



**PROTECTING NATURE,
PROTECTING LIVES:**

**APPLYING NATURE-BASED
SOLUTIONS IN
HUMANITARIAN CONTEXTS**

The International Federation of Red Cross and Red Crescent Societies (IFRC) is the world's largest humanitarian network, with 192 National Red Cross and Red Crescent Societies and around 14 million volunteers. Our volunteers are present in communities before, during and after a crisis or disaster. We work in the most hard to reach and complex settings in the world, saving lives and promoting human dignity. We support communities to become stronger and more resilient places where people can live safe and healthy lives, and have opportunities to thrive.

Nature-based Solutions

Nature-based Solutions (NbS) are actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits (IUCN, 2020). NbS are an institutional priority for the IFRC network – recognized in its Plan and Budget 2021–2025; the Global Climate Resilience Programme of the IFRC; and the Climate and Environment Charter for Humanitarian Organizations. IFRC builds on its decades of expertise in community-based disaster risk reduction as a unique entry point for community-led NbS, focused on disaster risk reduction and climate change adaptation. IFRC has already applied NbS in various contexts, as showcased in this case study – and is actively capturing lessons learned as a basis for scaling up its work and partnerships in this area.

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KEY MESSAGES

- Nature, climate, and disasters are interlinked, with environmental degradation playing a direct role in amplifying disaster risk.
- As the number of people worldwide requiring humanitarian assistance continues to grow there is an urgent need to find new approaches to reducing risk and saving lives and livelihoods.
- Nature-based solutions are one approach. They are actions that combine the twin objectives of providing for **human well-being** and **protecting the environment**.
- Nature-based solutions are relevant for building resilience to climate change and to disasters. They can also be relevant in disaster response and recovery, including for food security and nutrition, water, sanitation, and hygiene, and health. As part of a broader set of solutions, they can reinforce and contribute to the humanitarian objectives of addressing human suffering and protecting lives.
- By rethinking how we work with nature – before, during, and after disasters and crises – we can build the immediate and long-term resilience of those affected. This involves shifting from short-term response to longer-term planning that integrates nature, risk reduction and the participation of those directly affected by disaster.

INTRODUCTION

Today over 300 million people – roughly one in twenty-nine worldwide – require humanitarian assistance.¹ Across every region of the world communities are experiencing the escalating impacts of climate change and environmental crises, with the most vulnerable people being hit the hardest. Increasingly the climate and environment crisis is becoming a sustained humanitarian crisis.

With climate change and weather-related disasters expected to reach unprecedented levels in the coming decades, humanitarian response and disaster risk reduction systems will struggle to keep up. The frequency and severity of disasters will increase, causing significant damage to people and the environment.² There is an urgent need to find new approaches that reduce risk, build resilience, and save lives.

1 [Global Humanitarian Overview](#), OCHA, Accessed November 17, 2022

2 [Working With Nature to Protect People: How Nature-based Solutions Reduce Climate Change and Weather-Related Disasters](#), IFRC & WWF, 2022

Nature-based solutions – actions that protect, manage, and restore ecosystems in ways that address societal challenges – are one powerful way to achieve this. When properly applied nature-based solutions can be a key tool in the fight against the interconnect threats climate change and environmental degradation brings to ecosystem health and to human well-being.

While the need to protect and save lives remains the foremost urgent focus of our humanitarian efforts, integrating nature-based solutions into how we respond to and recover from disasters and crises can provide multiple benefits relevant to humanitarian outcomes. These include further reducing disaster risk, contributing to livelihoods, and improving health and food and water security. Such benefits are directly tied to and intersect with the work of several key humanitarian sectors, including food security; nutrition; water, sanitation, and hygiene (WASH); shelter and settlements; and health.

Nature-based solutions are an institutional priority area for IFRC. By 2025 we have set a target for 100 National Societies to harness the power of nature through nature-based solutions. Achieving this requires improving our understanding of how nature-based solutions can be relevant across all phases of disaster management.

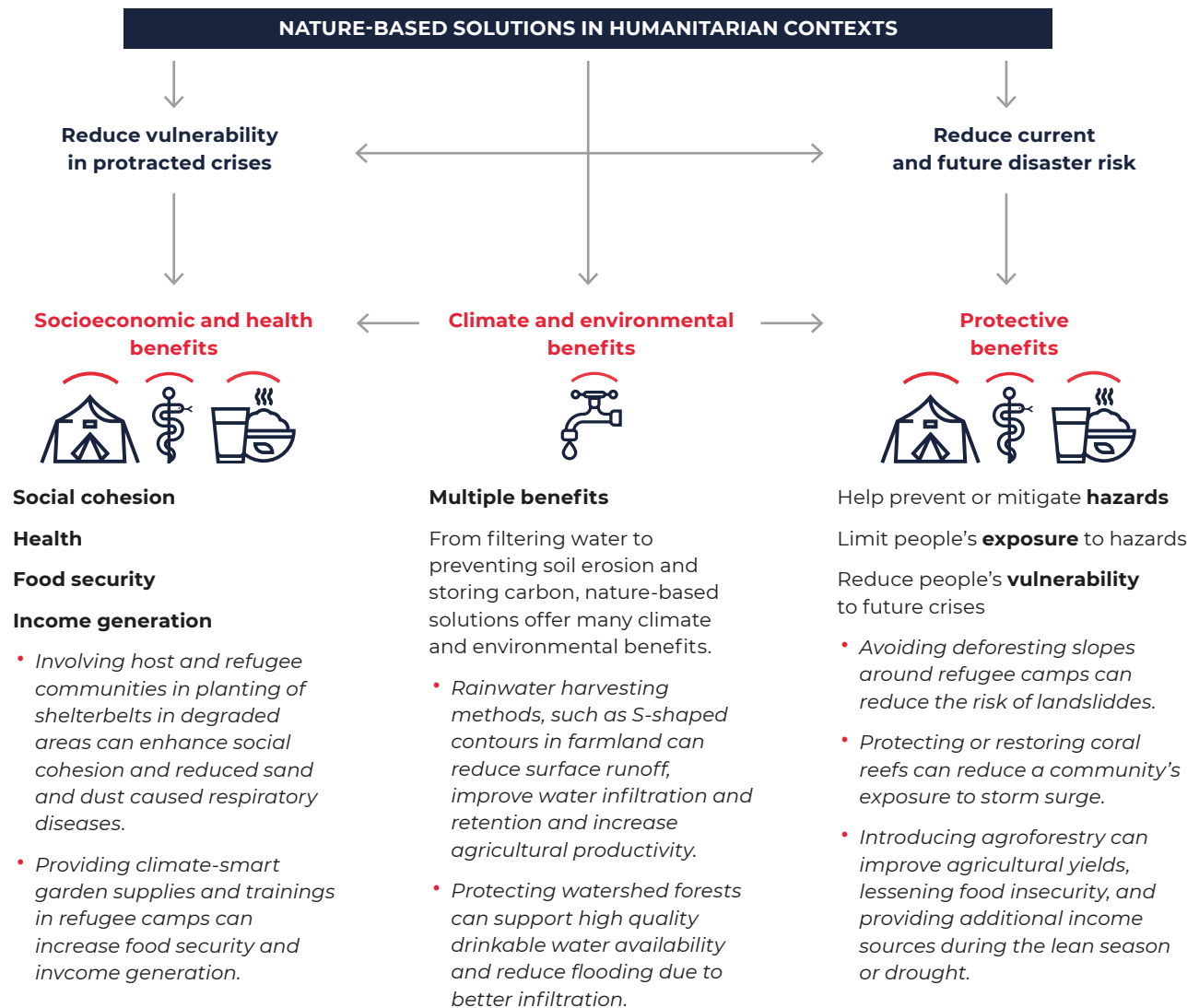
This paper is one tool to help do so. It outlines the relevance of applying nature-based solutions in humanitarian contexts and offers suggestions for how ecosystem-based considerations can be implemented across all phases of disaster management. Practical entry points for integrating nature-based approaches across key response sectors are provided. It also provides a pathway forward for scaling nature-based solutions to be transformational approaches that better manage the ever-increasing risk of disasters and protect the world's most vulnerable people.

USING NATURE-BASED SOLUTIONS TO SUPPORT HUMANITARIAN OUTCOMES

Nature-based solutions are actions that protect, sustainably manage, or restore ecosystems to address societal challenges and benefit human well-being and biodiversity.³ They include protecting and restoring forests, protecting mangroves and coral reefs, sustainably managing agroforestry systems, and conserving and restoring wetlands and watersheds. Figure 1 shows how nature-based solutions can be used in humanitarian contexts.

3 IUCN, 2016

Figure 1: Multiple Benefits of Nature-based Solutions in Humanitarian Contexts.



While nature-based solutions can be complimentary to environmental sustainability practices within the humanitarian sector, such as reducing the use of plastics in response, there are differences. Nature-based solutions aim to deliver a range of cross-cutting/multi-sectoral benefits and focus on both **protecting human well-being** and the **environment**. It is this aspect of resilience building – of helping people and the environment to be better prepared for, withstand, cope with, and recover from disasters and crises – that set nature-based solutions apart from other environmental or ‘greening’ approaches often found within the sector.

Nature-based solutions address **one or more major** societal issues while working to enhance the range of ecosystem services provided by the environment that support people, such as providing clean water, food, seeds, and materials essential to health, food security, and livelihoods. In this way, nature-based solutions offer multiple short-, mid- and long-term benefits that can support humanitarian outcomes:

- **Protective Benefits:** Nature-based solutions can address all three components of the risk equation. They can:
 - Help prevent or mitigate **hazards**.
 - Restoring deforested slopes surrounding refugee camps can reduce the risk of landslides.
 - Limit people's **exposure** to hazards.
 - Protecting or restoring coral reefs can reduce a community's exposure to storm surge.
 - Reduce people's **vulnerability** to future crises.
 - Providing climate-smart garden supplies along with trainings to support shelter gardens in refugee camps can increase food security.
- **Socioeconomic Benefits:** Nature-based solutions can provide food and water security. Approaches such as agroforestry can restore and strengthen food systems, helping to improve agricultural yields, lessening food insecurity, and providing additional income sources during the lean season or drought. In addition, nature-based solutions can reduce air, water, and soil pollution and create natural spaces that support physical and mental well-being and recovery.
- **Environmental Benefits:** From filtering water to preventing soil erosion, nature-based solutions offer many climate and environmental benefits. Realizing such benefits is important as humanitarians tackle growing risks brought about by environmental degradation and climate change, such as increases in the spread of zoonotic diseases between animals and people.

TIME, EXPERTISE, AND SCALE

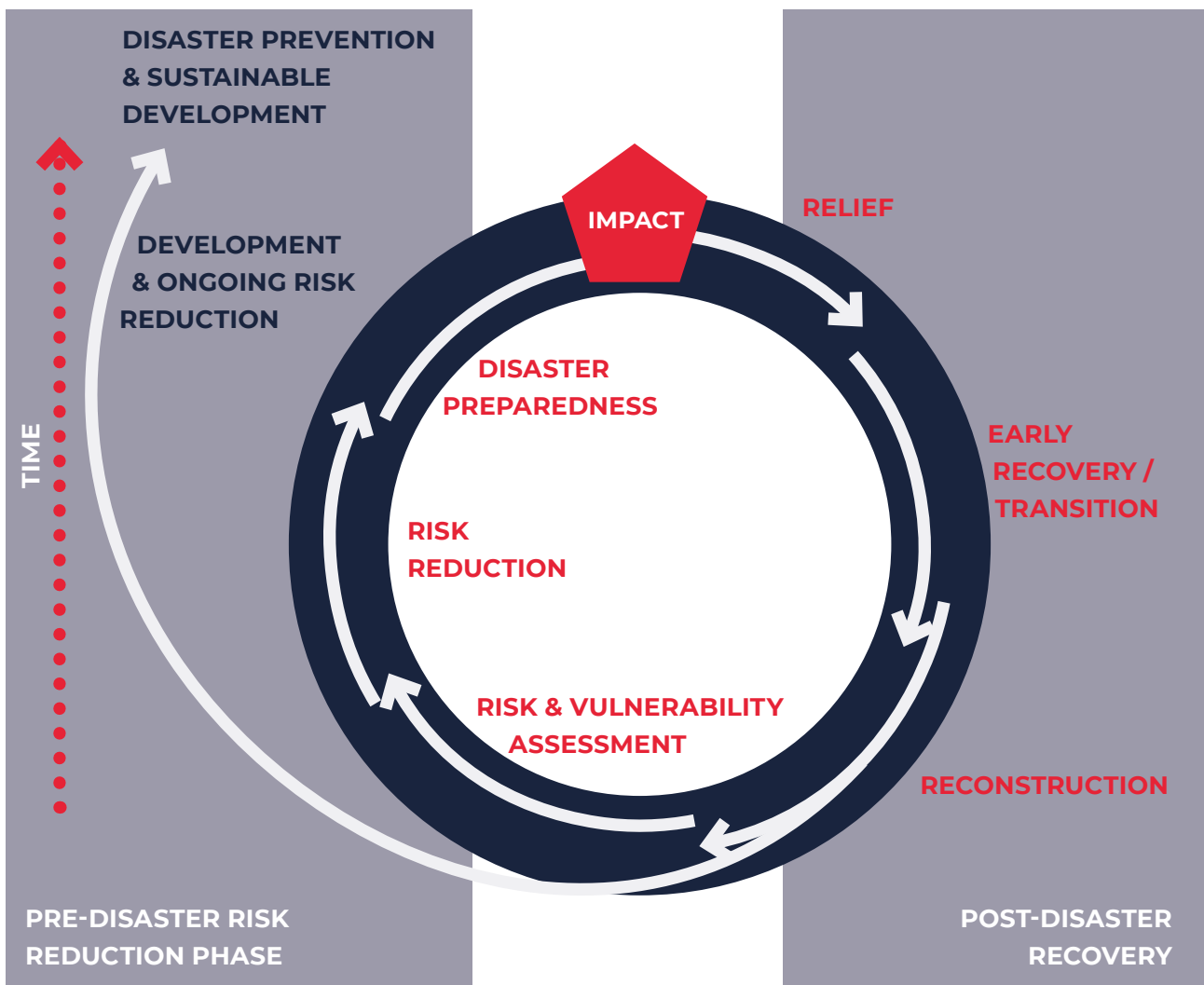
- As nature-based solutions involve protecting, managing, or restoring ecosystems, they often occur over a longer **timeframe**.
 - For example, it takes time for new trees to grow to maturity.
- They can require **expert** input, which may be a combination of traditional, Indigenous and local knowledge, and technical (e.g., hydrological, etc.) expertise.
 - For example, a project that combines climate-smart agriculture and disaster risk reduction could involve local community members sharing traditional knowledge on things like how growing seasons have shifted over time, as well as technical experts from the agricultural department of a university or research centre providing agroclimatology modeling.
- **Scale** can refer to the landscape or geographic scope of a nature-based solution as well as the dynamic cultural, social, and economic systems within which nature-based solutions are applied.
 - For example, taking a watershed or 'ridge-to-reef' approach is needed to consider how forest restoration upstream can influence flood risk mitigation for downstream communities. In addition to geographic scale, this systems approach might also consider the legal, cultural, and economic systems that influence upstream restoration.

NATURE-BASED SOLUTIONS: BEFORE, DURING & AFTER DISASTERS AND CRISES

Saving lives must remain the top priority for emergency operations. However, the environment and humanitarian aid are inherently interconnected, and by rethinking how we work with nature – before, during, and after disasters and crises – we can build the immediate and long-term resilience for both affected people and the environment.

Traditionally in disaster management, the emphasis has been on post-disaster response and pre-disaster preparedness activities. By shifting towards disaster prevention through activities such as long-term planning and investments that reduce underlying risk factors we can, in turn, reduce the impacts from hazards that people may face (Figure 2).

Figure 2: Disaster Risk Management and Response Spiral



Adapted from Brown, Donald & Francis, Katie & Hardoy, Jorgelina & Johnson, Cassidy & Satterthwaite, David & Dodman, David. (2013). Understanding the nature and scale of urban risk in low- and middle-income countries and its implications for humanitarian preparedness, planning and response.

Environmental considerations that support nature-based approaches can be incorporated at all stages of disaster management, from response and early recovery after a hazard event, through reconstruction, mitigation, and especially in the prevention phases:⁴

- **Response:** In the early efforts to provide shelter and other essential life-saving services there is a high risk of overexploiting natural resources and environmental degradation. Response preparedness plans that incorporate ecosystem protection and sustainable management are critical for safeguarding habitats that sustain livelihoods and provide other ecosystem services. Activities should avoid the over-use of natural products and unplanned habitat changes and should minimize waste and water pollution.
- **Recovery:** Minimizing environmental degradation during recovery can support the ‘do no harm’ principle and help avoid the (re)occurrence of environmental emergencies. Recovery also provides the opportunity to use nature-based solutions as a means to ‘build back better’ by reconstructing sustainable livelihoods based on healthy ecosystems. This contributes to longer-term disaster risk reduction and sustainable development.⁵
- **Reconstruction:** During the rebuilding phase, legislation to protect the environment should be followed and ecosystems must be restored.⁶ Environmental considerations and nature-based solutions should be carefully included in this phase. For example, consider environmentally sensitive areas such as wetlands when planning reconstruction, and avoid sourcing building materials such as sand or timber in a way that increases people’s vulnerability to future hazard events. The continued aim during reconstruction should be building back better to enhance the resiliency of people and the environment.
- **Prevention:** Prevention includes preparedness, assessment, and long-term risk reduction measures that address the underlying drivers of vulnerability and should be a continuous process throughout disaster management. Nature-based solutions are particularly relevant during prevention, as well-managed ecosystems provide critical services that reduce risk and help people adapt to a changing climate.

4 [Disasters and Ecosystems: Resilience in a Changing Climate Sourcebook](#). UNEP, 2019, p. 101

5 [Words Into Action: Nature-based Solutions for Disaster Risk Reduction](#). UNDRR, 2022, p. 131

6 [Working With Nature to Protect People](#), IFRC & WWF, 2022, p. 28

Table 1 shows how ecosystem-based activities that support nature-based solutions approaches to different degrees and scales can be implemented at all stages of disaster management.⁷

Phase	When	Objective	Main Actions	Nbs Component	Guiding Questions
Response	Hours to weeks	Save lives	Search & rescue	<ul style="list-style-type: none"> Avoid over-exploitation of natural products Avoid unplanned habitat changes Minimize solid waste & water pollution 	<ul style="list-style-type: none"> Are there environmentally sensitive areas where response is occurring? Is there an environmental contingency plan for the country (sample)? Has the environment been considered when choosing waste disposal sites?
			Emergency skills		
Recovery	Weeks to months	Secure livelihoods	Temporary shelter	<ul style="list-style-type: none"> Rapid Environment Assessments conducted Sustainable materials for recovery sourced Appropriate waste management Environmental management/protection for food and water security 	<ul style="list-style-type: none"> Has a Rapid Environmental Assessment or at least environmental screening such as using NEAT+ been undertaken? Are water sources appropriately protected and managed? Are agroforestry or permaculture practices considered for food provision? Are sustainable sources of energy provided?
			Restoring basic services (e.g, health, water)		
Reconstruction	Months to years	Reconstruct livelihoods	Housing & infrastructure	<ul style="list-style-type: none"> Environmentally sensitive reconstruction Sustainable materials sourced Improved waste management Ecosystem restoration Green Infrastructure 	<ul style="list-style-type: none"> Is an environmentally sensitive reconstruction plan in place? Is ecosystem restoration in degraded areas being undertaken? Are materials sourced from sustainable materials? Are natural areas, such as mangroves or sand dunes, that help buffer hazards protected or restored?
			Job creation		
Prevention		Risk and vulnerability assessments	Hazard & exposure	<ul style="list-style-type: none"> Combined ecosystem & risk/hazard mapping 	<ul style="list-style-type: none"> Do risk maps that consider ecosystems exist? (See the Opportunity Mapping Tool) Have an Enhanced Vulnerability and Capacity Assessment been completed?
			assess risk		
Development planning and risk reduction	Continuous	Hazard, vulnerability & exposure reduction	Risk sensitive land use planning (based on assessments)	<ul style="list-style-type: none"> Ecosystem & land management plans developed Ecosystem protection & restoration included in planning & zoning 	<ul style="list-style-type: none"> Have environmental considerations been incorporated into development plans? Are green (land) and blue (water) areas important for reducing risk protected, restored, or created?
			Evacuation plans		
Preparedness		Increase resilience	Early Warning Systems	<ul style="list-style-type: none"> Environmental emergency preparedness programmes developed 	<ul style="list-style-type: none"> Have environmental contingency plans been developed? Are ecosystems included in emergency preparedness plans?

APPLYING NATURE-BASED SOLUTIONS ACROSS HUMANITARIAN CLUSTERS



WATER, SANITATION AND HYGIENE (WASH)

“Over 1.1 billion people do not have access to clean water and more than 2.6 billion people do not have access to basic sanitation... The problems caused by a lack of access to safe water and sanitation are made much worse during disasters and crises.”⁸

Access to clean water is a human right and a human need. Yet by 2050 half the world’s population may no longer have safe water.⁹ In crises, inadequate water quantity and quality is often the underlying cause of health, food security, livelihood, and conflict-related problems. Harmful environmental management practices during response and recovery can directly impact access to safe water supply, with environmental degradation changing how water infiltrates the ground, leading to future water shortages and exacerbating the risk of drought or flooding.

Nature-based solutions can help return highly degraded environments back to productive, healthy systems that provide access to clean water and help increase the absorptive capacity of the ground, reducing flood risk and recharging groundwater basins, making it easier to cope during drought.

ASSESSMENT

Assessing risk and resilience is an important component of nature-based solutions. This includes considering nature-based solutions in environmental screening. Try to:

- Ensure adequate environmental expertise is incorporated across all program stages.
- Consider longer-term, landscape-scale assessment tools, like weather and climate models. Incorporate questions that draw on local knowledge of environmental patterns.
- Look for opportunities to integrate environmental considerations into existing vulnerability and environmental impact assessments.
- Remember to evaluate how humanitarian aid itself can cause or contribute to negative environmental impacts.¹⁰

There are many resources available such as IFRC’s [Enhanced Vulnerability and Capacity Assessment](#), CARE’s [Rapid Environmental Assessment Tool](#), PEDRR’s [Opportunity Mapping](#), and the JEU’s Nexus [Environmental Assessment Tool \(NEAT+\)](#). See the ‘[To Learn More](#)’ (below) for additional guidance.

8 [Humanitarian Coalition](#), 2021

9 [Sustainable Development Goal 6 Synthesis Report 2018 on Water and Sanitation](#), United Nations, 2018

10 [EHA Connect](#), 2022.

Opportunities to integrate nature-based solutions into WASH include:

	Response	Recovery & Reconstruction	Prevention
Water Quality, Quantity and Access			
Apply a landscape-scale (e.g., watershed) lens to map water-related risks, resources, and action planning. This includes engaging with or considering up- and downstream communities.			
Apply a multi-year lens when planning new infrastructure (like boreholes) that takes climate change into consideration to improve longer-term sustainability.			
Consider climate models, early warning systems, and population growth models that balance current water supply needs with future needs.			
Adopt 'multi-purpose' water supply solutions, such as: <ul style="list-style-type: none"> • Bioswales (vegetated channels) that attenuate storm water runoff and also provide space for cultivating aquatic food crops. • Combining water retention structures made from natural resources (such as sand dams) with other waterpoint sources, such as wells for cattle, to boost water and food security. 			
Apply low-tech water harvesting techniques in areas prone to drought to help recharge the water table during the wet season, such as: <ul style="list-style-type: none"> • Expanding a wadi's (a waterway that is dry except in the rainy season) underground storage capacity during the wet season to help boreholes continue to yield water during the dry season. 			
Improve water quality and quantity during floods and droughts by: <ul style="list-style-type: none"> • Using agroforestry, permaculture, and rain gardens. • Planting native plant species that help filter polluted waterways. • Reforesting and revegetating sloped areas surrounding settlements. 			
Waste Management			
Conduct integrated landscape assessments that consider topography, soil permeability, and ground and surface water (including seasonal variations) to avoid contaminating water resources.			
Develop Integrated Water Resource Management strategies in tandem with WASH to reduce effluent in waterways, vector- and water-borne diseases, and exposure to contaminated water.			
Promote approaches that help avoid environmental degradation through the collection, segregation of waste into organic and non-organic; composting of organic; and reuse or recycling of non-organic as much as possible.			

WASH Case Study: *In Uganda's Bukompe Refugee Camp, the Youth Initiative for Community Empowerment (YICE) is helping refugees gain new skills and increase their food security. Repeated cultivation of small plots had diminished the land's productivity, leading to food insecurity and a lack of household income. Through a permaculture program YICE taught refugees new farming skills that worked with, rather than against nature. Included in this was learning rainwater harvesting methods, where farmers designed the gardens with S-shaped contours to collect rainwater runoff. Doing so reduced surface runoff, improved water infiltration and retention and increased agricultural productivity.¹¹*



FOOD SECURITY AND NUTRITION

"In 2022, food insecurity reached unprecedented levels, both in scale and severity, with at least 205 million people currently acutely food insecure and requiring urgent assistance."¹²

With at least 80% of the world's hungriest people living in places prone to natural disasters and environmental degradation it is important to remember during humanitarian operations that the environment, food security, and livelihoods are co-dependent.¹³ Environment degradation through unsustainable practices and the increasingly variable and extreme weather caused by climate change affect the ability of ecosystems to provide basic food resources. This, in turn, exacerbates risk and increases the insecurity of affected people.

At a minimum, response should avoid *contributing* to further degrading the ecosystems that are important sources of food and livelihoods such as agricultural, ecosystems, freshwater and marine, or forest ecosystems. And by working *with* nature, response can protect and support food security and livelihoods in the short- to mid-term, while promoting environmental health needed to foster long-term food security – characteristics of nature-based solutions. This can reduce the risk of future hazards while also improving soil quality, water filtration, and other ecosystem services that food production and livelihoods depend on.

11 [Mapping the implementation and contribution of NbS for human wellbeing & enviro conservation in protracted refugee situations](#). Van Holsteijn, 2021

12 [European Commission, 2022](#)

13 [World Food Programme, 2021](#)

Entry points for integrating nature-based solutions approaches for food security and nutrition include:

	Response	Recovery & Reconstruction	Prevention
Include environmental considerations in food security assessments, such as: <ul style="list-style-type: none"> • Asking if there are opportunities to fortify foods supplies with Indigenous forest products. • Ecosystem health data such as soil moisture or carbon content levels. • Questions that look at the underlying drivers of environmental degradation (e.g., fuelwood collection). • Data on how shifting climate and weather patterns will impact the environment and livelihoods dependent on it. 			
Promote sustainable pasture management practices that keep soils healthy, provide suitable forage, and reduce food production costs.			
When pre-positioning food stocks, incorporate strategies that mitigate weather and climate-related shocks such as providing climate-resilient seeds that are native species.			
Enable farmers to use cash or vouchers to select climate-resilient, environmentally friendly seeds, fish stocks, and livestock.			
Using climate-smart agricultural practices that maximize available spaces such as rooftop or sack gardens, community plots, or terraced agroforestry.			
Partner with local knowledge keepers to create seedbanks for times of emergency.			
Promote climate-smart agribusinesses that include first-hand vocational training and small-scale learning plots.			
Integrating bio-rights or payment for ecosystem services practices into program design.			

Food Security and Nutrition Case Study: *In Olancho, Honduras high levels of deforestation have led to soil degradation and erosion, increasing landslide risk. To reduce disaster risk the Swiss and Honduran Red Cross implemented a sustainable land management project that included agroforestry and agroecology approaches. The project has reduced landslide risk while promoting food security. In most cases, the communities transformed the stabilized slopes and embankments into sustainable production areas, such as agroecological family orchards or medicinal gardens, allowing people to diversify their diets and generate income by selling surplus produce.¹⁴*

- **Resource recommendation:** See EHA Connect’s [Food Security, Nutrition and Livelihoods](#) for additional guidance.

14 [Working With Nature to Protect People: How Nature-based Solutions Reduce Climate Change and Weather-Related Disasters](#), IFRC & WWF, 2022, p. 34

CASH-BASED INTERVENTIONS

Taking a nature-based solution approach can help ensure cash-programming is delivered in an environmentally responsible way by incentivizing greener, climate-smart opportunities that help people restart their livelihoods. Where possible, offer cash-based assistance incentives for environmental protection, sustainable management, and/or restoration. Take care to ensure cash-based assistance does not exacerbate environmental degradation. For example, cash transfers that support shelter reconstruction should avoid the unsustainable harvesting of forest products. Also, local markets may not always be able to provide sustainably produced materials. See the [Green Response: Environmental Quick Guide](#) for more guidance.

Case Study: *Through the Kenyan Red Cross's Protracted Relief and Recovery Operations programme, people affected by drought are participating in an environment-based cash for assets programme where they receive cash compensation for digging water capture pans and planting trees. By improving soil and water conditions in the community food security and livelihood opportunities are increased. In addition, charcoal production, which is harmful to the health of the environment and people, is greatly reduced.*¹⁵



SHELTER AND SETTLEMENTS

“Shelter and settlement actors are at the forefront of preparedness activities, life-saving responses, and recovery phases. In this sense, these actors are acutely aware of their role in improving the environmental impact of humanitarian responses through a variety of greener and climate-smart approaches.”¹⁶

Shelter and settlements carry one of the highest risks of negative environmental impacts¹⁷ in humanitarian operations. The unsustainable sourcing of materials and waste generated during construction can degrade the environment and construction that occurs without fully considering the natural environment can place vulnerable people at greater exposure to hazards.




















Well-planned shelter and settlements that take nature into account can contribute to the safety and well-being of affected peoples. Sustainable forest management practices can provide access to renewable wood resources and longer-term, larger-scale nature-based approaches, such as restoring or protecting forests, can create viable sources of building materials while also providing protective benefits from hazards like floods and landslides.

¹⁵ [Green Response Quick Guide](#), IFRC, 2022, p. 70

¹⁶ [Greening Humanitarian Shelter and Settlement Responses](#), Interaction, 2021

¹⁷ [Thematic Sheet 1: Environment](#), Sphere, 2019

Opportunities to integrate nature-based solutions into shelter and settlement include:

	Response	Recovery & Reconstruction	Prevention
Take a landscape approach to site selection			
Consider and present nature-based solutions from the point of view of cost-efficiency, quality, and environmental benefits.			
Use green infrastructure like bioswales (vegetated depressions) to address rainfall or flood water drainage in settlements.			
Plan land use to be multi-purpose. For example, areas designated to absorb seasonal flooding can also be communal gathering spaces.			
Planting trees next to houses can provide solar shading and green roofs can provide thermal insulation.			
Utilize space surrounding shelters for subsistence activities such as fruit or vegetable gardens or rainwater harvesting.			
Promote the sustainable extraction of building materials. For example, excessive sand extraction from rivers can increase flood risk. Consider other materials, such as trees blown down by hurricanes, reusing disaster debris in reconstruction or renewable resources that regenerate quickly.			
Collaborate with technical experts to build environmental sensitivities into site design and to increase the technical capacity amongst affected people.			

Shelter and Settlement Case Study: *By 2018 refugee influxes into Rhino Camp and Imvepi Refugee Settlements in Uganda were resulting in increased pressure on the surrounding natural environment as people harvested trees for firewood, brickmaking, and timber. By 2019 nearly 60% of surrounding tree cover was depleted. This caused conflict with neighboring host communities, diminished water tables and crop yields, and amplified windstorms that, left unchecked by surrounding forests, damaged homes and food crops. To address this the International Centre for Research in Agroforestry established an agroforestry project that saw foresters and refugee youth recruited, a nursery established, and within three years 450,000 trees planted. Trees are grown in such a way that they can be sustainably harvested for firewood and housing construction. Additional benefits include the trees grown provide critical shade cover from intense heat and act as windbreaks during storms.*^{18,19}

18 [Mapping the implementation and contribution of NbS for human wellbeing & enviro conservation in protracted refugee situations](#). Van Holsteijn, 2021

19 [Restocking woody biomass to reduce social and environmental pressures in refugee-hosting landscapes](#). Duguma et al, 2019

Taking a *landscape approach* can be essential in accounting for the interconnected aspect of social, ecological, and economic systems. See [A Landscape Approach in 7 steps](#) for guidance.²⁰

The [IFRC Shelter Cluster](#) is developing environmental country profiles that provide guidance for environmentally sustainable shelter operations.

IFRC's [Participatory Approach for Safe Shelter Awareness \(PASSA\) Manual](#) outlines how to develop local capacity to identify solutions and strategies, including environmental planning, that reduce shelter-related risk.



HEALTH

“Approximately 60% of new emerging diseases – including COVID-19 – are zoonotic in origin, and approximately one-third of those are directly attributable to environmental degradation and human land-use changes.”²¹

People’s health and wellbeing are directly connected to the health of the environment around them. Green (e.g., forests or communal gardens) and blue (e.g., waterways) spaces can support mental health by lowering stress and promoting faster recovery from psychological events. They play an important role in providing clean air and water, essential to physical health. In addition, trees providing shade in heat-stressed regions.

Nature-based solutions can also help reduce the incidences of infectious diseases. Many emerging diseases are zoonotic (transmit from one species to another) in origin and are attributable to environmental degradation.²² For example, research has linked extensive deforestation in West and Central Africa to Ebola outbreaks in these regions.²³ Nature-based approaches that address environmental degradation and increase forest protection can reduce pandemic risk.

During crises, humanitarian operations can bolster ecosystem services through nature-based solutions. For example, in addition to health benefits nature-based approaches that work across sectors to protect forests or wetlands can also increase food and water security and provide protective benefits against natural hazards.













20 [A landscape approach for disaster risk reduction in 7 steps](#). CARE & Wetlands International, 2021

21 [Working With Nature to Protect People](#), IFRC & WWF, 2022, p. 37

22 Ibid

23 [Ecosystem-based Adaptation and Green Recovery. Building back better from COVID-19](#). FEBA, 2020

Strategies that build a nature-based approach into health include:

	Response	Recovery & Reconstruction	Prevention
Include integrated landscape assessments and flood management strategies to reduce or eliminate vector-bourn disease through: <ul style="list-style-type: none"> natural and hybrid drainages. situating latrines in areas of adequate drainage. using biological controls, such as native fish, to eliminate insects and increase food security. 			
Integrate an awareness of the benefits of intact natural spaces into community level health programs.			
Provide programs that address fears or common beliefs that could undermine the health of people and wildlife, and that promote co-existence strategies.			
Collaborate with WASH to ensure projects such as wetland restoration are well-managed water solutions that minimize mosquito breeding.			
Collaborate with Shelter to integrate mixed-used planning in settlements, such as agroforests, to increase nutrition and shade opportunities and reduce hazard risk.			
Collaborate on land restoration projects that offer health benefits. For example, green shelterbelts can provide protection from sandstorms and act as windbreaks, reducing exposure to dust and respiratory diseases.			
Work with Shelter to design integrated green spaces such as communal gardens that double as safe spaces to promote community dialogue and conflict resolution.			
Promote and distribute fuel-efficient stoves to replace the use of charcoal whose emissions are harmful to human health.			
Promote a One Health approach by working with local health officials and technical experts to support programs that protect or create natural spaces.			

Health Case Study: *The Dadaab refugee complex in Somalia is one of the largest in the world. Established in 1991, the area surrounding the camp is prone to soil erosion and drought. Increasing population pressure in the camp has accelerated land degradation. This loss of trees and shrubs has resulted in more exposure to wind and dust leading to an increase in respiratory diseases in the camp. Between 2012-2020 a Kenya Red Cross land rehabilitation project established fifteen green belts in the camps, three of which are fruit orchards. In addition to increasing food security, the belts provide much needed protective functions from sandstorms and act as windbreaks which has reduced people’s exposure to dust and respiratory diseases.*

THE WAY FORWARD

Nature-based solutions provide a framework to integrate the environment into humanitarian action and support its sustainability. When properly applied they can be practical, cost-effective actions that safeguard biodiversity and address human wellbeing across all phases of disaster management. Best practices that support this include:

- **Ensuring a rights-based approach:** Nature-based solutions should be based on inclusive, transparent, and empowering governance processes. The rights of rights of Indigenous peoples and local communities must be upheld, including their right to access, own, and benefit from natural resources. Any approach should be inclusive of and strengthen Indigenous Peoples and local communities, including those affected by crises, in decision-making processes and activities around disaster risk reduction, response, and recovery.
- **Creating collaborative and participatory partnerships:** Nature-based solutions can involve working across multiple sectors. This includes humanitarian clusters as well as affected peoples, local communities, Indigenous Peoples, environmental experts, civil society organizations, and other actors.
- **Plan at scale:** Response operations often target small-scale, worst-hit crisis and disaster-stricken areas. However, increasing the resilience of communities and reducing risk in the long-term often requires broader scale solutions, facilitated by appropriate plans, policies, and laws. Nature-based solutions are most effective when a systems perspective that considers the interconnecting social, cultural, and economic systems is taken.

What is needed is a paradigm shift from short-term humanitarian response operations towards longer-term, holistic planning that integrates nature, risk reduction, and the participation of those directly affected by disaster into response and recovery strategies. While working with nature may be new to many of us, by doing so we can build the immediate and long-term resilience of those affected by crisis.

Through nature-based solutions we can work together with nature to protect people.

TO LEARN MORE

- [A Sphere Unpacked Guide: Nature-based Solutions in Humanitarian Contexts](#) (2023): practical guidance for implementing NbS for WASH, food security and nutrition, shelter and settlements, and health.
- [The Green Response: Environmental Quick Guide](#) (IFRC, 2022): practical advice on how National Societies can improve the environmental sustainability of their work and of their organizations.
- [The Nature Navigator](#) (IFRC, 2022): a handbook and toolkit for practitioners that provides the foundations on working with nature to reduce disaster risk and build resiliency.
- [Climate and Environment Charter for Humanitarian Organisations](#) (IFRC and ICRC, 2021): fosters a strong commitment to climate action across the humanitarian community.
- [Working with Nature to Protect People](#) (IFRC and WWF, 2022): highlights how NbS can save lives and support vulnerable communities to adapt to and withstand the dangers of a warming world.

GLOSSARY

- **Agroforestry:** The intentional integration of trees and shrubs into crop and animal farming systems to create environmental, economic, and social benefits.
- **Bio-rights:** These provide micro-credits for sustainable development enabling local communities to refrain from unsustainable practices and be actively involved in environmental conservation and restoration.²⁴
- **Climate Smart Agriculture:** An integrated approach to managing landscapes that addresses food security and climate change. It seeks to achieve three outcomes: increased productivity; enhanced resilience; and reduced emissions.²⁵ See IFRC's [The Nature Navigator](#) for additional guidance.
- **One Health:** A collaborative, multisector approach that recognizes that the health of people is closely connected to the health of animals and our shared environment.
- **Payments for ecosystem services:** Incentives offered to farmers or landowners in exchange for managing their land to provide some sort of ecological service.
- **Resilience:** The ability of communities to anticipate, prepare for, reduce the impact of, cope with, and recover from the effects of shocks and stresses without compromising their long-term prospects.

²⁴ [Bio-rights in Theory and Practice](#), Wetlands International, 2009

²⁵ [The Nature Navigator](#), IFRC, 2022, p. 101

Other papers in the nature-based solutions series:

- [Drought, desertification, displacement and migration: can nature offer part of the solution?](#)
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