

*Environment in Humanitarian Action: Global Training Manual Template*

# Sustainable Land Management in Humanitarian Action







*This module was developed as part of the UNEP/OCHA Joint Environment Unit's project titled Localisation of Environment in Humanitarian Action, and is part of a template of a training manual consisting of:*

- 1 Introductory Module*
- 11 Technical Modules*
- 1 ToT Module*

*The template is an open source and available for any organisation or individual to use or refer to in the development and delivery of their Environment in Humanitarian Action training.*

*What distinguishes this training manual is its comprehensive and flexible framework. We encourage users to adjust the content to meet with the specific needs within their specific Contexts. We kindly ask that credit is given when using or adapting this resource.*

# MODULE OVERVIEW

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This module focuses on the importance of sustainable land management in humanitarian contexts, highlighting the critical role of preventing environmental degradation, restoring degraded habitats, and promoting long-term resilience. Participants will explore key concepts such as deforestation, land degradation, habitat disruption, and sustainable land management practices. Through interactive exercises, case studies, and discussions, participants will learn how to apply these concepts to real-world scenarios, ensuring that humanitarian actions support both immediate needs and long-term environmental sustainability

## Learning outcomes

By the end of this module, participants will:

1. Understand key concepts of sustainable land management in humanitarian contexts.
2. Identify the causes and impacts of unsustainable land management in humanitarian settings.
3. Develop strategies for sustainable land management and habitat restoration.
4. Apply best practices for mitigating land degradation and restoring disrupted habitats.
5. Create land management plans tailored to humanitarian scenarios.

## Estimated delivery time

**Total time:** 200 minutes

# CONTENT OUTLINE

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<b>1. Introduction to sustainable land management in humanitarian action</b>	<b>04</b>
◦ Introduction to Key Concepts.	
◦ Importance of Sustainable Land Management in Humanitarian Action.	
<b>2. Causes and impacts of unsustainable land management</b>	<b>07</b>
◦ Identification and classification of causes of unsustainable land management in humanitarian context.	
◦ Environmental and humanitarian impacts of unsustainable land management practices.	
<b>3. Sustainable land management and habitat restoration practices</b>	<b>09</b>
◦ Methods and techniques for sustainable land management	
<b>4. Case studies and best practices</b>	<b>11</b>
◦ Presentation of case studies that illustrate successful sustainable land management and habitat restoration practices.	
◦ Discussion of lessons learned and best practices.	

# FACILITATOR'S GUIDE

Step	Activity	Method	Duration	Materials Needed	Expected Outcomes
1	<b>Introduce the module. Provide an overview of the module, its objectives, and the schedule.</b>	Presentation, plenary discussion	10 mins	Slides, handouts	Understand the module's objectives and structure
2	<b>Explain the introduction to deforestation, land degradation, and habitat disruption. Overview of the significance of sustainable land management in humanitarian contexts. Introduce key principles and objectives.</b>	Lecture, plenary discussion	20 mins	Slides, handouts	Understand the importance of sustainable land management and habitat restoration
3	<b>Conduct an interactive exercise: defining key concepts in sustainable land management. Participants discuss and define key concepts in sustainable land management.</b>	Q&A, plenary discussion	30 mins	Flipchart, markers	Recognize the significance of sustainable land management
4	<b>Discuss the causes and impacts of unsustainable land management. Identify and classify the causes of deforestation, land degradation, and habitat disruption in humanitarian contexts.</b>	Lecture, Q&A	20 mins	Slides, handouts	Understand the causes and impacts of deforestation and land degradation
5	<b>Facilitate an interactive exercise: identifying causes and impacts. Participants classify different causes of unsustainable land management using examples.</b>	Q&A, plenary discussion	30 mins	Flipchart, markers	Identify the causes and impacts of deforestation and land degradation
6	<b>Explain sustainable land management and habitat restoration practices. Discuss methods and techniques for sustainable land management and restoration practices.</b>	Lecture, demonstration	20 mins	Slides, handouts	Learn sustainable land management and restoration practices
7	<b>Conduct an interactive exercise: developing land management plans. Participants develop sustainable land management plans for a hypothetical community or crisis situation.</b>	Q&A, plenary discussion	30 mins	Flipchart, markers	Develop effective land management plans
8	<b>Present case studies and best practices. Presentation of case studies that illustrate successful sustainable land management and habitat restoration practices in humanitarian contexts.</b>	Presentation, Q&A	30 mins	Slides, handouts, case study materials	Apply best practices from case studies
9	<b>Summarize and conclude. Review key points, reinforce main takeaways, and address any remaining questions.</b>	Presentation, Q&A	10 mins	Slides	Reinforce key learnings and address questions

## Facilitator notes

### Section 1: Introduction to sustainable land management in humanitarian action

#### Key points

- Introduce the fundamental concepts of sustainable land management relevant to humanitarian contexts.
- Highlight the importance of each concept in preventing land degradation and promoting environmental sustainability in areas affected by crises.
- Recognize the critical importance of sustainable land management in preventing environmental degradation and supporting long-term recovery in crisis-affected areas.
- Explore the specific reasons why sustainable land management is essential for effective humanitarian action

#### Background information

- Sustainable land management is not just a technical approach but a foundational element of effective humanitarian action. It ensures that the natural resources necessary for survival and recovery are preserved and that the land remains productive and resilient in the face of ongoing challenges.
- In humanitarian contexts, where rapid changes in land use are often necessary, implementing sustainable practices helps prevent the degradation of ecosystems, supports livelihoods, and reduces vulnerability to natural disasters. This approach ultimately contributes to the health, well-being, and long-term resilience of affected populations.

### Content development: Introduction to sustainable land management in humanitarian action

Table 1: Introduction to key concepts

Concept	Description	Impact	Real-World Application
<b>Sustainable land management</b>	Strategies for efficient use and conservation of land resources.	Prevents land degradation and promotes long-term environmental sustainability.	Implementing land management practices in refugee camps to prevent soil erosion and promote reforestation.
<b>Habitat restoration</b>	Processes for restoring degraded habitats to their natural state.	Enhances biodiversity and ecosystem services, supporting both environmental and human health.	Conducting reforestation and soil restoration programs in areas affected by humanitarian crises.
<b>Deforestation</b>	The clearing of forests for various purposes such as settlement and agriculture.	Leads to loss of biodiversity, increased greenhouse gas emissions, and disruption of ecosystems.	Clearing forests for refugee camps leading to habitat loss and increased carbon emissions.



<b>Reforestation</b>	Planting trees to restore forests in areas that have been deforested.	Increases carbon sequestration, enhances biodiversity, and restores ecosystem services.	Replanting native tree species in deforested areas of refugee camps to improve local environments and provide resources.
<b>Afforestation</b>	Planting trees in areas that were not previously forested.	Creates new forests, enhances biodiversity, and improves environmental conditions.	Establishing new forests in barren areas within or near humanitarian settings to combat desertification and improve air quality.
<b>Land degradation</b>	The decline in land quality caused by human activities such as overgrazing, deforestation, and unsustainable agriculture.	Reduces agricultural productivity, causes soil erosion, and leads to desertification.	Overgrazing in displacement areas causing soil erosion and reduced land productivity.
<b>Habitat disruption</b>	The disturbance or destruction of habitats due to human activities such as construction and pollution.	Causes loss of species, alters ecosystem functions, and decreases resilience to environmental changes.	Construction of temporary shelters leading to habitat fragmentation and loss of species.
<b>Acceptable damage</b>	The concept of damage that can be tolerated in the short term to achieve long-term humanitarian objectives.	Balances immediate humanitarian needs with long-term environmental sustainability.	Temporary land use changes in emergency settings with plans for restoration and sustainable use.

### **Importance of sustainable land management in humanitarian action**



#### **Prevention of environmental degradation**

Sustainable practices prevent deforestation, soil erosion, and habitat loss, preserving ecosystems.

##### **Importance Relevance to Humanitarian Action:**

Essential for maintaining ecosystems that provide essential services like clean water, food, and air, crucial for the survival of displaced and affected populations.



#### **Support for livelihoods and food security**

Sustainable land use ensures continued agricultural productivity and resource availability.

##### **Importance Relevance to Humanitarian Action:**

Vital for ensuring food security and livelihoods in crisis-affected areas, reducing dependency on external aid, and helping communities rebuild.



#### **Reduction of vulnerability to disasters**

Practices like reforestation and soil conservation reduce the risk of landslides, floods, and droughts.

##### **Importance Relevance to Humanitarian Action:**

Reduces the impact of disasters on vulnerable populations, ensuring that communities remain safe and resilient despite environmental challenges.





### **Promotion of long-term recovery and resilience**

*Restoring and maintaining healthy ecosystems aids in the recovery process.*

#### **Importance Relevance to Humanitarian Action:**

Helps create a stable foundation for long-term recovery and development, allowing communities to rebuild and thrive after a crisis.

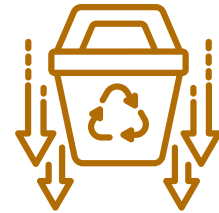


### **Enhancement of human health and well-being**

*Healthy ecosystems support the provision of clean air, water, and food.*

#### **Importance Relevance to Humanitarian Action:**

Directly impacts the health and well-being of affected populations, reducing the risk of disease and improving living conditions in both emergency and recovery phases.



### **Resource efficiency and waste reduction**

*Optimizing resource use and minimizing waste through sustainable land practices.*

#### **Importance Relevance to Humanitarian Action:**

Critical in crisis situations where resources are scarce, ensuring that land and materials are used efficiently, and waste is minimized.



### **Climate change mitigation and adaptation**

*Practices that sequester emissions and adapt to changing environmental conditions.*

#### **Importance Relevance to Humanitarian Action:**

Supports resilience to climate-related disasters, reduces the carbon footprint of humanitarian operations, and helps communities adapt to the impacts of climate change.



### **Community involvement and ownership**

*Engaging local communities in sustainable practices to ensure cultural appropriateness and sustainability.*

#### **Importance Relevance to Humanitarian Action:**

Promotes community ownership of recovery efforts, ensures interventions are sustainable, and builds local capacity for managing land and resources.



### **Protection of water resources**

*Managing and protecting land also ensures preservation of natural water bodies and groundwater.*

#### **Importance Relevance to Humanitarian Action:**

Ensures adequate water supply for drinking, sanitation, and agriculture, essential for maintaining health and supporting livelihoods in crisis situations.

## Section 2: Causes and impacts of unsustainable land management

### Key points

- Identify the causes of deforestation and land degradation in humanitarian contexts.
- Discuss the environmental and humanitarian impacts of land degradation and habitat disruption.
- Recognize the direct link between these causes and the challenges faced in humanitarian action.

### Background information

- Humanitarian operations can contribute to unsustainable land management due to the urgent need for resources, shelter, and food production, often resulting in deforestation, land degradation, and other environmental impacts.
- The conversion of natural landscapes for agriculture or settlements, resource overexploitation, and conflict-related activities are common in crisis settings, compounding environmental degradation.
- Climate change exacerbates these challenges by increasing the frequency and severity of natural disasters, further stressing already vulnerable ecosystems.
- Understanding the causes and impacts is essential for developing effective land management and restoration strategies.

### Content development: Causes and impacts of unsustainable land management in humanitarian context

<i>Cause</i>	<i>Description</i>	<i>Impacts</i>	<i>Examples and Linkage to Humanitarian Action</i>
<b>Habitat disruption</b>	The disturbance or destruction of habitats due to human activities such as construction and pollution, and other human activities in humanitarian contexts.	Loss of species, altered ecosystem functions, and decreased resilience to environmental changes.	Construction of temporary shelters in forested regions leading to habitat fragmentation and loss of species; Pollution from makeshift settlements in urban areas affecting local water bodies and ecosystems; Infrastructure development disrupting local wildlife habitats.
<b>Overexploitation of resources</b>	Unsustainable extraction of natural resources, including logging, water extraction, and mining, often driven by the need for building materials, fuel, and resources in crisis situations.	Depletion of resources, loss of biodiversity, and environmental degradation.	Excessive logging for construction materials for IDP camps; Overextraction of groundwater in drought-stricken areas to support emergency water needs, leading to resource depletion; Mining activities in conflict zones leading to land depleting mineral resources and degrading land.
<b>Conflict-related activities</b>	Land use changes due to conflict, such as the presence of landmines, IEDs, and other remnants of war, hindering land use and restoration efforts.	Land contamination, delayed restoration efforts, and risk to human life and biodiversity.	Landmines in post-conflict areas preventing the safe rehabilitation of agricultural land; Contaminated land from unexploded ordnance in conflict zones hindering restoration projects; Land degradation in war-torn areas exacerbated by the inability to clear dangerous remnants of conflict.

<p><b>Agricultural expansion</b></p>	<p>Conversion of forests and natural landscapes into agricultural lands, often to support displaced populations or address food security.</p>	<p>Deforestation, habitat loss, soil degradation, and increased greenhouse gas emissions.</p>	<p>Clearing forests to create agricultural projects for food security in refugee camps; Expanding agricultural land to support displaced populations; Converting wetlands into agricultural fields in response to humanitarian crises.</p>
<p><b>Unsustainable agriculture</b></p>	<p>Agricultural practices that degrade the land, such as overuse of pesticides and improper irrigation, often implemented in response to food security needs in humanitarian settings.</p>	<p>Soil degradation, water pollution, and reduced land productivity.</p>	<p>Use of chemical pesticides in emergency agricultural projects leading to soil and water contamination; Over-irrigation in refugee camp agriculture causing soil salinization and reduced yields.</p>
<p><b>Urbanization</b></p>	<p>Expansion of urban areas into natural habitats, including the development of temporary or permanent settlements for displaced populations.</p>	<p>Deforestation, habitat fragmentation, increased pollution, and reduced biodiversity.</p>	<p>Building new settlements for displaced communities in urban areas, leading to habitat loss; Urban sprawl in disaster-affected regions causing habitat fragmentation; Developing new towns for internally displaced persons (IDPs), impacting local wildlife.</p>
<p><b>Climate change</b></p>	<p>Changes in climate patterns, exacerbating the vulnerability of ecosystems and land in humanitarian settings, often leading to increased resource stress and further land degradation.</p>	<p>Increased frequency and severity of disasters, altered ecosystems, and land degradation.</p>	<p>Rising temperatures and erratic rainfall patterns exacerbating soil erosion and habitat loss in regions hosting displaced populations; Increased cyclones leading to forest degradation and landslides in refugee camps; Melting permafrost in conflict-affected areas disrupting local ecosystems and livelihoods.</p>
<p><b>Infrastructure development</b></p>	<p>Construction of roads, buildings, and other infrastructure for humanitarian purposes.</p>	<p>Deforestation, habitat disruption, soil erosion, and pollution.</p>	<p>Road construction for better access to disaster relief sites, disrupting ecosystems; Building dams affecting local habitats and water flow; Developing health facilities leading to localized habitat disruption.</p>
<p><b>Industrial activities</b></p>	<p>Pollution and land degradation caused by industrial processes, including those hastily set up in response to crisis situations or ongoing conflicts.</p>	<p>Contamination of soil and water, loss of biodiversity, and health hazards.</p>	<p>Industrial pollution from makeshift factories near humanitarian settlements; Oil spills in conflict zones contaminating soil and water; mining for minerals etc., Chemical runoff from temporary industrial areas in disaster-affected areas, impacting local agriculture.</p>

## Section 3: Sustainable land management and habitat restoration practices

### Key points

- Introduce methods and techniques for sustainable land management.
- Discuss restoration practices for degraded habitats.
- Explain the importance of community involvement in restoration efforts.

### Background information

- Implementing sustainable land management and restoration practices is essential to mitigate the environmental footprint of humanitarian operations.
- Restoration of degraded habitats can significantly enhance biodiversity and ecosystem services, benefiting both the environment and local communities.



## Content development: Sustainable land management and habitat restoration practices

<i>Practice</i>	<i>Description</i>	<i>Importance</i>	<i>Examples Linked to Humanitarian Action</i>
<b>Land management techniques</b>	Methods to sustainably use and conserve land resources, preventing degradation.	Promotes long-term sustainability and resilience of land resources.	Implementing crop rotation, agroforestry, and soil conservation practices in agricultural areas; Utilizing contour plowing to prevent soil erosion; Establishing protected areas to conserve biodiversity. In humanitarian settings, these practices can help sustain food production and prevent soil degradation in refugee camps and disaster-affected areas.
<b>Climate-resilient land management</b>	Incorporating climate predictions into land management, selecting climate-resistant crops, and planning for urban expansion.	Mitigates the impacts of climate change on land and communities, ensuring sustainable resource use.	In drought-prone regions, selecting drought-resistant crops and planning urban expansion to include green spaces helps mitigate the impacts of rising temperatures and erratic rainfall. Integrating these strategies into land management plans ensures long-term sustainability in humanitarian operations.



<b>Habitat restoration techniques</b>	Techniques to restore degraded habitats, including reforestation and soil rehabilitation.	Enhances ecosystem services and biodiversity, supporting environmental and human health.	Conducting tree planting programs and soil rehabilitation projects in areas affected by deforestation; Restoring wetlands to improve water quality and provide habitat for wildlife; Re-establishing native vegetation in areas degraded by human activity. In humanitarian contexts, these efforts can rehabilitate lands damaged by natural disasters and human settlements.
<b>Community involvement</b>	Engaging local communities in land management and restoration efforts.	Ensures the sustainability and success of land management and restoration projects.	Involving community members in planning and implementing reforestation projects; Establishing community-led conservation areas; Conducting educational workshops to raise awareness about sustainable practices. Engaging displaced populations and local communities in restoration projects can foster ownership and ensure the longevity of these initiatives.
<b>Agroforestry</b>	Integrating trees and shrubs into agricultural landscapes to improve land productivity and ecosystem health.	Increases biodiversity, enhances soil quality, and provides additional income sources for communities.	Planting fruit trees among crops to provide shade and additional food resources; Using hedgerows to reduce soil erosion and create wildlife corridors; Implementing silvopasture systems that combine forestry and grazing. In humanitarian actions, agroforestry can improve food security and livelihoods for displaced and host communities.
<b>Soil conservation</b>	Techniques to prevent soil erosion and degradation, maintaining soil health and productivity.	Preserves soil fertility, reduces sedimentation in waterways, and supports sustainable agriculture.	Utilizing terracing on slopes to reduce runoff and erosion; Applying mulch and cover crops to protect soil surface; Implementing no-till farming practices to maintain soil structure. These techniques are vital in preventing further land degradation in areas with high population density due to displacement.
<b>Soil restoration</b>	Techniques to restore soil health and productivity, including erosion control and organic farming practices.	Enhances agricultural productivity, prevents further land degradation, and supports ecosystem services.	Implementing soil rehabilitation projects in areas affected by overgrazing and deforestation. These efforts restore soil fertility and prevent further degradation in humanitarian settings, ensuring food security and sustainable land use.
<b>Reforestation and afforestation</b>	Planting trees to restore and create forests in degraded areas.	Increases carbon sequestration, enhances biodiversity, and restores ecosystem services.	Replanting native tree species in deforested areas; Creating community forests for sustainable wood harvesting; Establishing urban forests to improve air quality and provide recreational spaces. These efforts can mitigate the environmental impact of temporary shelters and camps set up during humanitarian crises.
<b>Green infrastructure</b>	Incorporating natural systems into urban planning to manage environmental challenges.	Reduces urban heat islands, manages stormwater, and enhances urban biodiversity.	Creating green roofs and walls to provide insulation and habitat; Developing urban parks and greenways to connect natural areas; Installing permeable pavements to reduce runoff and improve groundwater recharge. In urban humanitarian responses, green infrastructure can improve living conditions and reduce health risks.

<p><b>Integrated pest management (IPM)</b></p>	<p>Combining biological, cultural, and mechanical methods to manage pest populations in agriculture.</p>	<p>Reduces reliance on chemical pesticides, protects non-target species, and enhances ecosystem health.</p>	<p>Using beneficial insects to control pest populations; Implementing crop rotation to disrupt pest life cycles; Applying organic mulches to deter pests and enhance soil health. In humanitarian agricultural projects, IPM can safeguard food production and reduce health risks associated with chemical pesticide use.</p>
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## Section 4: Case studies and best practices

### Key points

- Present relevant case studies that illustrate successful sustainable land management and habitat restoration practices.
- Highlight lessons learned and best practices from these case studies.
- Provide real-world examples to reinforce the concepts discussed in previous sections.

### Background information

Case studies offer concrete examples of the challenges and solutions related to sustainable land management and habitat restoration in humanitarian contexts. By examining these real-world instances, participants can gain insights into effective strategies and practices that have been successfully implemented in various settings.



## Content development: Case studies and best practices

<i>Case Study</i>	<i>Context</i>	<i>Environmental Challenge</i>	<i>Humanitarian Response</i>	<i>Lessons Learned</i>
<p><b>Conflict-caused deforestation in Syria</b></p>	<p>Conflict-induced deforestation and its impacts</p>	<p>Severe deforestation due to the need for firewood, charcoal production, and military operations</p>	<p>Implementation of reforestation programs and sustainable land management practices; Community involvement in reforestation efforts</p>	<p>Importance of community involvement and continuous monitoring in successful reforestation efforts; Integration of traditional knowledge with modern restoration practices; Effectiveness of policies for protection and restoration of forest areas</p>



<p><b>Community-based natural resource management in Eastern Chad</b></p>	<p>Population displacement and pressure on natural resources leading to deforestation</p>	<p>Depletion of agricultural land, trees cut for fuel, shelter construction, and livelihood activities. Resulting in significant deforestation and land degradation, affecting both the environment and local communities.</p>	<p>With support from DG-ECHO, UNHCF implemented assisted natural regeneration (ANR) techniques and community-based reforestation operations. Engaged local communities in reforestation efforts, establishing local agreements to protect and manage natural resources.</p>	<p>Highlighted the importance of community involvement and local agreements to ensure the sustainability of reforestation projects. Demonstrated effective low-cost, sustainable restoration methods that can be replicated in other humanitarian settings.</p>
<p><b>Land Restoration in Rohingya Refugee Camps, Cox's Bazar, Bangladesh</b></p>	<p>The Rohingya refugee crisis in Cox's Bazar, Bangladesh, experienced a significant influx of refugees since 2017, resulting in the establishment of the world's largest refugee camp. This settlement increased pressure on the regional landscape, leading to severe land degradation.</p>	<p>7,220 hectares of forest land were degraded due to deforestation, tree removal, and land leveling for settlement purposes; The deforestation and land degradation caused increased risks of landslides, flash floods, and conflicts between refugees and host communities.</p>	<p>The Food and Agriculture Organization (FAO) coordinated with various stakeholders including UN agencies (IOM, WFP, UNHCR), local communities, and the Bangladesh Forest Department to implement a land restoration program; remote sensing and geospatial analyses were used to plan and monitor restoration activities; technical guidance was provided for land restoration, wood fuel supply management, and the establishment of plant nurseries; refugees and host communities were involved in site preparation, plantation management, and maintenance.</p>	<p>Stakeholder collaboration and community involvement are critical for the success of restoration projects; continuous monitoring and the use of modern techniques, such as remote sensing, enhance the effectiveness of land restoration efforts; integrating local and traditional knowledge with modern practices ensures sustainability and better outcomes; restoration activities improved living conditions for both refugees and host communities, reduced disaster risks, and enhanced ecosystem services.</p>

<p><b>Landmine clearance and conservation in the Okavango</b></p>	<p>Post-conflict conservation efforts in the Okavango Okavango River Basin, Angola.</p>	<p>The presence of landmines from past conflicts hindering conservation and land restoration efforts. The region is heavily mined due to Angola's 27-year civil war, posing a lethal threat to both the environment and local communities.</p>	<p>The HALO Trust implemented landmine clearance operations, allowing for the restoration of habitats and the protection of biodiversity in the region.</p>	<p>Landmine clearance is essential for safe conservation and land restoration. Engaging local communities in these efforts ensures sustainability and improves safety for both people and wildlife. The integration of conservation goals with landmine clearance operations enhances the effectiveness of both efforts.</p>
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## Section 5: Case studies and best practices

### Key points

- Present relevant case studies that illustrate successful integration of climate change adaptation and DRR in humanitarian contexts.
- Highlight lessons learned and best practices from these case studies.
- Provide real-world examples to reinforce the concepts discussed in previous sections.

### Background information

Case studies offer concrete examples of the challenges and solutions related to sustainable land management and habitat restoration in humanitarian contexts. By examining these real-world instances, participants can gain insights into effective strategies and practices that have been successfully implemented in various settings.



### Content development: Case studies and best practices

<i>Case Study</i>	<i>Context</i>	<i>Environmental Challenge</i>	<i>Humanitarian Response</i>	<i>Lessons Learned</i>
<p><b>Conflict-caused deforestation in Syria</b></p>	<p>Conflict-induced deforestation and its impacts</p>	<p>Severe deforestation due to the need for firewood, charcoal production, and military operations</p>	<p>Implementation of reforestation programs and sustainable land management practices; Community involvement in reforestation efforts</p>	<p>Importance of community involvement and continuous monitoring in successful reforestation efforts; Integration of traditional knowledge with modern restoration practices; Effectiveness of policies for protection and restoration of forest areas</p>

<p><b>Community-based natural resource management in Eastern Chad</b></p>	<p>Population displacement and pressure on natural resources leading to deforestation</p>	<p>Depletion of agricultural land, trees cut for fuel, shelter construction, and livelihood activities. Resulting in significant deforestation and land degradation, affecting both the environment and local communities.</p>	<p>With support from DG-ECHO, UNHCF implemented assisted natural regeneration (ANR) techniques and community-based reforestation operations. Engaged local communities in reforestation efforts, establishing local agreements to protect and manage natural resources.</p>	<p>Highlighted the importance of community involvement and local agreements to ensure the sustainability of reforestation projects. Demonstrated effective low-cost, sustainable restoration methods that can be replicated in other humanitarian settings.</p>
<p><b>Land Restoration in Rohingya Refugee Camps, Cox's Bazar, Bangladesh</b></p>	<p>The Rohingya refugee crisis in Cox's Bazar, Bangladesh, experienced a significant influx of refugees since 2017, resulting in the establishment of the world's largest refugee camp. This settlement increased pressure on the regional landscape, leading to severe land degradation.</p>	<p>7,220 hectares of forest land were degraded due to deforestation, tree removal, and land leveling for settlement purposes; The deforestation and land degradation caused increased risks of landslides, flash floods, and conflicts between refugees and host communities.</p>	<p>The Food and Agriculture Organization (FAO) coordinated with various stakeholders including UN agencies (IOM, WFP, UNHCR), local communities, and the Bangladesh Forest Department to implement a land restoration program; remote sensing and geospatial analyses were used to plan and monitor restoration activities; technical guidance was provided for land restoration, wood fuel supply management, and the establishment of plant nurseries; refugees and host communities were involved in site preparation, plantation management, and maintenance.</p>	<p>Stakeholder collaboration and community involvement are critical for the success of restoration projects; continuous monitoring and the use of modern techniques, such as remote sensing, enhance the effectiveness of land restoration efforts; integrating local and traditional knowledge with modern practices ensures sustainability and better outcomes; restoration activities improved living conditions for both refugees and host communities, reduced disaster risks, and enhanced ecosystem services.</p>
<p><b>Landmine clearance and conservation in the Okavango</b></p>	<p>Post-conflict conservation efforts in the Okavango Okavango River Basin, Angola.</p>	<p>The presence of landmines from past conflicts hindering conservation and land restoration efforts. The region is heavily mined due to Angola's 27-year civil war, posing a lethal threat to both the environment and local communities.</p>	<p>The HALO Trust implemented landmine clearance operations, allowing for the restoration of habitats and the protection of biodiversity in the region.</p>	<p>Landmine clearance is essential for safe conservation and land restoration. Engaging local communities in these efforts ensures sustainability and improves safety for both people and wildlife. The integration of conservation goals with landmine clearance operations enhances the effectiveness of both efforts.</p>

# ACTIVITIES

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## 1. Interactive exercise: defining sustainable land management

- Participants discuss and define sustainable land management in pairs\
- **Discussion points:** *What are the key concepts in sustainable land management? How can these be applied in humanitarian contexts?*

## 2. Interactive exercise: identifying causes and impacts

- Participants classify different causes of unsustainable land management, including deforestation, land degradation, and habitat disruption, using examples.
- **Discussion Points:** *What are the causes of deforestation, land degradation and habitat disruption? How do they impact the environment and humanitarian efforts?*
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## 3. Interactive exercise: developing land management plans

- Participants develop sustainable land management plans for a hypothetical community or crisis situation.
- **Scenario points:** *Develop a land management plan for a refugee camp facing deforestation and land degradation.*

## 5. Case study analysis

- Participants analyze provided case studies and discuss lessons learned and best practices.
- **Discussion points:** *How were sustainable land management and habitat restoration practices implemented? What can be learned from these examples?*

# RESOURCES

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## Materials

- **Slides and handouts:** for presenting key concepts, causes and impacts, and best practices.
- **Flipcharts and markers:** for group exercises, brainstorming, and classification activities.
- **Case study materials:** printed or digital copies of case studies for analysis.
- **Multimedia resources:** videos, infographics, or other visual aids to support learning.
- **Quizzes and reflection questions:** for assessing participant understanding and encouraging reflection.

## References

- *European Civil Protection and Humanitarian Aid Operations. (2021). Compendium of good practices for a greener humanitarian response. Retrieved from [https://www.urd.org/wp-content/uploads/2021/06/DOC\\_EU\\_ENVIRONMENT\\_COMPENDIUM\\_EN\\_250621.pdf](https://www.urd.org/wp-content/uploads/2021/06/DOC_EU_ENVIRONMENT_COMPENDIUM_EN_250621.pdf)*
- *Mahamud, R., Jalal, R., Ritu, S., Donegan, E., Arif, T. A., Kumar, M. F., Arafat, F., De Gaetano, M., Kabir, H., & Henry, M. (2022). Restoring degraded land in Rohingya refugee camps in Cox's Bazar, Bangladesh. Food and Agriculture Organization of the United Nations. Retrieved from <https://openknowledge.fao.org/server/api/core/bitstreams/64716592-d871-46a8-81d9-4759f72dd951/content>*
- *Najim, T., Zwijnenburg, W., Nahas, N., & Vasquez, R. J. (2023). Axed and Burned: How Conflict-caused Deforestation Impacts Environmental, Socio-economic and Climate Resilience in Syria. PAX. Retrieved from <https://reliefweb.int/report/syrian-arab-republic/axed-and-burned-how-conflict-caused-deforestation-impacts-environmental-socio-economic-and-climate-resilience-syria>*

## Delivery method

- **Lectures:** use lectures to introduce the case studies and highlight key lessons learned and best practices.
- **Q&A and interactive discussions:** engage participants through Q&A sessions and interactive discussions to ensure understanding and application of the concepts.
- **Simulations and role-playing:** utilize role-playing exercises to allow participants to practice integrating sustainable land management and habitat restoration practices into hypothetical scenarios.
- **Group exercises:** encourage collaboration and active learning through group activities and role-playing scenarios.
- **Case study analysis:** use real-world examples to illustrate successful strategies and lessons learned.



## Assessment tools

- **Quizzes:** Short quizzes at the end of the module to assess understanding of key concepts.
- **Reflection questions:** Open-ended questions for participants to reflect on what they have learned and how they can apply it to their work.
- **Feedback forms:** Collect feedback on the module to continuously improve content and delivery methods.
- **Group presentations:** Assess participant ability to apply concepts through the development and presentation of land management plans.

## Reflection and review questions

### Section 1: Introduction to sustainable land management in humanitarian action

- What are the key concepts of sustainable land management?
- Why is sustainable land management important in humanitarian contexts?
- How can sustainable land management prevent environmental degradation?

### Section 2: Causes and impacts of unsustainable land management

- What are the primary causes of unsustainable land management in humanitarian settings?
- How do these causes impact both the environment and humanitarian efforts?
- Can you provide an example of how conflict can exacerbate land degradation?

### Section 3: Sustainable land management and habitat restoration practices

- What are some effective techniques for sustainable land management?
- How does community involvement enhance habitat restoration efforts?
- Can you describe a method for soil conservation and its importance in a humanitarian context?

### Section 4: Case studies and best practices

- What lessons were learned from the land restoration efforts in the Rohingya refugee camps?
- How did the HALO Trust's work in Angola contribute to sustainable land management?
- What are the key factors that contribute to the success of sustainable land management practices?

### Overall module questions

- How can sustainable land management practices be integrated into ongoing humanitarian operations?
- What challenges might you face when implementing these practices in a crisis situation?
- Reflecting on the module, how can you apply what you've learned to your current or future humanitarian work?



# KEY TAKEAWAYS

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## 1. **Understanding sustainable land management in humanitarian contexts:**

Sustainable land management is crucial for preventing environmental degradation, supporting livelihoods, and enhancing long-term resilience in crisis-affected areas. It ensures that land resources are conserved and used efficiently to support both immediate humanitarian needs and future recovery.

## 2. **Causes and impacts of unsustainable land management:**

Key causes of land degradation include deforestation, overexploitation of resources, conflict-related activities, unsustainable agriculture, and urbanization. These practices result in habitat loss, soil degradation, reduced land productivity, and increased vulnerability to natural disasters.

## 3. **Sustainable land management and restoration techniques:**

Effective techniques such as reforestation, agroforestry, soil conservation, and habitat restoration help mitigate environmental damage and promote ecosystem recovery. These practices enhance biodiversity, protect water resources, and contribute to the health and well-being of affected populations.

## 4. **Community involvement and ownership:**

Engaging local communities in land management and restoration efforts ensures the sustainability of interventions. Community involvement fosters ownership, builds local capacity, and integrates traditional knowledge with modern practices to enhance the effectiveness of restoration activities.

## 5. **Balancing humanitarian needs and environmental sustainability:**

Sustainable land management balances the immediate need for resources with the long-term goal of environmental protection. By implementing sustainable practices, humanitarian actors can minimize the environmental footprint of their operations and promote resilience in affected communities.

## 6. **Case studies and best practices:**

Case studies from Syria, Chad, Bangladesh, and Angola highlight successful sustainable land management and habitat restoration practices. These examples demonstrate the importance of collaborative approaches, continuous monitoring, and integrating local knowledge to achieve sustainable outcomes.

## 7. **Mitigating the impacts of conflict and climate change:**

Conflict and climate change exacerbate land degradation, increasing the complexity of managing land resources in humanitarian settings. Addressing these challenges requires innovative approaches, including integrating conflict-sensitive strategies and climate-resilient land management techniques.

## 8. **Integrating sustainable land management into humanitarian programming:**

To enhance the effectiveness of humanitarian actions, it is essential to integrate sustainable land management into program planning and implementation. This approach not only addresses immediate needs but also lays the foundation for long-term environmental and community resilience.



*Responding to Emergencies, Protecting the Environment*

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