts disproportionately faced by different groups such as women and indigenous communities. Community-based environmental management can support long-term environmental regeneration and sustainable natural resource management while empowering community leadership and resilience.

Resources and examples:
- [Trialling a nature-based solution for a healthier environment and malaria prevention](#) while [improving overall community wellbeing](#)
- [Community-based solutions to protect communities and nature in Bangladesh](#)
- [Community-based environmental restoration for healthier environments and improved livelihoods in Colombia](#)

- [Working with communities to nurture new ideas that respond to the environmental challenges they face](#)
- [Women mappers for the environment: Developing data to support environmental restoration strategies](#)

Circular economy and sustainable waste management: How can we integrate a circular economy approach to UNHCR's activities and ways of working and improve waste management services?

What it is: Different types of solid waste can create many hazards, but they are also resources that can be effectively reused and repurposed to extend their life and avoid the need for new resources and inputs, reducing costs. This area looks at new approaches not only to address the challenge, but harness opportunities from a more circular approach that both manages existing waste and reduces it in the first place. Reusing and repurposing waste can support livelihoods, for example, through repair, recycling, and circular-economy businesses. Improved product design and durability can also extend lifespans.

Why it matters: Waste management remains a key challenge in displacement settings – which often lack sufficient services for safe disposal, particularly of hazardous materials – significantly impacting livelihoods and health. Reliance on disposable, single-use or limited-durability items and limitations on repairability increases waste generated and subsequent costs. Additionally, displaced people often settle in marginalised areas that are not only poorly covered by local services but also disproportionately affected by waste that is produced elsewhere.

Resources and examples:
- [Repurposing plastic waste for more durable shelter solutions](#)
- [Establishing an e-waste management system](#)

WASH: How might we design more eco-friendly water, sanitation, and hygiene approaches for a healthier environment for refugees and host communities?

What it is: Water, sanitation, and hygiene (WASH) services face high demands and increasing stresses. Implementing innovative and sustainable WASH solutions – such as more sustainable natural resource management, water-saving technologies, biodegradable sanitation products, and waste-to-resource initiatives – offers a way forward. New approaches can help meet urgent humanitarian needs without creating long-term harm to ecosystems that would negatively impact water resources in future.

Why it matters: Access to water, sanitation, and hygiene is a basic need and integral part of responses to displacement. Interventions, however, can be unsustainable and have negative environmental impacts. Refugees and host communities often share already limited natural resources which are being further stressed by climatic change. Traditional humanitarian WASH solutions can unintentionally deplete water, pollute land, or generate unsustainable waste. More resilient and environmentally friendly WASH interventions support longer term sustainability of these systems, build resilience, and safeguard public health for displaced people and their hosts.

Resources and examples:
- Innovating to anticipate outbreaks through waste-water based epidemiology
- Solarizing water systems with innovative financing mechanisms
- UNICEF exploration of managed aquifer recharge

Energy: How might we create and improve access to affordable, reliable, renewable, and clean energy solutions for refugees and host communities?

What it is: Energy is essential for safety, dignity, and self-reliance. But for many refugees and host communities, access is often expensive, unreliable, and polluting. Households rely on diesel, firewood, or other unsustainable fuels that degrade local environments and limit livelihood opportunities. Innovative approaches can shift this reality – unlocking cleaner cooking options, from efficient cookstoves to creative financing, and sustainable access to lighting and power through solar systems supported by new models, market-based approaches, partnerships, and stronger maintenance.

Why it matters: Access to clean, reliable energy transforms daily life for refugees and host communities. It reduces health risks from indoor air pollution, enhances safety after dark, and opens doors to education, healthcare, and livelihoods. Renewable solutions also safeguard fragile environments, cut greenhouse gas emissions, and ease pressure on shared resources. Expanding affordable clean energy builds healthier, more resilient communities and supports a more sustainable future for all.

Resources and examples:
- Tailoring solar energy to local contexts
- UNHCR Annual Report on Sustainable Energy
- Reforestation and clean cooking through the Refugee Environmental Protection (REP) Fund
- Humanitarian Energy Knowledge Hub
- UNEP – Sustainable energy in situations of displacement

2. Preparedness, adaptation, and building resilience

A community elder works on the urban gardens established in the outskirts of Medellin, Colombia demonstrating techniques to young gardeners

Environment action for protection: How can environmental and climate action initiatives that build adaptive capacity and resilience contribute to protection outcomes?

What it is: With environment and climate action being relevant across so many spheres, there are many ways in which innovative approaches in this space can deliver protection outcomes, from improving wellbeing, to reducing risks. It can also be an entry point for working on social cohesion, inclusion, and resilience by addressing challenges affecting displaced and host communities alike. Protection and environmental challenges can be linked (for example, gender-based violence exacerbated by environmental degradation) or independent (for example, addressing access to resources to bring communities together). Opportunities can be tailored to test locally relevant protection co-benefits of environmental regeneration.

Why it matters: Natural environments provide essential support and services to people, not only those hosted in them, but also further afield. At the same time, dwindling resources, environmental degradation, and impacts of climate change compound existing vulnerabilities, increase conflicts and can drive further displacement, creating protection challenges. Impacts of environmental and climate shocks and stresses are also disproportionately felt by different

demographics. For example: women experience more restricted access to resources and this, in turn, heightens protection risks; indigenous communities experience further marginalization and are less able to depend on traditional methods. Initiatives in this space can look to harness nature and environmentally sustainable solutions to address risks and find new ways for UNHCR to deliver its mandate.

Resources and examples:
- [Seeds of Solace: Inter-generational urban gardening for social cohesion](#)
- [Harnessing the healing potential of nature: Urban gardening and access to nature for MHPSS and inclusion](#)
- [Nature's shield: How beehives offer a solution to human-elephant conflict, improving livelihoods and safety](#)

Community-based preparedness and resilience: How might we work with communities to enhance skills, systems, measures, and strategies that are climate adaptive and enable improved responses to environmental shocks and stresses?

What it is: Displaced people live in some of the most hazard prone areas, face compounding risks, and may have limited coping strategies. Community-based preparedness and resilience strengthen locally led skills and systems for disaster risk management, climate adaptation, and greater resilience to shocks. Innovative approaches in this space can look to address key barriers or limitations affecting capacities for preparedness and response, such as access to financing, reliable information, and early warning systems.

Why it matters: Displaced communities are facing increased risks while restrictions and lack of inclusion in preparedness and response frameworks limit their individual capacities as well as overall response effectiveness. In the event of disasters, however, communities are always the first line of response. Ensuring community-based preparedness and resilience ensures strategies are locally relevant, inclusive, and meet the priorities identified by refugees.

Resources and examples:
- [De-risking investment in local adaptation – strategies including parametric insurance](#)
- [Uncovering climate vulnerabilities faced by refugees in Jordan](#)
- [Quantifying the effects of climate and conflict in forced displacement](#)
- [Community-Based Resilience-Building: A UNDP Guidance Note](#)
- [UNHCR Resources: Strengthening climate adaptation and resilience](#)
- [UNDRR: Using technology to reduce disaster risk](#)

Sustainable settlements: How might we design more environmentally sustainable settlements to ensure they and surrounding environments thrive?

What it is: This area encompasses work on settlement planning in ways that consider environmental sustainability, enhance the natural environment, and ensure resilience to future shocks and stresses. It should build on existing settlement planning guidelines, tools, and recommendations on environmental sustainability, disaster risk reduction, and resilience to devise new ways in which this can be delivered and enhanced, particularly as climate shocks and stresses increase in severity.

Why it matters: Settlements can take a great toll on the environment, which in turn impacts the future response to displacement crises. This can involve anything from increased exposure to hazards – for example, due to deforestation and erosion – to declines in natural resources making service delivery more costly and limiting livelihoods. Planning with environmental sustainability in mind is essential to maintain and create new opportunities for the future.

Resources and examples:
- UNHCR environmental guidelines

Shelter: How might we design affordable and sustainable housing solutions in camp, non-camp, and urban settings that are adapted to local environmental and climatic conditions?

What it is: Housing solutions remain a key part of UNHCR's responses in all types of displacement contexts. Innovative solutions in this space look to create more environmentally sustainable and climate adaptive solutions that can be deployed through localized and community-designed approaches. These can innovate in a range of areas to address diverse challenges – for example, different ways of meeting living space needs, life cycle management of shelters, localization of responses, improving suitability of shelters in the face of changing climatic conditions, and so on.

Why it matters: Safe and dignified housing is an essential need. Emergency shelter can only meet this need in the short term, however, as displacement becomes ever more protracted and resources diminish, providing housing is both costly and often inadequate. Responses also often rely on the distribution or use of specific designs from global stockpiles, entailing significant carbon footprints, limited local adaptability, and failure to meet the needs of different groups. Finding locally appropriate shelter solutions that adapt both to family needs and the local environment is essential for providing more livable and resilient housing.

Resources and examples:
- [Promoting eco-friendly construction and other climate action strategies in Roraima, Brazil](#)
- [UNHCR Shelter and Sustainability Overview](#)

Sustainable livelihoods and/or green skills: How can we create or support opportunities for forcibly displaced people and their hosts to develop green skills, future-proof livelihoods, and create net-positive change for the environment?

What it is: Skills, jobs, and economic opportunities are changing and need to change, both to harness the opportunities of the green economy and ensure adaptation to changing environments. There are many opportunities in this area to ensure refugees are not only included in this transition but help lead it. Innovative solutions in this space can create and support opportunities for forcibly displaced people and host communities to develop and apply green skills – for instance, via sustainable agriculture, wastewater management, renewable energy, or entrepreneurship opportunities that further sustainability.

Why it matters: Access to livelihoods remains a key challenge for refugees globally. Work in the green economy and sustainable livelihoods can provide new ways for refugees to contribute to host communities and achieve self-reliance. If refugees are excluded from this transition, their adaptive capacity could be limited, and they could miss out on future livelihood options.

Resources and examples:
- [UNHCR Guidance and Country Examples on Economic Inclusion in the Sustainability Sector](#)
- [Developing skills of Rohingya refugees on electrical repair and maintenance to support their communities](#)
- [Green Skills Education for Refugees, Asylum Seekers, and Migrants: A Pathway to Promoting Social Equity and Addressing Climate Change](#)
- [Guidance Note on Advancing Green Skills and Businesses for Rohingya Refugees and Host Communities in Cox's Bazar, Bangladesh](#)
- [TBB Launches Coalition for Green Skills Pathways to Integrate Refugees into the Green Economy](#)

3. Sustainability in systems and processes

Refugee Housing Units in Northern Chile, close to the border with Peru

Procurement and process innovation: How might we collaborate with forcibly displaced people to make UNHCR's business systems and processes (e.g., procurement, logistics) more environmentally sustainable?

What it is: Initiatives in this space should build on extensive work undertaken to ensure greater environmental sustainability in UNHCR's way of working, such as improving supply chain activities to reduce environmental impacts, maximizing efficiencies, and ensuring processes harness local opportunities in collaboration with refugees – for example, by providing livelihoods or income generating opportunities. Innovations in this area could look at designing products or processes with refugees, localizing procurement, supporting local economies, and working with the knowledge and capacities of refugees – aiming to enable greater sustainability while ensuring co-design with end users.

Why it matters: Responses to displacement can often be highly detrimental to the environment, with a high generation of waste, emissions, and environmental degradation both in situ and elsewhere. UNHCR has a responsibility and commitment to implement more sustainable responses, which in turn can have positive impacts on future opportunities. Work in this space can have multiple co-benefits, including opportunities for refugees, greater efficiencies and costs savings, and reduced environmental impacts.

Resources and examples:

- Improving the sustainability of UNHCR's core relief items
- Recommendations Guide and Good Practices for Sustainable Purchases, from UNHCR Chile
- UNHCR sustainable supply initiatives

Environmentally responsible digital solutions: How can we mitigate the negative environmental impacts of an increasingly digitized world and provision of services through digital channels.
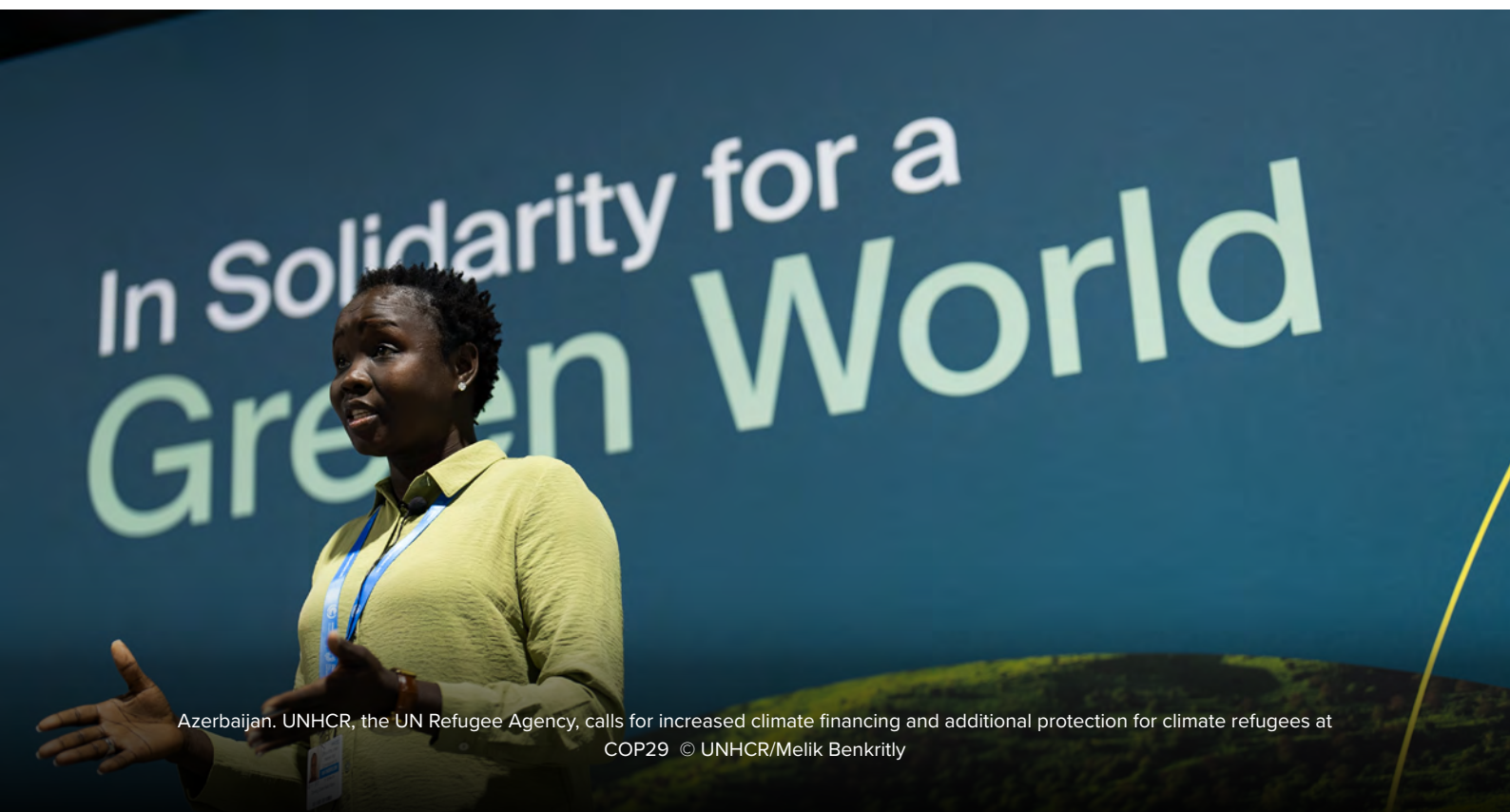
What it is: Integrating environmentally responsible practices into the design, deployment, and use of digital tools to support the green transition. This area aims to ensure UNHCR's digital transformation reduces environmental harm and does not exacerbate other vulnerabilities. For example, effective e-waste management — such as the reuse, repair, and safe disposal of electronic devices — helps minimize the carbon footprint of digitalization and reduces exposure to hazardous waste. Greening efforts also include circular economy models, energy-efficient infrastructure, and low-impact service delivery, reducing the environmental costs of expanding digital access

Why it matters: Digital technologies are becoming increasingly central not only for everyday personal use by refugees and humanitarian service delivery, but also to accelerate climate action. However, their environmental impacts — such as rising energy consumption and e-waste — cannot be overlooked. If not approached responsibly, digitalization can exacerbate climate change and contribute significantly to resource consumption and extraction. It is essential to improve efficiency and explore renewable energy and sustainable resource use. Environmentally responsible digital interventions ensure that solutions not only empower communities but also protect them and the environments they depend on.

Resources and examples:

- Recycling solar, pulling plastic: Innovating across diverse environments
- Advancing Digital Inclusion for Refugees and Vulnerable Groups
- Green Digital Transformation: How to Sustainably Close the Digital Divide and Harness Digital Tools for Climate Action
- The Environmental Impact of Digitalisation: What's Your Take on Sustainable Technology?

4. Protection, capacity, and participation in law and policy related to climate challenges

Azerbaijan. UNHCR, the UN Refugee Agency, calls for increased climate financing and additional protection for climate refugees at COP29 © UNHCR/Melik Benkritly

Enabling refugee inclusion and participation in national climate plans and processes: How might we better support or work with stakeholders to ensure the protection and inclusion of displaced people in the context of climate change?

What it is: Climate action and adaptation processes are ever more urgent to ensure the protection of refugees, but refugees are rarely included in relevant plans, frameworks, or activities. Innovations in this area could explore new ways to enable refugee inclusion in processes and enhance their participation and leadership – for example, developing ways to include refugees and considerations on displacement in national adaptation plans, disaster risk reduction strategies, or other frameworks. Initiatives could also look to develop evidence, build capacities, and explore collaborations with stakeholders to enhance this inclusion.

Why it matters: As policy and processes in this space develop, it is necessary to ensure displaced people are included at all levels of policy, planning, and action to respond to the impacts of climate change. To be effective, frameworks for response must consider both the needs of these communities and their capacity to lead action.

Resources and examples:
- An assessment of refugee and displaced people's participation in national adaptation planning by Refugee International
- Mapping human mobility in national and regional disaster risk reduction strategies and related instruments

Capacity strengthening: How might we further support interpreting refugee and human rights law for the protection of displaced and stateless people in diverse climate-affected contexts, including developing evidence and capacities for work in this space?

What it is: While not new, this area of work is still emerging. Innovations in this space could look at innovative ways in which UNHCR can strengthen its efforts in this space and collaborate with different stakeholders to ensure adequate considerations and legal protection for refugees in climate-affected contexts. This could involve, for instance, exploring how to work with different stakeholders, create a greater understanding of needs, or develop evidence.

Why it matters: UNHCR is providing crucial leadership in this space as the need for protection of refugees in climate-affected contexts grows. Advocating for the inclusion of refugees in policy, plans, and financing remains essential to address current and future impacts of the climate crisis on displacement. Exploring new approaches can help further this work, for example, promoting access to financing, addressing loss and damage, and evidencing current and potential impacts on displacement.

Resources and examples:
- Climate Change and Disaster Displacement: Practical Toolkit on International Protection
- Legal considerations regarding claims for international protection made in the context of the adverse effects of climate change and disasters

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