



CAMEROON

Environmental Country Profile for Shelter and Settlement

1ST EDITION | OCTOBER 2023



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Back, lower photo: Photo by Jeremie Kouakene, UNHCR: Self-constructed shelters, Ndaba IDP site in Kolofata.

Cameroon Environmental Country Profile for Shelter and Settlement

(October 2023)

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Text which has been copied from other documents is *italicized*. Citation names and dates are from the original material.

Suggested Further Actions

The initial design of an Environment Profile involved a document which would be prepared before a disaster. The **Cameroon Environment Profile** has been developed during an ongoing crisis. As a result, a number of further actions to improve the integration of environment into the humanitarian response were identified. These actions are listed below as suggestions, recognizing that not all can be implemented immediately and there are external factors, particularly funding and partner capacities, which may hinder implementation.

Section 1.4. Suggested Further Action

The Profile covers on-going crises. It is suggested that the Profile be updated on an at least an annual basis. This update can take place in combination with the annual work on the Humanitarian Planning Cycle. At the same time, any significant change in the nature of humanitarian operations in Cameroon should consider an updating of the Profile.

Section 6.3. Suggested Further Action

The Shelter Cluster should contact the MINEPDED and determine whether:

1. There is an emergency exception for humanitarian operations, and,
2. The requirements assessing lodgings or settlements have an application to humanitarian assistance.

Section 7.3. Suggested Further Action

Map IDP sites and parks and other protected areas to identify whether any natural resource extraction could or has developed within the protected areas.

Section 9.3. Suggested Further Action - HRP Indicators

The Cameroon Shelter Cluster has established environment-based indicators for the shelter segment of the Humanitarian Response Plan. As the IDP and operating situations in the NW/SW and Far North are different, the specific indicators for each area should vary slightly. Two draft indicators are provided as a starting point for refining area-specific indicators:

- Percentage of all affected households assisted with shelter materials which meet environmental criteria.
- Percentage of all affected households assisted with core and essential non-food items (NFIs) which meet environmental criteria.

Section 10.2. Suggested Further Actions

Materials and suggested actions from the Profile can be used as input into future work under the HPC process.

Section 11.1. Suggested Further Action

The Cameroon Shelter Cluster should consider establishing a GIS capacity to collect, analyze and present data on sites. Where appropriate, remotely sensed data can be added to the GIS to better understand the environmental and other impacts of sites.

Section 12.2. Suggested Further Action

The Shelter Cluster team should consider, in collaboration with refugee assistance, implementing site selection and planning for government officials and national partners.

Resources on camp management and camp coordination, including site planning, can be found here in the **Camp Management Toolkit**. Guidance on site selection and planning from an environmental perspective is available in Annex 20.6.

Section 13.2. Suggested Further Action

A housing, land and property assessment should be done for the Far North.

Section 14.2. Suggested Further Action

Given the presence of IDP sites in the Far North, the Far North Hub should work with partners and the government to develop guidance on site decommissioning. This effort should include the development of preliminary site decommissioning plans for specific IDP sites, in collaboration with the camp management focal point and local authorities.

Section 15.2. Suggested Further Actions

- Shelter construction or repair efforts in both the NW/SW and Far North should conduct a scorecard assessment of environmental impacts. The scorecard approach is described in Chapter 9, Roadmap for Research. Current approaches to shelter-focused score cards are the Luxembourg Red Cross process and the UNHCR Shelter Sustainability Assessment Tool.
- The Far North Hub should consider increasing the durability of replacement shelters by considering the use of metal poles to replace wooden posted (liable to termite damage) and either replacing plastic sheeting roofs with zinc sheets or covering plastic sheeting with grass (as used in traditional roofs) to reduce ultraviolet damage to the plastic and lengthen its functional life.

Section 16.3. Suggested Further Actions

Global Shelter Cluster partners are working on a practical approach, based on the scorecard concept, to better understand the environmental impact of NFIs and possible alternative approaches. It is suggested that the Cameroon Shelter Cluster conduct pilot scorecard reviews of current NFI assistance using the scorecard in Section 20.7.

Section 17.2. Suggested Further Actions

- Assessments of cooking fuel collection, use and sale by IDPs should be used to understand the scope of any impact on local environments.
- Where justified by the level of impact identified, use a project mechanism to promote the use of alternative fuels, improved stoves and alternative livelihoods options to reduce demands on natural resources.

Section 18.2. Suggested Further Actions

The NW/SW and Far North Hubs review the impact which IDPs are having on specific waste generation and consider activities to improve waste management with recycling and livelihoods and agricultural (e.g., waste composting) components. These efforts can be in collaboration with WASH and food security activities. Guidance on is available on Waste management in camp settings.

Section 19.2. Suggested Further Action

It is suggested that planning to provide support for IDPs (in sites or as residents of existing communities) include hazard assessments and plans to reduce the risks from identified hazards. Where possible, these plans should include nature-based solutions as part of actions to reduce the impact of IDPs on forest and other natural resources. Where practical, these risk reduction efforts should extend to neighboring communities as they are likely to face the same risks as IDPs.

Why this Environment Country Profile for Shelter and Settlements?

1.1. Using environmental formation to improve humanitarian response

Those responding to disasters and other crises have limited time or means to collect, analyze and integrate information on the environment into responses plans and operations. This can happen even where considerable information is available from public sources, local organizations, experts, and from previous responses. As a consequence, assistance operations may lead to avoidable environment damage and harm to disaster survivors because of a lack of awareness of environmental issues or expected impacts of humanitarian operations.

This **Cameroon Environmental Country Profile for Shelter and Settlements** (hereafter, the **Profile**) is intended to help address this situation. The **Profile** is designed to collect, analyze and summarize response-related environmental information before a crisis and provide it to humanitarian responders in the run up to a crisis. Rather than a report on the environment, the **Profile** is a compilation of information related to the environment and expected humanitarian operations and serves as a source book to support these operations.

The environment is broad and encompasses all aspects of a humanitarian response. The Global Shelter Cluster is supporting the development of this **Profile** using a shelter and settlements approach to collect and assess the information included in the document. This shelter and settlements approach reflects the fact that simply building a shelter without adequate water, sanitation or other basic needs address will likely mean that the shelter will not be used, or additional harm will come to the occupants.

Thus, the **Profile** considers not only the environmental issues related to a shelter but also those issues related to the settlement in which the shelter resides. As such, the **Profile** can be of use to other humanitarian sectors.

In the case of Cameroon, the **Profile** has been developed during on-going humanitarian operations. As a result, this **Profile** provides environment-related information and analysis relative to and for use during the current humanitarian response. As part of this process, development of the **Profile** also provides an opportunity to identify opportunities to improve the environmental footprint of ongoing or future shelter related operations. These opportunities are identified in the specific sections under the heading of **Suggested Further Actions** and summarized above.

1.2. Development of the Profile

Development of the Profile began, in November 2022, with a workshop on assessing the environmental impact of shelter and NFI assistance. This was followed by development of an outline for the Profile for Cameroon and the collection of information through a desk review. A Global Shelter Cluster-WWF/US Disaster and Environment Advisor undertook a field mission to Cameroon from 18 to 31 May 2023 to support development of the Profile, provide training and conduct site assessments in the Far North. An initial working draft of the Profile was prepared for review in June 2023, with additional revisions and updates made during the period to October 2023.

Two Principal Areas of Shelter Operation – Additional Localized Information Available

Note that Cameroon has two principal areas of IDP-related operations – the Far North (FN) and the Northwest/Southwest (NW/SW). Operating conditions, shelter and NFI needs and levels of integration of environmental considerations differ between these two areas. The [Northwest and Southwest](#) and [Far North](#) web pages should be consulted for localized information not covered in detail in the **Profile**.

1.3. Organization of the Profile

The **Profile** is divided into two main sections:

- A **Profile Overview** which generally provides:
 - Short topical summaries of information useful in incorporating environmental issues into the humanitarian response in Cameroon and
 - An identification of actions to be considered in integrating the environment into ongoing and future shelter and settlements operations.
- An **Annex**, which provides, where necessary, more information to complement the topical summaries provided in the **Profile Overview**.

1.4. Suggested Further Action

The **Profile** covers on-going crises. It is suggested that the **Profile** be updated on an at least an annual basis. This update can take place in combination with the annual work on the Humanitarian Planning Cycle. At the same time, any significant change in the nature of humanitarian operations in Cameroon should consider an updating of the **Profile**.

2. Country Context

2.1. Current Crisis Overview

Extracted from [Humanitarian Response Plan Cameroon: Humanitarian Programme Cycle 2023](#). The Humanitarian Response Plan covers refugees and IDPs, with most humanitarian challenges for these groups similar.

Crisis Context and Impact

Nine out of ten regions of Cameroon continue to be impacted by three complex humanitarian crises: the Lake Chad basin conflict, the North-West and South-West (NWSW) crisis and the Central African Republic (CAR) refugee crisis. In 2023, one out of six people living in Cameroon needs humanitarian assistance and protection, a total of 4.7 million people. More than 3.2 million people are projected to face acute food insecurity in 2023.2 There are over two million people on the move as internally displaced persons (IDPs), returnees, or refugees. Humanitarian needs are compounded by structural development weaknesses and chronic vulnerabilities that further challenge the long-term recovery of affected people. The number of people in need in Cameroon continues to grow due to the impact of conflict and insecurity, epidemics as well as climate-related effects, such as floods and droughts. The prolonged nature of these crises, new and repeated displacement, and insufficient humanitarian assistance are eroding people's already limited resilience. This is leading to an increase in negative coping mechanisms, including child labor, child marriage and survival sex.

Exceptional floods affected over 313,000 people in the Far North in 2022, causing at least 23 deaths and displacing over 113,000 people. Some 31,000 houses were damaged or destroyed, and 48,000 hectares of fields and 6,700 animals lost. Around 151 primary and secondary schools were flooded, and more than 200 water points and 2,620 latrines submerged. A dozen health facilities were completely flooded and rendered non-operational.

Emergency assistance that complements development actions

Humanitarian needs in Cameroon are intrinsically linked to persistent insecurity, and subsequent forced displacement, as well as to natural disasters and health epidemics, compounded by structural and chronic deficits affecting livelihoods, basic infrastructure, and the socio-cultural environment. To respond effectively to those complex issues and their repercussions, there is a need for simultaneous and coordinated interventions to respond to the structural and profound causes of vulnerabilities, while ensuring the necessary emergency response.

Towards a more environmentally sustainable humanitarian response

Certain humanitarian organizations are adapting their response efforts to avoid, minimize, or mitigate the environmental impacts of humanitarian action and to promote environmentally

responsible humanitarian programming. The Shelter/NFI Sector launched in-depth discussions with its partners in 2022, to identify strategic actions to address environmental issues, and has included green indicators in its sectoral response framework. The Inter-Sector agreed to exchange best practices in 2023, with the aim of increasing environmental sustainability of humanitarian action in Cameroon.

2.1. Environment Overview

Climate

Extracted from [Climate Change Knowledge Portal](#):

Cameroon has one main rainy season that lasts from May-November when the West African Monsoon brings moist air over the country from the Atlantic Ocean. The peak rainy months correspond with the lowest average temperatures of the year. The Southern Plateaus experience two shorter rainy seasons during May-June and October-November. Cameroon's dry season lasts from December-April and corresponds with the highest average temperatures of the year during the latter part of the season in the months of February-April. The southern part of the country is characterized as humid and equatorial with temperatures ranging from 20-25°C (depending on altitude) and the wettest regions receiving more than 400 mm of rainfall per month. Northern Cameroon (north of 6°) is semi-arid and dry with temperatures ranging from 25-30°C. This portion of the country receives less than 100 mm of rainfall per month.

A more detailed description can be found at [UNDP Climate Change Adaptation](#).

Extracted from [LandLinks - Cameroon](#)

Landforms

Cameroon is a central African country whose 465,400 square kilometers of land include desert, savanna, mountain, rainforest and coastal ecosystems. The Sudano-Sahelian zone in the north is characterized by low rainfall and desert and savanna scrub vegetation. The region is extensively used for livestock production as well as cultivation of grain crops (millet, sorghum) and cotton. A band of highlands and savanna, including the Adamawa plateau, forms a transitional zone between the semiarid north and southern rainforests. Coffee and cocoa production as well as cultivation of root crops and plantains dominate in this zone. The coastal zones have high rainfall, forests and fertile land that support the production of palm oil, rubber and horticultural crops. The southern region has tropical and equatorial rainforests that are globally unique, with a rich diversity of flora and fauna. The Cameroon Volcanic Line, a chain of volcanic hills and mountains, crosses the country diagonally, rising from the western coast to the northern region of the country. Forest covers 46% of Cameroon's mass, and 9% of total land lies within nationally protected zones. Agricultural land makes up 20% of the total land area. Approximately 0.4% of cultivated land is irrigated (Pamo 2008; World Bank 2009a; Molua and Lambi 2007).

The following Environmental Atlases has been developed by the Cameroon Shelter Cluster:

- [Littoral Region Environmental Atlas](#)
- [Environmental Atlas of the West Region](#)
- [Southwest Cameroon Regional Environmental Atlas](#)
- [Northwest Cameroon Environmental Atlas](#)

2.2. Shelter, Housing and Settlements Overview

Cameroon, as a large, ecologically and environmentally diverse country, encompasses a range of shelter types and settlements structures. At the broadest, there is a division between urban rural locations.

Urban areas tend to have more engineered shelter¹ (e.g., single to multi-story concrete or brick structures) with, more often electricity and internal water-and-waste systems. At the same time urban areas can include significant informal settlement areas, where shelter is constructed in an ad hoc manner from a range of materials (e.g., metal, wood, earth, cement, etc.) and generally without internal access to water-and-sanitation services. Urban informal settlements tend to have higher population densities in more formally established neighborhoods.

[Shelter Typologies Northwest Southwest Cameroon Crisis](#) provides details of shelter types in four regions of Cameroon: Northwest, Southwest, West, and Littoral (pages 13 to 19). [Extreme Nord - Typologies d'Abris](#) provides a quick overview of shelter types in the Far North.

Additional background on shelter in Cameroon can be found in these documents:

- [Architecture et identités techniques au Cameroun](#)
- [Tous les pays Africa Central Africa Cameroon](#)
- [Genèse et Typologie des Villes du Cameroun de L'Ouest](#)
- [Moveable and Property Holdings of North and West Cameroon](#)

3. Key Actors

3.1. Environmental Sector

See Annex 20.1

3.2. Cameroon Shelter and NFI Cluster

See Annex 20.2

3.3. Government of Cameroon

The primary Cluster Government counterparts are local authorities involved in IDP issues. The Shelter Cluster has also interacted with civil protection and other authorities at the national level. Also see Annex 20.2 for specific government counterparts in the NW/SW and Far North.

4. Summary of Shelter and Non-Food Item Efforts

4.1. Cameroon Shelter and Non-Food Items Cluster

The Cameroon Shelter and NFI cluster is led by UNHCR. In the [Far North](#) and at the **national level**, UNHCR leads coordination through a **sectorial approach** since 2015. In October 2018, the Shelter **Cluster** was activated for the [North-West and South-West](#) regions to support the response to the recent crisis. A Shelter Cluster Coordination Officer is based in Yaounde. A Shelter Coordination Officer covers NW-SW Shelter Cluster activities and an Associate Shelter Cluster Coord Officer is based in the Far North

In the:

- **Far North** assistance generally involves support to IDPs in informal sites, including the construction of shelters (emergency, transitional, shelter kits), shelter rehabilitation for returnees and host communities, provision of NFIs and coordination with other parties on assistance to meet basic needs.
- **Northwest/Southwest** IDPs tend to be in urban locations, where rental and NFI assistance is more common. Houses are frequently damaged and burnt in the course of the conflict. The Shelter Cluster's Strategy is to conduct light repairs to improve habitability using a combination of voucher redemption of materials, and agency-contracting labor.

¹ The term "engineered" is used here to mean that an engineer, architect or experienced builder designed or constructed the building.

See the web pages for the [Northwest and Southwest](#) and [Far North](#) for more details. Information on shelter and non-food items (NFI) can be found in Sections 15 and 16.

Note that Cameroon does not have a formal camp management cluster. There is a Camp Coordination Focal Point in the Far North but not involved in IDP site management. Refer to the [Cameroon Shelter Cluster web pages](#) and the [Northwest and Southwest](#) and [Far North](#) pages for additional details on ongoing operations.

Extracted and condensed from Cameroon Shelter Cluster [HRP Narrative](#) for 2023.

Objectives

1. Provide life-saving shelter and NFI assistance
2. Provide sustained access to shelter

3. Support an enabling protection environment and social cohesion by improving housing and related community/public infrastructure

Sector approach principles

Shelter should be adequate, dignified, and safe to all individuals if not then domestic tensions, physical/psychological distress, risk of health diseases and gender violence will arise.

(text removed)

The Shelter Sector is also encouraging the mainstreaming of environmental considerations. During 2023, green standards will be introduced to reduce the impact of shelter humanitarian assistance on the environment and provide partners

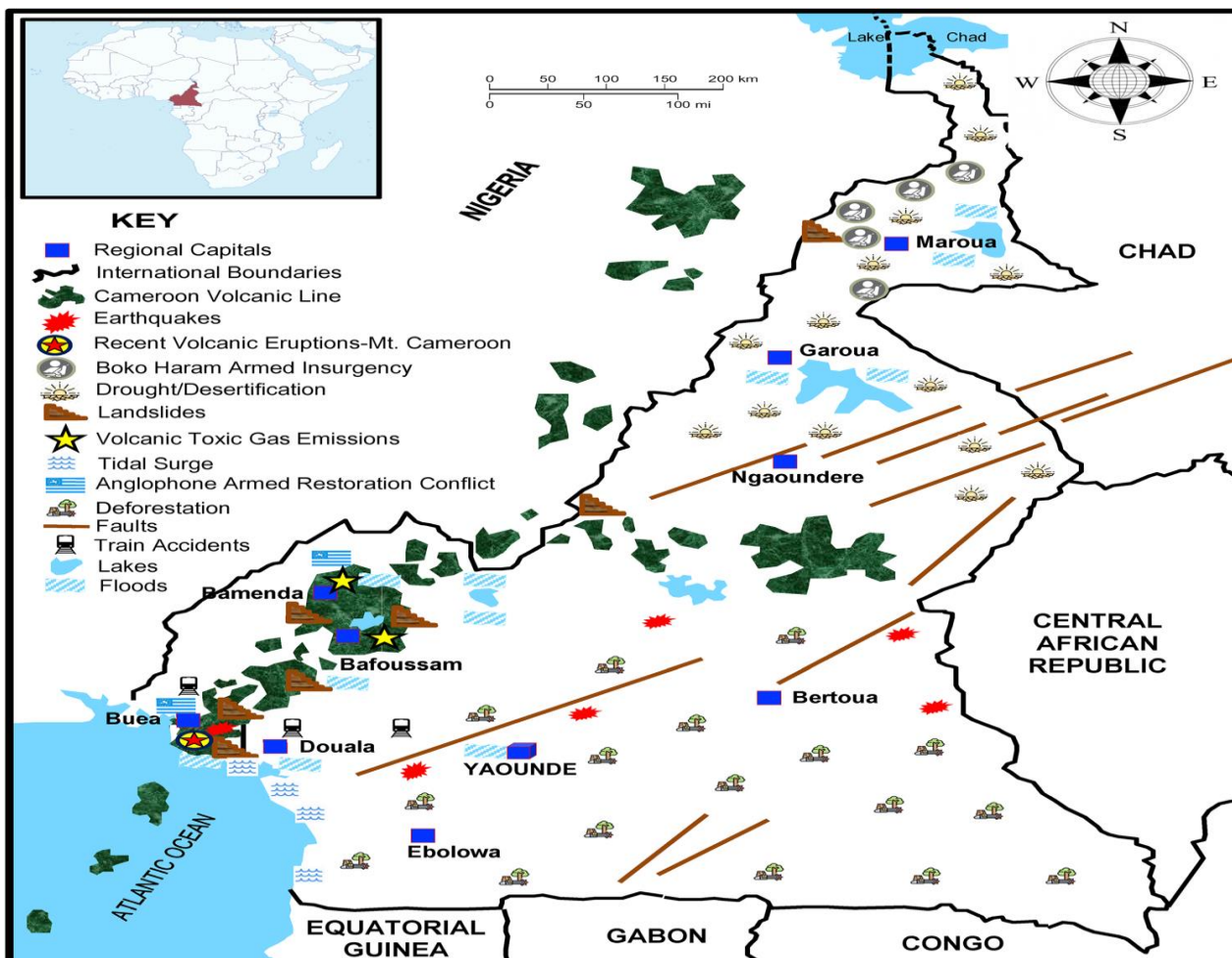
with a valid alternative. For this purpose, a green indicator is proposed for each activity of the sector response plan.

Overall, durable solutions will be promoted through a transfer of capacity to local authorities and civil society and resilience strengthening in the following domains: camp management and camp coordination; disaster risk reduction; house land and property, and urban planning.

5. Disaster Risk Management

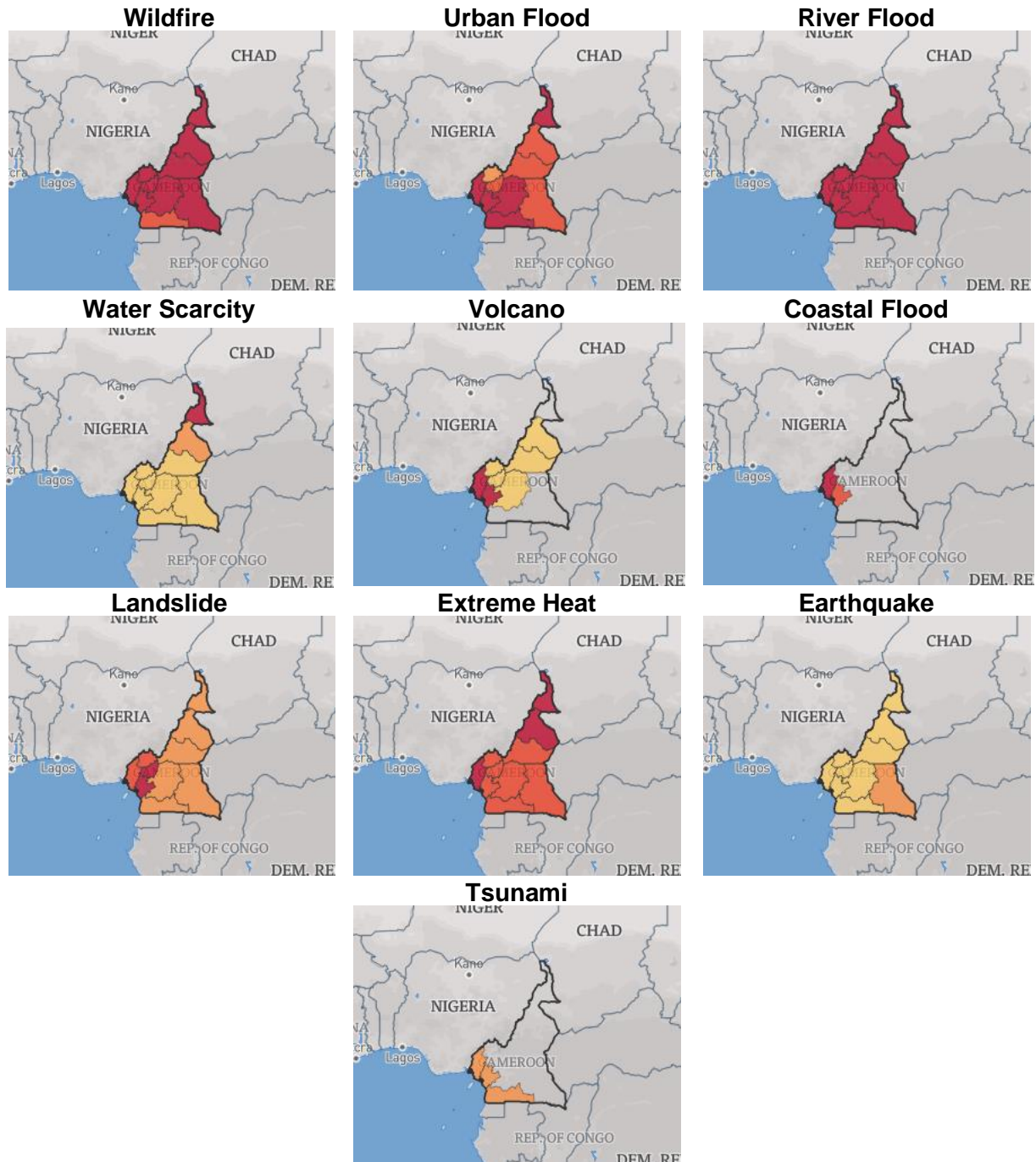
5.1. Natural and Other Hazards

The map below, from [Disaster Risk Reduction in Cameroon: Are Contemporary](#)



[Disaster Management Frameworks Accommodating the Sendai Framework Agenda 2030?](#) provides an overview of natural and other hazards in Cameroon.

The [ThinkHazard](#) web site provides an overview of natural hazards in Cameroon. A summary of hazards by region is provided below.



Rating Scale ■ High ■ Medium ■ Low ■ Very low

Hazards like flooding, extreme heat and landslides may be seasonal. Flash flooding can occur in IDP sites outside formal urban locations in Cameroon.

The ThinkHazard assessment for [Volcanos](#) does not indicate a specific threat from toxic gas from lakes of volcanic origin. However, the release toxic gas from volcanic-origin lakes is a hazard in Cameroon, as demonstrated by Lake Nyos.² As the ThinkHazard assessments are based on regions, local level hazard assessments are needed to verify the presence of a hazard in a specific location.

Accessing the ThinkHazard Information

The full report for ThinkHazard data for Cameroon, including sources, is available by:

1. Going to the ThinkHazard web site,
2. Entering Cameroon in the search bar, and
3. Downloading the resulting report.

This process can be done using English or French. The full report provides further background on each hazard as well as sources of additional information. As the information in ThinkHazard can be updated over time, the most recent information should be downloaded for plan development, assessments or operations.

The [DISASTER RISK PROFILE Cameroon](#) provides probabilistic risk assessments for floods and drought. This analysis includes projecting changes of impacts due to changing climate conditions and can be useful in planning to reduce flood and drought³ risks.

The [Northwest and Southwest Regional Crisis in Cameroon Contingency Plan](#) provides more information on natural and conflict-related hazards in the NW/SW as well as, for some hazards, West and Littoral Regions. The scale of hazard information is more detailed than provided in the ThinkHazards reports. The contingency element of the **Plan** is current as of July 2023.

5.2. Climate Change

Extracted from [DISASTER RISK PROFILE Cameroon](#):

(Numbers refer to references in the original.)

CLIMATE TRENDS

Similarly (sic) to other western African countries, temperature observations indicate that Cameroon has experienced a considerable increase in temperature in recent years. An analysis of climate data from 1970 to 2015 [7] shows an average rise in temperature of around 1°C. Trends for precipitation are not as clear as those for air temperatures, and are variable in time and space. Average annual precipitation for Cameroon is approximately 1568 mm, while the mean number of wet days is around 138.

CLIMATE PROJECTIONS FOR CAMEROON

Climate projection studies are abundant for multiple different time spans and with various scales. Climate models are tools that the scientific community uses to assess trends in weather conditions over long periods. In a recent study [9] Alder, et al., compared the observed temperature and precipitations of the 1980-2004 period with the estimations of a set of global climate models provided by the Coupled Model Intercomparison Project Phase 5 (CMIP5). Three future periods (2025-2049, 2050-2074 and 2071-2095) were then analyzed for different greenhouse emission scenarios (see IPCC's Emissions Scenarios).

² See <https://earthobservatory.nasa.gov/images/86244/lake-nyos-cameroon>.

³ Although drought is not an immediate threat to shelter, it can reduce disposable income and limit the means of displaced or disaster-affected to contribute to the costs of rebuilding or repairing shelter.

In all periods and all emission scenarios, models showed an increase in temperature. The increase in temperature was more evident in high emissions scenarios and long term period projections. In high emission scenarios (RCP8.5), model projections showed an increase between 1.5°C and 4°C for the mid term period (2050-2074) and an increase between 2.5°C and 5.5°C for the long term period (2071-2095). Though changes in precipitation are much more uncertain, it is very likely that average precipitation will increase for both medium and long term periods and for all emission scenarios.

Cameroon's [Contribution determinee au niveau national - actualisee \(CND\)/Nationally Determined Contribution- Updated \(NDC\)](#), issued in 2021, provides extensive discussion of climate-related issues in the country, which is summarized in the following extracted text: *Cameroon's objective and vision for adaptation is that in 2035, "the climate change in the five agro-ecological zones of Cameroon are fully integrated into the sustainable development of the country, thus reducing its vulnerability, and even transforming the problem of changes into a development solution/opportunity. So the Cameroonians especially women, children and people vulnerable and the economic sectors of the country will acquire greater resilience and greater ability to adapt to the negative impacts of climatic changes.*

(Original translated from the French by Google Translate®.)

5.3. Disaster History

The table below summarizes reported disasters in Cameroon from 1900 to June 4, 2023, as recorded in the [EM-Dat data base](#).

Reported Disasters – Cameroon 1900-June 2023				
Epidemic: 26	Landslides: 4	Volcanic Ash: 3	Transport	Road: 27
Drought: 6	Floods	Floods – River: 10		Water: 13
Fire: 2		Floods – Flash: 4		Rail: 3
		Floods - Not specified: 4		Air: 3

Note that the EM-Dat data is generally limited to events reported in the global media or on the basis of internationally recognized disasters. Further, the coverage of events is not consistent over time and should be considered as more comprehensive the closer a reported disaster is to June 2023.

The [General Overview of the Disaster Management Framework in Cameroon](#) article provides an alternative list of disasters from 1980 to 2011. This list was developed from different sources than the EM-Dat information. The two sources are considered useful providing a more comprehensive perspective than each alone.

- Three gas disasters: two gas emissions from crater lakes, Lake Monoum (1984) and Lake Nyos (1986), and one industrial gas accident in Nsimalen (1996).
- Three volcanic eruptions of Mount Cameroon (October 1982, March–April 1999, and May 2000).⁴
- Sixteen tornadoes/storms/thunder strikes in the South, Far North, and Adamawa and North Regions.
- Twelve major floods: Kribi (1998); Lagdo (1998); Maga (1998); Far North (Diamare, 1996, 1998, 1999); Douala (2000) and Limbe (2001); Mokolo and Kolofata (August 2007); Nkolbisson, Yaounde (April 2008); Garoua, (July 2008); and Mayo Danay (July 2010).
- Twelve major landslides: Bakombo (Melong), June 1998; Oyamabang (Yaounde), August 1990; Pinyin (Santa), September 1992; Bafaka Balue (Ndian), September

⁴ The last reported eruptions was in 2012 – see <https://sheltercluster.org/north-west-south-west/documents/nsw-shelter-cluster-contingency-plan>.

1995; Guoata (Dschang), September 1997; Sho (Belo), September 1997; Baingoh (Belo), July 1998; Anjin (Belo), September 1998; Yaounde (Centre Region), August 1998; Ron (Nwa), September 2001; Limbe (Southwest Region), June 2001; Magha (Wabane), July 2003.

- Twenty fire disasters: bushfires in Faro and Deo Division (Adamawa Plateau), 1994; Mokolo (Yaounde), 1998; Nsam Efoulan (Centre Region), 1998; Sangmelima market (South Region), 1998; Bafoussam market (West Region), 1999; Limbe market (Southwest Region), 2000; Essos market (Centre Region), 2001; military headquarters ammunition depot (Yaounde), 2001; Oyom-Abang (Centre Region), 2001; Kumba market (Southwest Region), 2005; Congo market (Douala), 2009, 2010, 2011; Bertoua Central market (East), 2010; Idabato II (Bakassi), 2010; Ngoé Nkolbiteng market (Kribi), 2010; PSS Nkambe (Ndonga-Mantung Division), 2010; Tiko market (Southwest Region), 2010; Mboppi market (Douala), 2011.
- Six armed conflicts and acts of vandalism: Kotoko-Arab Choas, 1993; Bakassi, 1997; East Region; 1997; Meiganga, 1997; Moloundou, 1997; Boyo (1998).
- Three cases of destruction by elephants: Far North (Diamare, 1996, 1998, and 1999).
- Nine epidemics: cholera (North and Far North, 1996, 1998, 1999); meningitis (Far North, 1998; 695 cases); Red diarrhoea (East, 1997; Messock, 1998; and Mbalmayo, 1999); Menchum Division (2010); Far North (2011).
- An average of 1,000 road accidents per year.
- Three aeroplane crashes: 3 December 1995 (Cameroon Airlines 737-200; 72 people killed); 30 August 1984 (Cameroon Airlines 737-200; 2 people killed); and 5 May 2007 (Kenya Airways Boeing 737-800; 114 people killed).
- Famine/drought/locust invasion Far North (1998, 1999, 2001); Maroua (2011).

5.4. Disaster Management System in Cameroon

Detailed information on the disaster risk management structure of the Government can be found in [Republic of Cameroon: Mapping of International Disaster Response Laws, Rules and Principles](#). The document covers:

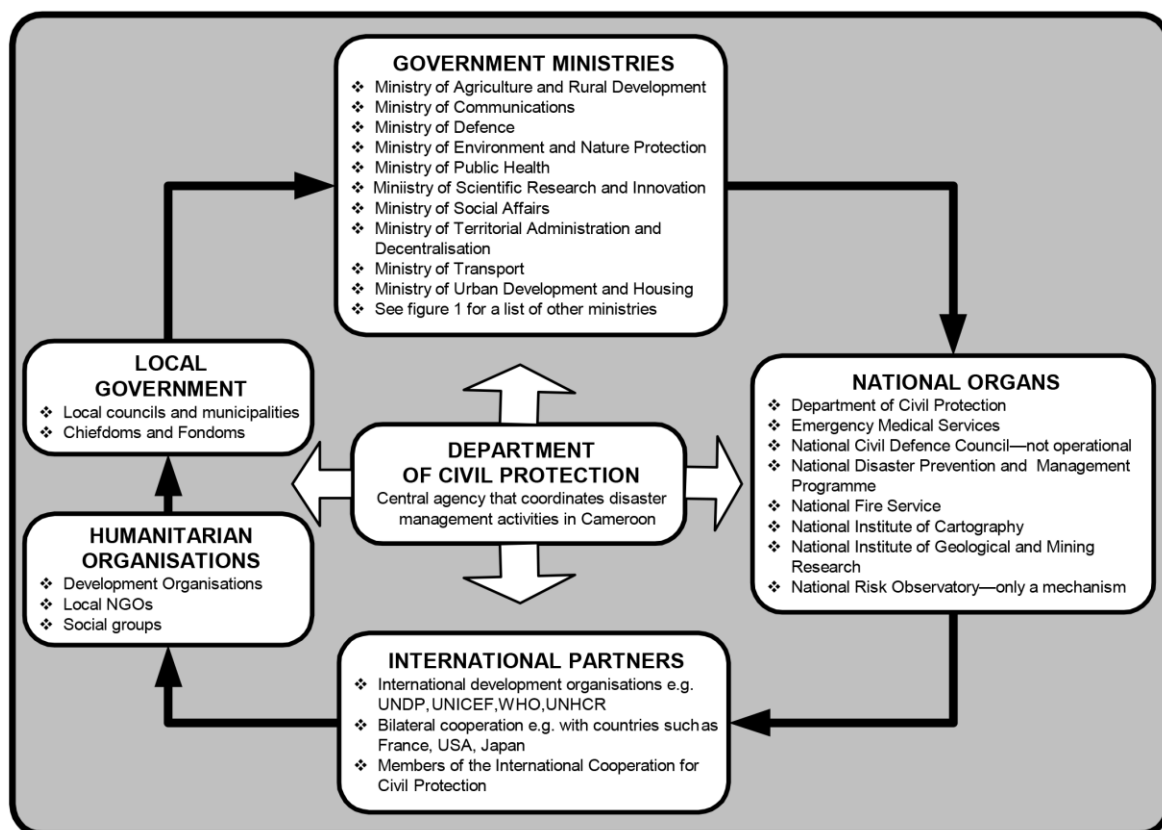
- The legal framework for disaster risk management in Cameroon
- The focal point for coordinating international assistance (the Civil Protection Directorate, Ministry of Territorial Administration and Decentralization)
- Internal government responsibilities for international disaster assistance
- Legal basis for international disaster assistance, including customs arrangements, quality standards, transparency, accountability mechanisms and transiting assistance, among other topics.

Based on the [General Overview of the Disaster Management Framework in Cameroon](#) article, the main responsibilities of the Directorate of Civil Protection are:

- *General organisation of civil protection in the country as a whole.*
- *Initiate cooperation on civil protection issues between national and international organisations.*
- *Coordinate all institutional structures concerned with civil protection.*
- *Develop studies and research on civil protection issues in times of war and peace in partnership with relevant organisations.*
- *Engage in training and capacity-building for all personnel involved in civil protection in partnership with the Department of Human Resources.*
- *Control the transfer of corpses.*
- *Assess requests for compensation and financial assistance from disaster victims.*
- *Control financial and material aid meant for disaster victims.*
- *Coordinate disaster relief and rescue operations.*

- *Coordinate the deployment of back-up and auxiliary services.*
 - *Coordinate logistical operations.*
- (Italicized text is copied from the original.)

The overall linking of government, national parties, humanitarian organizations and international partners which are coordinated by the Directorate of Civil Protection is set out in the following figure, also from [General Overview of the Disaster Management Framework in Cameroon](#).



Further information on disaster risk management in Cameroons can be found in:

- [General Overview of the Disaster Management Framework in Cameroon](#)
- [Disaster Risk Reduction in Cameroon: Are Contemporary Disaster Management Frameworks Accommodating the Sendai Framework Agenda 2030?](#)
- [A status quo analysis of disaster risk reduction policy and legislation in Cameroon](#)

6. Environmental Regulatory Requirements and Institutions

6.1. Lead Government Party

Ministry of the Environment, Nature Protection and Sustainable Development (MINEPDED). An Inter-Ministerial Committee on the Environment is involved in the environmental impact assessment approval process. A level of decision making is delegated to municipalities with the advice of MINEPDED.

6.2. Environmental Review Procedures

Extracted from [Netherlands Commission for Environmental Assessment Cameroon EIA Profile](#):

Overview ESIA procedure

In Cameroon, a simplified Environmental Impact Statement (EIS) and the comprehensive ESIA are distinguished.

The Environmental Impact Statement (EIS) includes the following steps:

- *Screening*
- *Drafting of terms of references to be approved by the relevant municipality*
- *Elaboration of the Environmental Impact Statement*
- *Review of the Environmental Impact Statement*
- *Decision of the municipality, after advice from the local MINEPDED services*

ESIA includes the following steps:

- *Screening (not mandatory)*
- *Preparation of ToR to be approved by the MINEPDED after advice from the relevant sector administration*
- *Preparation of the ESIA report with public consultations*
- *Review of ESIA report and public hearing*
- *Decision of the Minister in charge of the environment on the quality ESIA report.*

Additional details can be found in in the [Cameroon EIA Profile](#) report.

[Ministerial Order 0001 of 8 Feb 2016](#) details activities which require environmental and social reviews, including:

- Sewage treatment facilities greater than 500m3
- Hospitals
- Locations with more than 200 lodgings, or a summary environmental and social study for 50 to 200 lodgings
- Improvements in resettlement areas of 2,000 inhabitants in rural areas and 1,000 habitants in urban areas, or a summary environmental and social study for between 1,000 and 2,000 inhabitants in rural areas and 600 to 1,000 inhabitants in urban areas

The Cameroon environmental and social assessment regulations (Ministerial Order 2013/0171, 14 Feb 2013) do not appear to include exceptions for responses to disasters. Environmental assessments involving national security or defense do not require public consultations. While UN agencies may be excepted from national laws and regulations, international and national organizations involved in IDP site management may be subject to these regulations.

6.3. Suggested Further Action

The Shelter Cluster should contact the MINEPDED and determine whether:

1. There is an emergency exception for humanitarian operations, and,
2. The requirements assessing lodgings or settlements have an application to humanitarian assistance.

If IDP sites are established and managed by government authorities, a de facto or de jure emergency exception to environmental regulations may exist. However, particularly for resettlement or return, the developmental nature of these site may require some level of environmental review if only in line with the *do no harm approach*, Sphere Standards and good practice.

7. Ecologically Protected and Sensitive Areas

7.1. Parks and Other Protected Areas

Source: [Parks.It](#)

National Parks
Bénoué

Bouandjidah
Campo - Ma'an

Faro
Kalamaloué

Korup
 Lobeke or Lac Lobéké
 Mangroves de
 Ndongore
 Mbam et Djerem
 Mount Manengouba
 Mozogo-gokoro
 Nki
 Vallée du Mbéré
 Waza

Wildlife Reserves

Bafia
 Bakossi Mountains
 Boumba - Bek
 Dja
 Douala - Edéa
 Ebo
 Etinde
 Kimbi
 Lac Ossa
 Makombe
 Mawne River
 Mont Nlonako
 Mount Oku
 Mpem et Djim

Rumpi Hills
 Santchou
 Takamanda
 Tchabal Mbabo
Wildlife Sanctuaries
 Banyang - Mbo
 Mengame Gorilla
 Sanctuary
 Wo' onge

Forest Reserves

Abong-Mbang
 Babules
 Bambuko
 Ejagham
 Fungom
 Ma'an/Boucles du
 Ntem
 Mbambe
 Mokoko River
 Mongokele
 Nta Ali
 Rumpi Hills
 South Bakundu

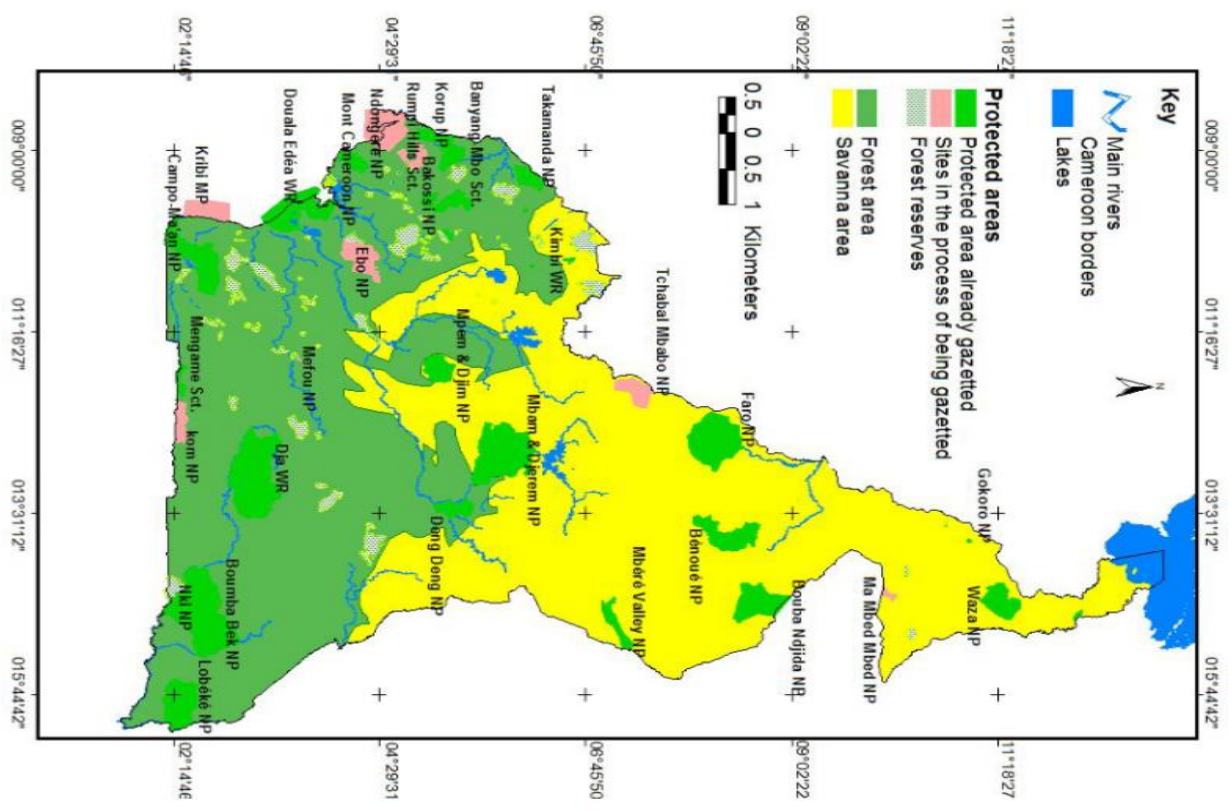
Other Protected Areas

Kilum-Ijim Forest
 Mekonge
 Mbulu Hills
 Mont Koupé
 Mount Kilum-Ijim
**World Heritage
 Convention**
 Dja Faunal Reserve
**UNESCO-MAB
 Biosphere Reserves**
 Dja
 Parc National de la
 Benoué
 Parc National de Waza
Cloud Forest Sites
 Bamboutos Forests
 Hoséré Vokré
 Mont Koupé
 Mount Cameroon
 Mount Kilum-Ijim
 Mount Manengouba
 Mount Nlonako
 Rumpi Hills
 Tchabal Mbabo

7.2. Maps

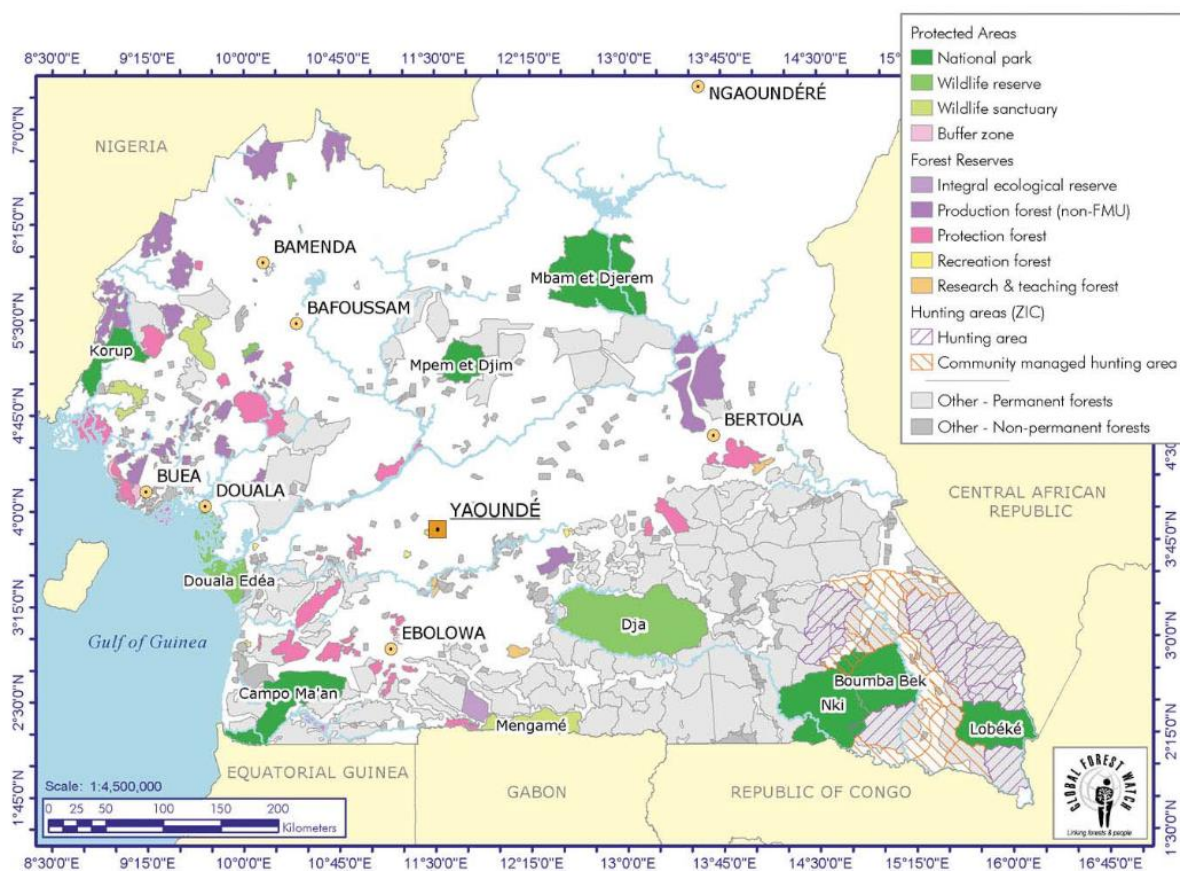
Protected Locations in Cameroon – National Overview

Source: [Potentials of Protected Areas as Carbon Sinks and Implication on Climate Change in Cameroon](#)



Protected and other Environmentally Important Locations - Southern Cameroons

Source: [Interactive Forestry Atlas of Cameroon Version 1.0 An Overview](#)



Environmental atlases have also been prepared by the NW/SW Cluster for the following Regions:

- Northwest Region: <https://sheltercluster.org/north-west-south-west/documents/environmental-atlas-west-region>,
- Southwest Region: <https://sheltercluster.org/north-west-south-west/documents/southwest-cameroon-regional-environmental-atlas>,
- Littoral Region: <https://sheltercluster.org/north-west-south-west/documents/littoral-region-environmental-atlas> and,
- Western Region: <https://sheltercluster.s3.eu-central-1.amazonaws.com/public/docs/West%20Region%20Environmental%20Atlas.pdf?VersionId=wdZpOI26KUSAw.NMR5kts42KO3YqzyfJ>.

7.3. Suggested Further Action

Map IDP sites and parks and other protected areas to identify whether any natural resource extraction could or has developed within the protected areas.

8. Environmental Impact Assessment

8.1. Environmental Assessments

The Cameroon Shelter Cluster conducted three environment-bases environmental assessments:

- Rapid Environment Impact Assessment in Disaster (REA), in November 2022, providing a strategic overview of shelter and settlements-related issues. The report on this assessment can be found in Annex 20.3.

- A NEAT+ sensitivity assessment for the NW/SW Clusters. Information on these assessments can be found [here](#) and [here](#).
- A NEAT+ sensitivity and activity assessment for the Far North, focusing on the Ardjani IDP site near Maroua. The report on this assessment can be found in Annex 20.4. The Far North assessment was conducted as part of a NEAT+ training but is sufficient in scope and content to be representative of IDP site conditions in the Far North.

The three assessments identified 70 discrete environmental issues, some strategic and some specific to NW, SW or Far North. The issues table was then consolidated to remove duplicates and indicate if an issue was specific to the strategic level or for the NW, SW or Far North. The results can be found in Annex 20.5 and provide the basis for the environmental management and monitoring plan (Section 9, following).

9. Environmental Management and Monitoring Plans

9.1. Environment Management Plan

The following table summarizes the issues and actions identified through the environment assessments described in Section 8 and provides a summary environmental management plan for shelter and settlements operations in Cameroon. The issues and actions outlined in the table should be considered as input into the humanitarian planning cycle (see Section 10).

The full list of issues grouped by overall sector with geographic area (strategic, Northwest, Southwest or Far North) identified, can be found in Annex 20.5. The full list can be used to refine actions to the locations where an issue is most specific.

Cameroon Shelter and Settlements Assistance Consolidated Environmental Issues and Actions	
Issue	Actions
Strategic Issues	
Lesser part of foods needs met⁵	<ul style="list-style-type: none"> • Incorporate food needs assessments in shelter and settlement planning. • Consider nutritional demands, levels of food aid and access and demands on natural resources to cover food and nutritional needs (e.g., harvesting wild foods, collecting firewood for sale to cover gaps in food needs). • Provide small scale grants to support commercial activities and household gardens as a way to improve food security and strengthen
Expectation that needs will be met from humanitarian assistance	Establish a system under the accountability-to-affected-populations approach which communicates assistance plans and expectations to affected groups and collects feedback to identify possible concerns.
Lesser part of need for personal safety met	<ul style="list-style-type: none"> • Design shelters and sites to reduce the potential for personal violence. • Assess and address the risk of violence to men, women, boys, girls from the collection of natural resources or other activities.
Poor physical access	<ul style="list-style-type: none"> • Include adequate access in the designs of shelter sites. • Consider livelihoods activities to improve access when possible.
Health	<ul style="list-style-type: none"> • Ensure a health facility is established when an IDP site is created. • Review cooking facilities to limit indoor air pollution.
Water	Ensure that a potable water supply plan exists for IDP populations and sites that ensures a sustainable supply of water meeting minimum standards.

⁵ Unmet food needs often contribute to natural resource extraction, often excessive, and diminished means to maintain shelters.

Natural and Technological Hazards	Develop a natural and technological hazards management plans for each IDP site or location where IDPs are present in significant numbers.
Deforestation	<ul style="list-style-type: none"> Assess demands on forest resources for shelter, livelihoods, cooking and other uses for IDP sites and locations where there is a significance presence of IDPs. Implement a forest resource management plan to avoid or minimize to the greatest extent possible negative impacts on forest resources. Where negative impacts do occur, implement remediation activities.
Natural Resource Extraction	<ul style="list-style-type: none"> Assess demands on natural resources for shelter, livelihoods, cooking and other uses for IDP sites and locations where there is a significance presence of IDPs. Implement a natural resources management plan to avoid or minimize to the greatest extent possible negative impacts on natural resources. Where negative impacts do occur, implement remediation activities. <p>Actions to address natural resource and forest resources can be combined.</p>
Wastewater Management	Implement wastewater management plans.
Solid Waste Management	Implement solid waste management plans, including options for reuse, repurposing and recycling and, for organize waste, composting.
Other Issues	
There is a high concentration and/or number of people. The potential environmental impact is greater.	Where possible, decongest IDP sites.
The community may be close to a protected/conservation area. There may be legal/social implications.	Establish agreements with government authorities and neighboring communities on access to protected or conservation locations.
There are areas of high cultural significance. This can threaten social cohesion.	

9.2. Plan Monitoring

The management actions are monitored as part of the regular Humanitarian Response Plan monitoring process based on the actions in the following table. Both the management and monitoring plans should be shared with and explained to the Shelter Cluster partners. This is best done at the same time as the Humanitarian Response Plan is developed to provide the opportunity for partners to incorporate relevant actions into project plans.

9.3. Suggested Further Action - HRP Indicators

The Cameroon Shelter Cluster has established environment-based indicators for the shelter segment of the Humanitarian Response Plan. As the IDP and operating situations in the NW/SW and Far North are different, the specific indicators for each area should vary slightly. Two draft indicators are provided as a starting point for refining area-specific indicators:

- Percentage of all affected households assisted with shelter materials which meet environmental criteria.
- Percentage of all affected households assisted with core and essential non-food items (NFIs) which meet environmental criteria.

The following actions can be used to assess whether the indicators have been met:

For all assistance:

- An environmental screening has been completed for the site.
- An environmental management plan has been completed and implemented for the site, covering shelter and other basic needs-related assistance (i.e., based on a settlements approach).
- Packaging for shelter or NFIs has been minimized and packaging which has not found an immediate use is recovered and reused, repurposed or recycled.

For shelter assistance:

- A score card screening has taken place for shelter options to minimize environmental impacts.
- Extraction of local natural resources for shelter construction or repairs has been minimized.

For NFIs

- A score card screening has taken place for NFI options to minimize environmental impacts.
- Environmental impacts of the site are being monitored by local authorities, site residents and neighboring residents through an environmental management committee.

Note that the site-specific environmental screening (e.g., using NEAT+) may identify actions based on conditions at a specific location or for a specific affected population. This screening, together with the management plan, provides a mechanism for refining or supplementing the issues in the Consolidated Environmental Issues and Actions table, above, at the activity implementation level.

10. Humanitarian Programming

10.1. Humanitarian Programming Cycle

Humanitarian operations in Cameroon are based on the annual Humanitarian Programming Cycle (HPC - see image below). Information on the HPC process can be found at this link, <https://www.humanitarianresponse.info/en/programme-cycle/space> including the current year guidance and templates.

The most recent [Humanitarian Response Plan Cameroon: Humanitarian Programme Cycle 2023](#) incorporates environmental considerations and notes the Shelter Cluster's introduction of an environmental indicator.



10.2. Suggested Further Actions

Materials and suggested actions from the **Profile** can be used as input into future work under the HPC process.

11. Remote Sensing and GIS Data and Analysis to Enhance Humanitarian Shelter Programming

Remote sensing together with geographic information systems (GIS) can provide a useful to collect, analyze and present data on environmental and other aspects of the shelter response in Cameroon. Remote sensing has been used in the past, e.g., for the Buea floods disaster and for workshops in the NW/SW. GIS provides a functional way to document assistance provided to sites, the environmental conditions of sites and, over the longer term, any environmental changes which may occur at IDP sites.

11.1. Suggested Further Action

The Cameroon Shelter Cluster should consider establishing a GIS capacity to collect, analyze and present data on sites.⁶ Where appropriate, remotely sensed data can be added to the GIS to better understand the environmental and other impacts of sites.

12. Site Selection and Planning

12.1. Status of Site Selection and Planning

Operations in the NW/SW do not have IDP sites. In the Far North, site selection is done by Government authorities, in some cases assisted by humanitarian partners. Site planning is also primarily a government undertaking with support from humanitarian partners. While it can be hoped that there will not be a need for new IDP sites in the future, building capacities across government, international and national partners would improve preparedness and abilities to meet accepted site selection and planning criteria in the response to future displacements.

12.2. Suggested Further Action

The Shelter Cluster team should consider, in collaboration with refugee assistance programming, implementing site selection and planning capacity development support for government officials and national partners.

Resources on camp management and camp coordination, including site planning, can be found here in the [Camp Management Toolkit](#). Guidance on site selection and planning from an environmental perspective is available in Annex 20.6.

13. Housing, Land and Property Security and Environment

13.1. Overview

Extracted from [Humanitarian Response Plan Cameroon: Humanitarian Programme Cycle 2023](#).

In 2023, the HLP AoR will scale up interventions in the Far North, North-West and South-West regions and will begin response in the West and Littoral regions to address key HLP issues and ensure that displacement-affected populations enjoy their rights. The capacity to provide the response has increased compared to 2022 as more humanitarian actors, especially in the North-West and South-West regions, received training and are now involved in the HLP response.

Condensed from [Housing Land and Property in the Far North of Cameroon](#)

The assessment identified the following main challenges faced by displaced persons in accessing HLP rights in the Far North of Cameroon:

- *Living conditions in hosted accommodation.*
- *Living conditions in rented accommodation.*
- *Access to land and the construction of shelter.*
- *Access to land for livelihoods.*
- *Displaced women's HLP rights.*
- *HLP and legal identity documentation.*
- *Undocumented and illegal HLP transactions.*

Typology of HLP disputes:

- *In relation to contracts: rental agreements, non-repayment of loans of agricultural land and merchandise.*
- *Conflicts around natural resources: Disputes related to the use of water points and conflicts between pastoralists and agriculturalists.*

⁶ Note that NEAT+ data can be integrated into an GIS.

- *Institutional conflict: related to administrative procedures and land speculation.*
- *Double renting and double selling.*

Recommendations

- *Ensure that HLP is integrated into humanitarian responses.*
- *Improve IDPs' living conditions and security of tenure.*
- *Conduct additional research on the HLP rights of women affected by displacement in the Far North of Cameroon and identify practical solutions to support their enjoyment of HLP rights.*
- *Build the capacity of statutory and customary authorities to protect HLP rights and collaboratively resolve an increase of HLP-related disputes in displacement locations.*

The NW/SW Standardized Household tool includes an HLP assessment and indicators. The results are shared with partners. See <https://sheltercluster.org/north-west-south-west/pages/northwest-and-southwest-cameroon-crisis-coordinated-shelter-household>".

13.2. Suggested Further Action

A housing, land and property assessment should be done for the Far North.

14. Site Decommissioning

14.1. Site Decommissioning Overview

No site decommissioning is currently underway or planned. First responsibility for site decommissioning rests with government authorities, although humanitarian agencies are likely to also be involved, particularly if the decommissioning process is part of a formal return or relocation program.

14.2. Suggested Further Action

Given the presence of IDP sites in the Far North, the Far North Hub should work with partners and the government to develop guidance on site decommissioning. This effort should include the development of preliminary site decommissioning plans for specific IDP sites, in collaboration with the camp management focal point and local authorities.

Guidance on site decommissioning is available in **VEHA - Field Implementation Guidance: Decommissioning of sites and handover**, and [Environmental Perspectives of Camp Phase-Out and Closure: A Compendium of Lessons Learned from Africa](#).

15. Shelter Construction

15.1. Shelter Cluster Assistance

Shelter construction activities in the [NW/SW focus on light repairs to damaged housing](#) and providing a [basic emergency shelter kit](#) when needed. Repairs are generally done through a combination of cash and labor assistance.

The scale of repair work is not likely to have an impact on natural resources. The emergency shelter kit does anticipate that local forest resources may be used to build a shelter out of plastic sheeting. The environmental impact of emergency shelter assistance would depend on the number of shelters to be built.

Shelter construction activities in the Far North are set out in [Technical Standards of Interventions](#) for three types of shelter:

- INT2 – plastic sheeting, rope, wood for roof and nails
- INT3 – Type INT2 with the addition of additional wood for the roof and wood post to hold up the roof.

- INT4 – Type INT3, plus cement, zinc roofing, additional plastic sheeting, nails, grass mats, door, window and other materials, for a transitional or semi-permanent structure.

Types INT2 and 3 are basically intended for immediate shelter and INT4 for more permanent shelter.

An issue noted reviewing INT2 and 3 type structures was that they tend to degrade after about 2 years, due to termite damage and weathering of plastic sheeting. These shelters will need to be replaced or rebuilt by occupants. In the latter case, increased demand on timber and other natural resources can be expected, with the scale of the demand determined by the number and design of the self-constructed replacement.

15.2. Suggested Further Actions

- Shelter construction or repair efforts in both the NW/SW and Far North should conduct a scorecard assessment of environmental impacts. The scorecard approach is described in Chapter 9, [Roadmap for Research](#).⁷ Current approaches to shelter-focused score cards are the [Luxembourg Red Cross process](#) and the [UNHCR Shelter Sustainability Assessment Tool](#).

The Red Cross tool is relatively quick and focuses on a limited number of key environmental indicators. The UNHCR tool is more complex and covers “Embodied CO₂equivalent (kgCO₂e/year/m²), Embodied water (L/year/m²), Material efficiency (kg/year/m²), Technical performance (% score based on defined criteria), Habitability (% score based on defined criteria), and Affordability (shelter cost in US\$/year/m²).”

- The Far North Hub should consider increasing the durability of replacement shelters by considering the use of metal poles to replace wooden posted (liable to termite damage) and either replacing plastic sheeting roofs with zinc sheets, or covering plastic sheeting with grass (as used in traditional roofs) to reduce ultraviolet damage to the plastic and lengthen its functional life.

16. Non-Food Items (NFI)

16.1. NFI Overview

The NW/SW and Far North hubs have developed standard NFI kits. The kit for NW/SW can be found [here](#). The kit for the Far North can be found [here](#).

The kits are similar but not identical, as would be expected for different climates and cultures. While some market assessments have been done, an issue is whether locally available NFI meet comparable standards and quality to items procured through UNHCR.

16.2. Cash and Voucher Assistance

Shelter and other assistance projects in the NW/SW have used:

- Cash: for rent payments and to purchase household items,⁸ and
- Vouchers to purchase household items.

This type of assistance has advantages over NFI supplies from agency stocks in terms of speed of assistance delivery, reduced administrative requirements and empowering those receiving the assistance.

The cash and voucher assistance efforts in the NW/SW are well developed but likely would benefit from a review of the following documents:

⁷ The NW and SW hubs reviewed the scorecard approach in workshops on the environment in March 2023.

⁸ And, for repair costs, under shelter assistance.

- **Review of Environmental Impact of Cash Based Interventions and In-Kind Assistance**
- **The Environmental Impact of Cash and Voucher Assistance**
- **Looking Through an Environmental Lens: Implications and opportunities for Cash Transfer Programming in humanitarian response**
- **Cash - The interdependence between Cash Transfer Programming (CTP) and the environment in humanitarian response**
- **Checklist CVA and Environment**

There is also a Global Shelter Cluster Shelter and Cash Working Group and a CALP Network CVA, the Environment and Climate Change Community of Practice which can be contacted for advice.

16.3. Suggested Further Actions

Global Shelter Cluster partners are working on a practical approach, based on the scorecard concept,⁹ to better understand the environmental impact of NFIs and possible alternative approaches. It is suggested that the Cameroon Shelter Cluster conduct pilot scorecard reviews of current NFI assistance using the scorecard in Section 20.7.

17. Key Considerations for Energy and Fuel

17.1. Overview

It appears that the most significant issue with energy and fuel for IDPs in Cameroon is fuel for cooking. The NEAT+ assessments indicate possible threats from forest and natural resource extraction, part of which would come from a need for fuel for cooking.

However, it does not appear that assistance operations in the NW/SW or Far North currently engage extensively on energy and fuel issues from an environmental perspective. In fact, the issue may be more significant in the Far North, where demand for fuel, for cooking by IDPs and as an income activity for sale as cooking fuel, can have a significant negative impact on the environment.

17.2. Suggested Further Actions

- Assessments of cooking fuel collection, use and sale by IDPs should be used to understand the scope of any impact on local environments.
- Where justified by the level of impact identified, use a project mechanism to promote the use of alternative fuels, improved stoves and alternative livelihoods options to reduce demands on natural resources.

18. Debris and Waste Management

18.1. Debris and Waste Management Overview

Debris management is not currently a direct activity of the Shelter Cluster in NW/SW Cameroon, although it can be part of light repairs to damaged shelter in some cases. Waste management is not part of the scope of activities in NW/SW Cameroon as most of the IDPs are not located in discrete sites outside the coverage of normal waste management systems.

Events in the Far North have not resulted in any significant level of debris from the built environment. Currently waste management in IDP sites is not within the scope of the Shelter Cluster coordinated activities.

18.2. Suggested Further Actions

The NW/SW and Far North review the impact which IDPs are having on waste generation and consider activities to improve waste management with recycling and livelihoods and

⁹ See Chapter 9, [Roadmap for Research](#).

agricultural (e.g., waste composting) components. These efforts can be in collaboration with WASH and food security activities. Guidance on is available on [Waste management in camp settings](#).

19. Disaster Risk Management and Nature-based Solutions

19.1. Overview

Disaster risk management and nature-based solutions are not currently part of the Cameroon Shelter Cluster strategy for IDP support. However, the Cluster has been called upon to response to natural hazard events in the past, and this is likely to continue as long as support is provided to IDPs. A [report](#) on flooding in Buea in 2023 provides an example of the operations undertaken and challenges faced.

Analysis of the disaster risk management system in Cameroon indicates a weakness in risk reduction.¹⁰ The likely impact is that IDP-support efforts will continue to be called upon to address natural hazard events when they occur.

Initial IDP assistance focuses on meeting basic needs and generally does not include actions to reduce disaster risk, including nature-based solutions. At the same time, initial assistance should not increase risks faced by IDPs (e.g., establishing IDP sites in flood zones) and include measures to reduce risks over the longer term. To this end, initial IDP response efforts should include hazard assessments and mitigation measures, including nature-based solutions where appropriate. Note that nature-based solutions can be part of IDP support activities which deal with reducing impacts on forest or other natural resources.

19.2. Suggested Further Action

It is suggested that planning to provide support for IDPs (in sites or as residents of existing communities) include hazard assessments and plans to reduce the risks from identified hazards. Where possible, these plans should include nature-based solutions as part of actions to reduce the impact of IDPs on forest and other natural resources. Where practical, these risk reduction efforts should extend to neighboring communities as they are likely to face the same risks as IDPs.

¹⁰ [Disaster Risk Reduction in Cameroon: Are Contemporary Disaster Management Frameworks Accommodating the Sendai Framework Agenda 2030? and A status quo analysis of disaster risk reduction policy and legislation in Cameroon](#)

20. Annexes

20.1.1. Environmental Actors – Cameroon

Environmental Actors – Cameroon			
Sourced from https://www.ecohubmap.com/list/NGO/all/Cameroon?page=1 ,			
Name	Organization Statement	Web Site	Address
The Greens	We are an international not-for-profit, non-sectarian and apolitical youth environ-agricultural and health organization that connects, inspires and collaborates with young change-makers to build thriving, just and sustainable ways of life for all.	https://www.thegreens-international.org/	Mile 2 Nkwen, First Off License, Ndamukong St, Bamenda
Crusaders for Environmental protection and Ozone Watch	CEPOW is a Cameroon based nonprofit organization.it aims at addressing up rising environmental issues through adaptation and mitigation to climate change. We focus on providing sustainable livelihoods where no one is left behind.	https://www.cepowcameroon.org/	Old Town Bamenda, Cameroon
CIPCRE	Nous avons pour mission d’œuvrer pour la promotion de la création en contribuant à la transformation des structures sociales et au renforcement des capacités pratiques et stratégiques des populations défavorisées pour la prise en main de leur destin.	https://www.cipcre.org /	B.P. 1256, Bafoussam, Cameroun
ICENECDEV	Transforming People to Change Attitudes in Order to Appreciate and Value our Ecological Assets and Natural Resources for Our Collective Future.	ICENECDEV	P.O Box 641 Lower Bokova, Mile 15, Buea South West Region, Cameroon
RCESD	It is the mission of RCESD to contribute to the sustainable development agenda through collaborative research, capacity building and project support. We look at how environmental integrity and social justice can be achieved in a dynamic and complex globe in which we live. We lay emphasis on collaborative actions and networking.	https://rcesdcam.org/	P.O Box 30, Buea, Southwest Region, Cameroon
Green Cameroon	Green Cameroon is a small NGO in Buea that works towards environmental protection.	https://www.greencameroun.org/	P.O.Box 96 Buea, South West Region, Cameroon
Centre pour l’Environnement et le Development (CED) (Friends of the Earth)	Le CED s’est donné pour mission de contribuer à la protection des droits, des intérêts, de la culture et les aspirations des communautés locales et autochtones des forêts d’Afrique Centrale, par la promotion de la justice environnementale et de la gestion durable des	http://www.cedcameroun.org/	Rue 1115 Etoa-Meki 3430 Yaounde, Cameroon

Cameroon)	ressources naturelles dans la région.		
Greenpeace Cameroon	We want to live on a healthy, peaceful planet. A planet where forests flourish, oceans are full of life and where once-threatened animals safely roam.	https://www.greenpeace.org/international/	Cameroon
Central African Forest Commission	Pour favoriser un meilleur ancrage de la COMIFAC avec les processus au niveau national, et permettre une appropriation des priorités du Plan de Convergence, des passerelles ont été établies à travers la mise en place des Coordinations Nationales.	https://www.comifac.org/	Cameroon
WWF Cameroon		http://www.wwf-congobasin.org/	Immeuble Panda Route "La Citronelle" B.A.T. Compound, Yaoundé, Cameroon
Organization for Environment Protection and Rural Infrastructure Development	Organization For Environment Protection And Rural Infrastructure Development (oreprid) a not for profit nongovernmental organization (NGO) founded in 2013 by Divine Kowa Yangum with elders and strangers from Mbo Barombi village.	https://oreprid.wordpress.com/	Cameroon, Southwest Region, Meme Division Kumba
FEDEC - Fondation pour L'Environnement et Le Développement Au Cameroun	after 17 years of experience in the field implementing the Environmental Management Plan of the Chad-Cameroon Pipeline Project, our ambition is to put our expertise in the management and monitoring of compensation funds to the service of other projects being implemented in Cameroon which have negative biophysical and social impacts on the environment	https://fedec.cm/	Yaoundé – Cameroun, Rue CEPER – PO: 3937
Ape Action Africa	Ape Action Africa is passionate about great ape conservation in Cameroon. Our mission is to address the immediate threats faced by gorillas and chimps in Africa and to work with communities to develop long-term solutions to ensure their survival in the wild.	https://www.apectinafrica.org/	Mefou Primate anctuary Méfou, Cameroon

20.1.2. Shelter Cluster Partners

20.2. Cameroon Shelter Cluster Partners

Shelter Cluster Partners¹¹		
National^{12,13}	Northwest/Southwest	Far North
Action Against Hunger*	Association of People with Albinism	Agence de Développement Economie et Social/Agency for Economic and Social Development
Action Dynamique pour le Bien-Être des Femmes et Enfants Vulnérables au Cameroun/ Dynamic Action for the Wellbeing of Vulnerable Women and Children in Cameroon	Afoni Children of Hope Foundation	Association des Animateurs et Encadreur en Développement Communautaire/Association of Animators and Trainers for Development
Aspired Women Empowerment and Development Organization	CAMHELP	Association Sanitaire pour l'Aide a la Femme et aux Enfants Défavorisés/Sanitary Association for Aiding Disadvantaged Women and Children
Association des animateurs pour le Développement Communautaire/ Association of Animators for Community Development	Community Action Scheme Africa	Association Serbowel Facilitateur pour les Humanitaires/Association Serbowel Facilitators for Humanitarians
Association pour le Développement Economique et Social/Association for Economic and Social Development	Catholic Relief Services	Conseil National de la Jeunesse du Cameroun, Bureau Régional de l'Extrême Nord/National Youth Council of Cameroon/Regional Office for the Far North.
Association Serbowel Facilitateur pour les Humanitaires/Association Serbowel Facilitators for Humanitarians	Center for Research, Education and Resources Distribution to the Rural and Underprivileged People	Conseil Régional Extreme Nord / Far North Regional Council/ Far North Consortium for Resilience
Catholic Relief Services*	Community Health and Social Development for Cameroon	ENJEAL NYS AGRO
Caritas - Comité Diocésain des Activités Sociales/ Diocesan Committee for Social Activities	Danish Refugee Council	Jesuit Refugee Service
Community Health and Social Development for Cameroon*	Dynamic Women and Empowerment	Ministère de l'Habitat et du Développement Urbain, Ministry for Housing and Urban Development
Croix-Rouge Française	Hope for a Better Future	Ministère de l'Environnement, de la Protection de la Nature et du Développement durable, Ministry of the Environment, Protection of

¹¹ Organizations listed may be involved in shelter, NFIs or other shelter/settlements associated assistance and may or may not provide assistance to refugees as well as IDPs. Organizations only involved in “cash” assistance may not be listed.

¹² Based on OCHA 4W Report – not all organizations may be currently active in shelter and NFI assistance. Organizations only involved in “cash” assistance may not be listed.

¹³ Organizations with a * are members of the Shelter Cluster Strategic Advisory Group.

		Nature and Sustainable Development
Danish Refugee Council	Global Community Rescue	Ministère de la décentralisation et du développement local, Ministry of Decentralization and Local Development
Demtou Humanitarian	Global Welfare Association	Première Urgence Internationale
Finders Group Initiative	International Medical Corps	Public Concern
Green Partners Association	International Organization for Migration	The World We Want
Interfaith Vision Foundation Bamenda, Cameroon	International Rescue Committee	UN High Commissioner for Refugees
International Emergency and Development Aid*	Ministère des Affaires Sociales, Ministry of Social Affairs	Youth Collective for Peace and Sustainable Development
International Federation of Red Cross and Red Crescent Societies	Molatako Women Wonalyonga Association	
International Organization for Migration*	Norwegian Refugee Council	
International Rescue Committee	One Green Africa	
INTERSOS*	Refugee Welfare Association	
Lutheran World Federation	Strategic Humanitarian Services	
Magdalene Home Care and Training Center	Society Initiative for Rural Development and Environmental Protection	
Norwegian Refugee Council	UN High Commissioner for Refugees	
Plan International*	World Economy Skills and Agro-Development	
Positive Vision Cameroon		
Premiere Urgence		
Public Concern*		
Strategic Humanitarian Services*		
UN High Commissioner for Refugees*		
UNICEF		
World Economy Skills and Agro Development		

20.3. Rapid Environmental Assessment Report Mission Report – Environmental Support to Cameroon Shelter Cluster

Introduction

This report covers a mission to Yaoundé, Cameroon from 21 to 26 November 2022. The mission was in response to a Cameroon Shelter Cluster request for support from WWF/US in incorporating environmental considerations into the development of a Shelter Cluster strategy. The mission was conducted by C. Kelly, Disaster and Environment Advisor, WWF/US¹⁴ and funded through an ECHO grant to UNHCR.

The main tasks of the mission were to

1. Conduct a pre-mission online environmental assessment.
2. Hold a workshop to review and refine results from the assessment (see Annex A for the workshop plan).

¹⁴ Email: havedisastercallkelly@gmail.com.

3. Provide assessment and workshop results to the Cameroon Shelter Cluster as input into their strategy development process.

The remainder of the report provided a summary of the results from these three tasks.

Use of the Rapid Online Environmental Impact Assessment Methodology

The [Rapid Environmental Impact Assessment in Disasters](#) (REA) methodology was used as the basis for collecting and analyzing information on environmental impacts of the humanitarian crisis in Cameroon. The REA process is based on a normal environmental impact assessment approach but recognizes that detailed and conclusive results are rarely available during a crisis and a *Good Enough* approach is acceptable in a humanitarian response.

For the online assessment, elements of REA Modules 1 to 4 were converted into questions and incorporated into a MS Forms™ survey. Additional questions, on gender and humanitarian access, were added to the survey. A link to the survey was circulated to Shelter Cluster partners with 20 responses were received. A copy of the survey can be found in Annex 2.

The results were reviewed at a workshop on 24 November 2022, with commentary collected (summarized below). Participants discussed the environment-related issues identified and rated them in term of whether they could pose an immediate threat to life, welfare or just the environment (see the **Life, Welfare, Environment** box below).

The issues ranked as life threatening were then reviewed by two groups of workshop participants to identify options to avoid or mitigate the impacts of these issues. The group work results were then discussed by the workshop participants.

Subsequent to the workshop, the consultant who led the workshop provided additional comments on measures to address the issues identified as life threatening and relative to their inclusion in the Cameroon Shelter Cluster strategy.

The following sections summarize the results from each of the steps covered above.

Online Assessment Results and Commentary

The results of the online rapid environmental impact assessment (available from the Cameroon Shelter Cluster). The results were based on 20 respondents. The greatest number of responses which were selected for each question were extracted from the survey results and added to an **Issues Ranking and Rating Table** (see below).

Responses to the survey were specific to the following locations in addition to reflecting on Cameroon as a whole:

Adamaoua Region

East Region

Far North Region

- Longe-et-Chari

Littoral Region

Northwest Region:

- Bafut Subdivision (Mezam Division)
- Bamenda 1 Subdivision (Mezam Division)
- Bamenda 2 Subdivision (Mezam Division)
- Bamenda 3 Subdivision (Mezam Division)

- Benakuma Subdivision (Menchum Division)

- Mbengwi (Momo Division)

- Wum (Menchum Division)

Southwest Region

- Kumba 1 (Meme Division)

- Kumba 3 (Meme Division)

- Meme Division

- Mamfe Subdivision (Manyu Division)

- Idenau (Fako Division)

West Region

Although the environmental assessment was done for Cameroon as a whole, a focus was on Cameroon Shelter Cluster activities in the Northwest/Southwest and Far North. Each of these areas has significantly different environmental conditions and differences in the nature of the conflict or other disasters affecting residents. As a result, the assessment results reflect an overall (programmatic) perspective on shelter and NFI assistance in Cameroon, but necessarily not local condition within any of the areas of operations. This point is discussed further in the **Conclusions**.

Comments on the environmental assessment results from the workshop participants included (from the French¹⁵):

- There is an issue with the English (survey).
- The terminology for “personal safety” does not seem to be appropriate.
- Not all the elements of assistance sectors are considered in the questionnaire.
- The need of the host communities and the welcome communities are not clearly covered in the survey.
- There isn't uniformity in the perception of the migration phenomenon.
- A larger number of the (workshop) participants know more about the Far North. ¹⁶
- Environmental security and politics are very volatile.
- The demand for humanitarian aid is larger at the beginning of migration than in following (stages).
- In the Northwest/Southwest, there are issues with high winds/violent storms and dust during the dry season.
- In the Far North there are issues with floods, heat and chronic epidemics.
- Access is an issue.
- (Access to) water is an issue.
- There is a need to (consider) the maintenance of (physical) infrastructure (e.g., roads).
- Need more details on the location of the target populations.
- The problem with access to water and shelter is not the same everywhere.
- (There is) regional complexity.
- (There are) different situations but the same response methods.
- The survey has its limits but it is true that humanitarians cannot respond to all the needs.

¹⁵ The online survey and the workshop were conducted in English, with translation during the workshop to French, but all but one of the workshop participants spoke French. It is not clear if the use of the survey just in English influenced the results.

¹⁶ During a review of the initial report it was noted that “Most of the participants if they were not nationally based were from/working on that region. Some partners from NWSW joined only online but connection was not ideal.”

In reviewing the survey results it was also noted that the use of firewood for cooking has

an impact on the environment in IDP and refugee sites.

Issue Ranking and Rating

The **Issue Ranking and Rating Table** (below) provides the ranking for each issue where a specific answer to a question was selected six or more times. For several issues, the response itself, e.g., “lesser part” is also noted.

Life, Welfare Environment Hierarchy
As described in the **Guidelines**, prioritization of issues is based on whether an issue (1) Immediately threatens the life of crisis-affected individuals (indicated with an “L”), (2) Is a threat to the Welfare (livelihood, health, social situation, etc.) of affected individuals, but is not life threatening (indicated by a “W”) or (3) Does not threaten life or welfare, and thus identified as an environmental issue (indicated by an “E”).

This prioritization process reflects the focus of humanitarian operations on saving and providing essential support to the lives of the crisis affected. Issues grouped under an “E” priority may be significant, and should be dealt with in a developmental approach, but would not be the focus of humanitarian operations.

The table also provides the rating assigned to each issue listed based on the **Life, Welfare, Environment Hierarchy** (see box above). Two separate groups did the rating, leading to two “L, W, E” rating columns in the table. As a result, the L, W, E ratings for each issue differs in some cases. Cells with “L” ratings are highlighted.

The REA process is designed to quickly identify important (life threatening) issues in a humanitarian response context. Issues which are rated as “W” or “E” remain important, but would not normally be expected to be addressed immediately in a humanitarian response.

The REA process also recognizes that the rating of issues may change over time, particularly where “W” issues can change to “L” issues as the humanitarian response continues. Refer to the [Rapid Environmental Impact Assessment in Disasters](#) document for further information on the

ranking and rating processes and the perception and *Good Enough* approaches used for this rapid assessment.

Issue Ranking and Rating Table			
Issue	Ranking	Rating L, W or E	
Waste management	18	E	W
Need for food met – lesser part	18	L	L
Need for livelihoods met – lesser part	18	W	W
Need for water met – lesser part	17	L	L
Need for shelter met – lesser part	17	W	W
Need for NFIs met – lesser part	17	W	W
Need for health care met – lesser part	15	W	L
Human disease	14	L	L
Need for energy met – lesser part	14	E	E
Expectation that needs will be met from humanitarian assistance	12	L	W
Need for personal safety met – lesser part	12	L	W
Need for transport met – lesser part	12	W	W
Few livelihood options	11	W	W
Access – poor	10	L	W
Not strong or weak social connections	10	W	W
Floods	9	L	E
Pest affecting crops	9	E	E
Ability of natural resources to cover needs	8	E	E
Wildfire (outside camps)	6	E	E
Landslides	6	E	E
Sand and Dust storms	6	E	E

Issue Management Options

Following the rating process, the two groups involved were asked to identify management options for the issues identified as life threatening. These results have been merged in the **Issue Management Options Table** below. As there was limited time for this exercise, additional options have been identified in *italics* by the consultant leading the workshop for consideration going forward. Note that the issues listed in the table are not in any implied priority.

Issue Management Options Table	
Issue	Management Option
Need for food met – lesser part	Advocate for financing. <i>Incorporate food needs assessments in shelter and settlement planning. Consider nutritional demands, levels of food aid and access and demands on natural resources to cover food and nutritional needs (e.g., harvesting wild foods, collecting firewood for sale to cover gaps on food needed). Consider small scale grants to support commercial activities and household gardens as a way to improve food security and strengthen livelihoods.</i>
Need for water met – lesser part	Emergency preparedness. Distribution of water. <i>Include plans for assuring sufficient water in shelter and settlement plans. Integrate water collection into shelter designs and NFIs.</i>
Need for health care met – lesser part	<i>Design shelters and sites to consider health impacts, including indoor smoke, and impacts of heat, cold and rain (to reduce need for health care). Incorporate health care capacity into settlement plans.</i>
Human disease	Preventive strategy. Mobilization (of resources). Improve the conditions of shelters. Sanitation. Provide medicine. <i>Design shelters and sites to consider health impacts, including indoor smoke, and impacts of heat, cold and rain (to reduce need for health care). Incorporate vector control and site sanitation into site plans (incl. as livelihoods activities).</i>
Expectation that needs will be met from humanitarian assistance	Save lives. <i>Establish a system under the accountability-to-affected-populations approach which communicates assistance plans and expectations to affected groups and collects feedback to identify possible concerns.</i>
Need for personal safety met – lesser part	GBV/Protection against violence. Child protection. <i>Design shelters and sites to reduce the potential for personal violence. Assess and address the risk of violence to men, women, boys, girls from the collection of natural resources or other activities.</i>
Access – poor	<i>Include adequate access in the designs of shelter sites. Consider livelihoods activities to improve access when possible.</i>
Floods	Improve water management. Review shelter types. <i>Avoid establishing shelter sites in potential flood zones if possible. Incorporate drainage into shelter site planning and consider livelihood activities to construct and maintain these systems. Consider warning systems where flooding is a significant risk.</i>

Conclusions

The online rapid environmental assessment survey and the 24 November 2022 workshop identified, ranked and rated a number of environmental issues facing the humanitarian shelter response in Cameroon. Management options were identified for the eight issues identified during the workshop as posing an immediate threat to life.

Several of the issue identified as threatening to life relate to the design of shelters. However, all the eight life threatening issues, and many of the other “Welfare” and “Environment” issues identified, relate to the overall process by which assistance is provided to affected populations. Functionally, the issues and actions to address fall generally under a settlements approach.

Incorporating the settlements approach into the Cameroon Shelter Cluster Strategy would broaden consideration of the links between providing shelter materials and developing a better understanding

of how the process of sheltering is tied to issues such as demand for natural resources (e.g., when these resources need to be monetized to cover food or health needs) or the related issue of conflict over natural resources.

Further, if a reasonable package of assistance meeting basic needs (while considering the affected-populations' own capacities) is not provided as part of sheltering efforts, the likelihood of successful shelter effort is reduced. No one will stay in a shelter where they don't have access to water, food or other basic needs.

This is not to say that the Cameroon Shelter Cluster should address all the issues identified in the environmental assessment process. However, using an environment-wise settlements approach, these issues can be identified and incorporated into humanitarian response planning.

On a more operationally immediate basis, it is suggested that the **Issues Ranking and Rating Table** be shared with subnational operations partners. These partners can rate the issues and identify management options (as was done for the **Issue Management Options** table).

This process can take place through a workshop to better capture a diversity of views and options relevant for the region where operations are taking place.¹⁷ The results from this effort can be used to better *localize* both the environmental issues facing shelter operations and measures to address these issues.

Looking further ahead, the integration of a settlements approach and recognizing the environmental aspects of this approach into the next Humanitarian Response Plan will place environmental issues more directly in the humanitarian response process. This would, among other things, more closely tie the HRP to ECHO's humanitarian assistance greening strategy, as well as concerns about incorporating climate change awareness into humanitarian shelter operations.

Annex A – Workshop Plan

Cameroon Shelter Cluster Support to Environmental Strategy Development¹⁸

Background

The Shelter Cluster in Cameroon is integrating environmental issues into humanitarian responses across the country. The first step in this process is to define the critical environmental issues which affect shelter operations in the country, and then identify strategic actions to address these issues. These issues and actions can then be reviewed by the Cluster partners and the Strategic Advisory Group (SAG), with the review results integrated into strategic plans and operations across partners.

This note sets out the objectives and modalities of a one-day workshop of Cluster partners and other stakeholders to identify (1) humanitarian related environment-focused strategic issues and (2) the parameters of how they can be addressed in humanitarian shelter operations.

Workshop Objectives

1. Identify environmental issues faced in providing humanitarian shelter in Cameroon.
2. Prioritize the issues identified based on their link to humanitarian requirements and environmental impact.
3. Identify strategic approaches to addressing the prioritized issues.

The workshop will result in a set of ranked environmental issues linked to humanitarian shelter assistance and a set of strategic actions which can be taken to address these issues.

Workshop Mechanisms

The workshop will be a combination of discussions, group work (see below) and presentations. A rapid assessment of environmental issues linked to humanitarian operations in Cameroon will be conducted before the workshop, with a summary presented during the workshop.

Draft Agenda

Session #	Timing	Session Title	Content	Method
1	0900-0915	Opening	Welcoming and opening speeches	Presentation and speeches.
2	0915-0930	Introductions	-	Round robin
3	0930-0945	Workshop		Presentation, Q&A

¹⁷ This presumes it would be impractical to conduct an in-person version of the online survey, although this would be optimal and in line with the way REAs are normally conducted.

¹⁸ Drafted by C. Kelly, havedisastercallkelly@gmail.com.

		objectives and results		
4	0945-1015	Why the Environment is critical to successful Humanitarian Operations	A review of how environmental issues and humanitarian operations are linked.	Presentation, group work and discussions.
	1015-1030	Break		
5	1030-1200	Rapid Environmental Assessment Results	Review of the online assessment results and ranking based on humanitarian importance.	Presentation of the assessment, group work and presentations and discussions.
	1200-1300	Lunch		
6	1300-1500	Identifying Impact Management Strategies	Identification of strategic measures to address environmental issues identified.	Presentation, group work and presentations and discussion.
	1500-1515	Break		
7	1515-1615	Turning Plans to Action	Peer review of strategic measures and revisions.	Presentation, peer reviews and presentations.
8	1615-1645	Review and Next Steps	A summary of the workshop and discussions in the next steps.	Presentation and discussions.
9	1645-1650	Closing	Thanks to participants	-

Workshop Manager

The workshop will be managed by C. Kelly, Disaster and Environment Advisor, WWF/US, supported by a grant from ECHO to UNHCR. Kelly will be responsible for:

1. The design of the workshop process and content for Sessions 3 to 9.
2. Presentations of contextual materials for Sessions 3 to 5.
3. Lead the facilitation for Sessions 5, 6, and 7.
4. Facilitate Session 8.

A summary report on the workshop will also be provided.

Facilitators and Moderators

Individuals will be identified in advance to serve as facilitators or moderators for group work sessions. A short briefing will be provided to these individuals before the workshop.

Work Groups

The number of work groups will depend on the number of participants, with each group of no more than 5 persons.

Online Participation

- For sessions 1 to 4 and 8, online participants will be able to submit questions in the Chat function.
- For sessions 5, 6 and 7, online participants will be organized into a specific working group backed by a moderator based at the workshop site.

Translation

Oral presentations and handouts will be in English with oral presentations translated into French. Questions and comments will be fielded in English or French. The language to be used by a working group will be identified by the workshop organizers.

Working Materials

The workshop will use a number of handouts which will be provided before the workshop for printing and distribution during the event.

Annex 2 – Online Survey

Shelter Environment Profile – Environmental Assessment Survey

Introduction

The Cameroon Shelter Cluster is developing an environmental profile to integrate environmental issues into the humanitarian response and improve the impact of assistance. A core element of the Profile, and the overall response (per Sphere Shelter Standard 7), is an assessment of the environmental impacts associated with a disaster. The assessment should focus broadly on all the environmental aspects of the disaster and affected population to ensure that direct and indirect negative environmental impacts which may affect shelter assistance are identified and ranked in terms of importance.

The REA process is based on collecting a combination of hard data, where available, and the understandings of the disaster or crisis context of the people completing the assessment. The combination of hard data and

individual understanding reflects the fact that complete, detailed, data on a crisis is not usually available until long after the crisis has ended.

The REA process is based on a *good enough* approach using the best available information at the time of the assessment. While environmental conditions may change over time, the *good enough* approach has proved sufficient to develop an adequate understanding of environmental issues which can be used to mitigate or avoid negative impacts as part of ongoing humanitarian responses.

The results of the environmental assessment will be used to develop an environmental management and monitoring plan (EMMP), also part of the Profile. An EMMP sets out actions which the Cluster partners can take to reduce the negative environmental impacts associated with the shelter and overall humanitarian response.

The on-line environmental impact assessment is based on the Rapid Environmental Impact Assessment (REA) process which has been in use for several decades. In this on-line assessment, each section of the assessment includes a short summary of the purpose of the section and guidance on how to conduct the rating process set out in the survey.

Background Information

Please provide information about who you are and what information you are using to complete the assessment. Providing your email address will allow us to contact you if we have any questions or need additional information.

1. Please provide your name.
2. Please provide your organization name.
3. Please provide your email address.
6. Which sector do you work in?
 - Shelter
 - Camp Management
 - WASH
 - Livelihoods
7. Please indicate the locations for which you are completing this survey. Write "Countrywide" if the survey is being completed for the whole country, that is, not for a specific location.
 - Armed conflict
 - Flooding
 - Earthquake
 - Cyclone
9. What are the sources of information which you are using to complete the survey? You can select more than one.
 - My own observations
 - Field assessment reports
 - Work on projects in addition to assessments
 - Conversations with affected populations
 - Reports from the field received, but I have not gone to the field
 - NEAT+
 - Other environmental assessment tools
 - Other
4. Which country do you work in?
5. In the country where you work, please indicate the location of your work.
 - Coordination
 - Logistics
 - Other
8. Please indicate the types of disasters or crisis covered by the assessment. Multiple responses are possible.
 - Drought
 - Disease/Epidemics
 - Other

Factors Influencing Environmental Impacts

This section considers the broader social and environmental factors which can influence, positively or negatively, the environmental impacts associated with a disaster or crisis. This information is useful in understanding the systemic aspects of possible negative humanitarian impacts. The resulting analysis provides input to programmatic decisions on how to shape assistance to reduce negative environmental impacts.

10. How many people have been affected by the disaster you are assessing?

Explanation: This question refers to the number of people currently directly affected by the crisis or disaster.

- Hundreds
- Hundreds to thousands
- Tens of thousands or more

What is the concentration of the affected population?

Explanation: The more concentrated the affected population, the greater possibility for damage to the environment.

- Low, that is households are more than 10 meters from each other.
- Moderate, that is households are more than 2 meters but less than 10 meters from each other.
- High, that is households are living within 2 meters or less of each other.

11. How far have the affected populations moved in an average due to the crisis?
Explanation: Affected people who have moved far from their normal homes are likely to have less access to natural resources and normal livelihood support systems. This may result in damage to the natural environment.
- They are close to their point of origin, that is they are at or less than 6 hours travel by car from their point of origin.
 - They are not close but not far, that is to say more than 6 hours to a day travel by car from their point of origin.
 - They are far from their point of origin, that is to say more than one day travel by car from their point of origin.
12. How self-sufficient are the affected population?
Explanation: More self-sufficient populations are less likely to place unsustainable demands on natural resources or humanitarian assistance.
- High, that is meeting all or most of their own needs from natural resources
 - Neither low or high, that is meeting a good part of their needs from natural resources but also reliance on humanitarian assistance and other sources.
 - Low, that is heavily reliant on the natural environment, humanitarian assistance and other sources.
13. What is the social solidarity between the affected population and local population?
Explanation: Strong social solidarity is expected to reduce the likely of conflict over environmental resources, e.g., pasture, water, land for crops, etc.
- Strong, that is the groups have pre-crisis cultural and social connections.
 - Not strong or weak, that is there are connections, but they are not strong or well established.
 - Weak, that is limited or no social or cultural connections.
14. What are the current livelihood options available to the affected populations?
Explanation: More livelihood options are expected to reduce demand on natural resources to meet basic needs.
- There are many options, that is all households have a variety of ways to meet their needs.
 - There are some options, that is, while households may have limited options, they are able to meet some of their needs.
 - There are few to no options, that is, households have limited or no means to meet needs and are heavily reliant on assistance and accessing natural resources.
15. What are the expectations of the affected populations in terms of external assistance?
Explanation: A greater expectation of external assistance (i.e., humanitarian, charity, community) can lead to tensions over the level of assistance provided and recourse to the natural environment when the expected assistance is not provided.
- Low, that is, most of the affected population do not need or expect to receive external assistance.
 - Moderate, that is, the affected population expects external assistance but also has other ways to meet needs.
 - High, that is, the affected population expect most of their needs to be met from external assistance.
16. What is the availability of natural resources to meet basic needs without damaging the environment?
Explanation: Over demand on the natural environment will lead to environmental damage.
- Good, that is, there is not damage to the environment.
 - Fair, that is, there is a risk of damage to the environment but damage has not yet occurred.
 - Poor, that is, damage is occurring to the natural environment.
17. How would you rate the ability of the affected population to safely manage waste (i.e., household waste, shelter or construction solid waste, debris waste)?
Explanation: An inability to safely manage waste will lead to negative impacts on the environment.
- Good to Excellent, that is, waste is safely managed.
 - Fair, that is, waste is managed, but the process can be improved.
 - Poor, that is, waste is poorly managed and causes negative environmental impacts.
18. Are activities of men, women, girls or boys linked to the environment potentially subjecting them to physical harm?
Explanation: Harvesting natural resources (e.g., firewood) can place individuals at risk of personal harm. Managing how resources are harvested can reduce risks and possible damage to the natural environment.
- No
 - In some cases
 - In many cases
19. If you answer In some cases or In many cases above, please indicate who might be affected? Multiple choices can be made.
Explanation: Identifying who may be at risk is useful in targeting assistance to reduce these risks.
- Women
 - Boys

- Not being met at all
 - Lesser part of needs being met
 - Greater part of needs being met
 - Needs are largely met
 - Needs are completely met
27. How would you rate the level at which the basic need for domestic resources (non-food items and clothing) is being met for the affected population?
- Not being met at all
 - Lesser part of needs being met
 - Greater part of needs being met
 - Needs are largely met
 - Needs are completely met
28. How would you rate the level at which the basic need for transport is being met for the affected population?
- Not being met at all
 - Lesser part of needs being met
 - Greater part of needs being met
 - Needs are largely met
 - Needs are completely met
29. How would you rate the level at which the basic need for livelihoods is being met for the affected population?
- Not being met at all
 - Lesser part of needs being met
 - Greater part of needs being met
 - Needs are largely met
 - Needs are completely met

Closing

30. Thank you for taking the time to complete the survey. Please feel free to add any contents below.

20.4. NEAT+ Environmental Review Training – Far North Cluster Hub

NEAT+ Environmental Review Training – Far North Shelter Cluster Hub – Maroua, 19-26 May 2023

Drafted by C. Kelly,
Disaster and Environment Advisor, WWF/US¹⁹,
supporting the Greening of the Global Shelter Cluster
through a grant from UNHCR financed by ECHO

Introduction

The Cameroon Shelter Cluster has initiated an effort to integrate environmental considerations, indicators and results into ongoing shelter and settlements operations. The NW and SW hubs have developed several reports supporting this effort and integrated environment as an indicator into their 5W reporting together with actions which indicate whether the indicator is being met.²⁰

To complement these efforts, the Cameroon Shelter Cluster requested support through the Global Shelter Cluster Greening Shelter initiative on country environmental profiles to facilitate development of environmental information and action plans for the Far North Shelter Hub. This report covers the work involved, including (1) a training on the NEAT+ tool, (2) practice in developing actions to address the issues raised a NEAT+ based review of environmental issues and (3) developing an indicator and actions to confirm achievement of this indicator. The NEAT+ Rural software was used in the Far North.

Given the differences in operating environments between the NW/SW and Far North hubs, the work in the Far North focused on training to use NEAT+ in the Kobo software so that further NEAT+ reviews could be conducted at IDPs sites across the Far North. UNHCR in Maroua has a number of tablets which can be used for Kobo-based data collection in the field and some participants were reported experienced in using Kobo for data collection. Although not a specific objective, training on NEAT+ and Kobo would also benefit refugee program assessments.

Additional work was done following the training to develop results which corresponded to outputs achieved in environmental review work in the NW and SW hubs. This included reviewing and confirming two environment indicators used by the NW/SW Hub and defining actions which indicate accomplishment of the indicators (see Section 4). At the time of this report, the indicators and indicative actions are being confirmed with shelter partners working in the Far North.

NEAT+ Training

Training on NEAT+ involved three morning sessions (23, 24, 25 May) focused on (1) concepts and process, (2) field data collection, and (3) analysis of results. The training also covered how to use NEAT+ with Excel™.

The use of mornings for the training was dictated in part by weather conditions (it was the hot season in the Far North), time needed to process the field data and other workload for training participants. In

¹⁹ havedisastercallkelly@gmail.com.

²⁰ Relevant documents can be found through these links: <https://sheltercluster.s3.eu-central-1.amazonaws.com/public/docs/NW%20Environmental%20Workshop%20Report.pdf?VersionId=T7JpBJdrMTFX1fRSAjFOPkM9CB7k5DD8>, <https://sheltercluster.org/north-west-south-west/documents/southwest-cameroon-shelter-cluster-environmental-mainstreaming>, <https://sheltercluster.org/north-west-south-west/documents/environmental-atlas-west-region> and <https://sheltercluster.org/north-west-south-west/documents/southwest-cameroon-regional-environmental-atlas>. Environmental atlases have also been prepared for the Littoral (<https://sheltercluster.org/north-west-south-west/documents/littoral-region-environmental-atlas>) and Western regions (<https://sheltercluster.s3.eu-central-1.amazonaws.com/public/docs/West%20Region%20Environmental%20Atlas.pdf?VersionId=wdZpOI26KUSAw.NMR5kts42KO3YqzyfJ>).

fact, the 3rd training day, allocated to results analysis, went on longer than planned due to the extent to which working groups engaged on developing plans to address issues identified in the assessment.

The training was presented in French based on earlier training materials used by the Greening project and the materials downloaded from the NEAT+ web site. The presentation materials for Days 1 and 3 can be found in Annex A.

Day 2 involved five teams conducting Kobo-based NEAT+ assessments at the Ardjani IDP site near Bogo, Cameroon. A total of five teams interviewed residents using the Kobo software. One of these groups interviewed a group of women.

The groups were told to complete the sensitivity, shelter, WASH and Food security modules, as time allowed. It generally took an hour or so to complete each module, with most teams making it through the Shelter module.

The 3rd day of the training focused on using survey results. Given that the activity results incorporated results from the sensitivity module, the trainees were told to focus on the activity module results.

Further, they were instructed to focus attention on issues in a descending order:

- Top priority for action: Issues which were rated as of *high concern* across all three indicators: (1) sensitivity, (2) impact of the activity, and (3) potential environmental risk (“3 reds”).
- Middle priority for action: Issue which two or fewer *high* ratings across the three indicators (“2 or fewer reds”).
- Lower priority: Issue which had no *high* rankings, with issues of *moderate concern* (orange) considered before issues of *lower concern* (yellow).

Given the number of issues identified and the time available, the trainees were divided into three groups, focusing on shelter, WASH and food security, respectively. The groups were instructed to take top priority issues (those rated of *high concern*) and develop a simple action plan to address the issues. Each group was to complete the following table for as many issues as they could within the time available.

What is the problem?	What should be done?	Who should do it?	When should it be done by?

The group work was shared with other trainees using flip charts and discussed. The flip charts were transcribed and are included in Annex B.

The Day 1 classroom training reached 26 persons, from both international and national organizations and government offices. Approximately 23 persons were involved in the post-field work analysis of NEAT+ results. Approximately 24 persons participated in the field work, including five women. Participant registration sheets are available from the Far North Shelter Cluster Hub.

Results

Overall, it appears that trainees were able to manage the Kobo data collection process and develop practical plans to address the issues raised.

Because of the training nature of the work with NEAT+, where not all four modules were completed in the field, and limited time during the 3rd day of the training, not all issues which could be raised in the NEAT+ were addressed by each of the three groups. None the less, the NEAT+ outputs can be used as a starting point for developing an environment management plan for the Ardjani IDP site. The Excel data file using the Kobo field data is available from the Shelter Coordinator in Maroua for further analysis.

The results indicate a relatively high level of trainee awareness of ways to address issues identified. It was noted that trainees made limited reference to the material in NEAT+ on defining ways to address the issues identified. In other words, trainees worked from experience rather than seeking out new information. At the same time, the more detailed information on managing issues provided with NEAT+ results may be more useful in actual project design.

The field work indicated that it would have been more efficient to have separate teams complete each of the four modules and then add results into the analysis. Based on the work in Ardjani, this would have cut the overall time needed to complete one full cycle of NEAT+ assessment (sensitivity and activity modules) to less than two hours in the field. The number of times the four modules should be used in a site depends on the size and diversity of the site – larger and more diverse sites would likely need more NEAT+ assessments to provide a better understanding of environmental conditions and issues.

Given the established nature of Ardjani, it was likely possible to complete much of the Kobo questionnaire off-site through interviewing people who have worked at the site. As is common in such field assessments, a large number of site residents waited while the Kobo forms were being completed, in many cases without input from the residents present due to the nature of the questions. None the less, seeing the site and interacting with residents filled out the information collected through the Kobo survey likely improved an understanding of environmental and other conditions at the site.

Additional comments from the trainees included:

- In some cases, the options provided did not match the local situation, and it was difficult to select the best alternative.
- In the WASH module, some questions were similar.
- The GPS function did not work well (this may be an issue with the tablets).
- Some questions appeared to refer to future conditions, as if Ardjani did not already exist.

While it is possible to edit the questions, it is not clear how this would affect the analysis integrated into the NEAT+ software. Given these points about the questions, trainees were told to answer questions based on current conditions at Ardjani where possible.

Further, it was noted that NEAT+ results did not appear to always capture some evident environmental issues, including:

- Wood collection (apparently a significant livelihood activity).²¹
- Garden irrigation and set-up
- Water demand and impact on groundwater levels.
- Waste.
- Shelter conditions, as coming closer to no longer being adequate.
- Cooking and fire, although air pollution from cooking was noted via NEAT+.
- Issues with the status of latrines (some non-functional) and their construction (not VIP).

These issues may not have been included as a result of the answers provided in Kobo and thus are not an issue with NEAT+ software. However, the design of NEAT+, to cover most common environmental issues cross all types of camps and IDP sites, may lead to gaps in topical coverage. As shelter site and environmental conditions in the Far North are unique for Cameroon, a Hub-specific observation checklist for common types of environmental issues may be useful.

Recommended Indicator and Impact Management Actions

Based on the work done to date in the NW/SW and the results of the Maroua training, it is recommended that the same environmental indicator be used for all the hubs:

- Number of households assisted with shelter materials which meet environmental criteria.
- Number of households assisted with core and essential non-food items (NFIs) which meet environmental criteria.

The actions which identify whether the indicators have been met are:

- ✓ An environmental screening has been completed for the site.
- ✓ An environmental management plan has been completed and implemented for the site, covering shelter and other basic needs-related assistance (i.e., based on a settlements approach).

²¹ Although some NEAT+ materials indicate that livelihoods are include in the Kobo-based questionnaire, this was not the case with the French version downloaded from the NEATPlus web site.

- ✓ Packaging for shelter or NFIs has been minimized and packaging which has not found an immediate use is recovered and reused, repurposed or recycled.
- ✓ For shelter assistance:
 - ✓ A score card screening has taken place for shelter options to minimize environmental impacts.
 - ✓ Extraction of local natural resources for shelter construction or repairs has been minimized.
- ✓ For NFIs
 - ✓ A score card screening has taken place for shelter options to minimize environmental impacts.
- ✓ Environmental impacts of the site are being monitored by local authorities, site residents and neighboring residents through an environmental management committee.

Significant negative environmental impacts can arise from livelihoods activities. An additional action to consider in meeting the indicators is to monitor and address livelihoods which have a have negative environmental impacts. This may be considered as a cross-cutting action in support of the site environmental management plan and not just for the shelter partners.

Annex A – Training Materials

{Available from Cameroon Shelter Cluster}

Annex B – Action Plan Tables

GROUPE 1

ROUGE (3) LE TAUX DE DEFORESTATION PEUVENT DEPASSER LES CAPACITES DE REGENERATION (LA DEFORESTATION PEUT CONSTITUER UN RISQUE.)

QUESTIONNAIRE : ROUGE (3)

NO	POURQUOI	QU'EST-CE QUI DEVRAIT ETRE FAIT	QUI DEVRAIT LE FAIRE	QUAND FAUDRAIT IL LE FAIRE
1	La dégradation des sols	Sensibilisation et éducation	Etats	Avant
2	Inondation	Reboisement	Acteurs humanitaires,	Après
3	Vents-violents	Former les habitants site sur l'exploitations des ressources et les moyens alternatives	La communautés (hôte/IDPS)	Pendant

Rouge 2

Questionnaires : capacités de gestion de déchets (assainissement et transmission des maladies)

1	Mauvaise foi	Accentuer les sensibilisations	Etats	Pendants
	Insuffisance des matériaux d'assainissement	Octroyer les matériels d'assainissement	Acteurs	
	Insuffisance des latrines	Augmenter le nombre de de latrines	Donateurs	
	Insuffisance des points d'eaux	Augmenter le nombre de points d'eaux	Communautés concernées	
	Ignorance des communautés sur les maladies liées aux déchets	Distribution périodique des NFIS		

Rouge A

Questionnaires :

	Déforestation	Sensibilisation	Etats	Avant
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	Utilisation des produits chimiques dans l'agriculture	Mise en place d'un site de gestion des déchets	CTD	Pendant
	Système d'agriculture sur brûlis		Acteurs	Après
	Enfouissement des déchets non contrôlés			
	Temps de régénération très long pour certaines plantes			

Rouge 1 B

Questionnaires : les sources d'eau peuvent être vulnérables à une contamination (la qualité de l'eau peut être un problème)

	Contamination de l'eau	Contrôler et évaluer la qualité de l'eau	Etats	Avant
	Maladies hydriques		CTD	Pendant
			Acteurs	Après

Rouge 1C

Questionnaires : Pollution de l'air intérieur causée par une mauvaise

	Maladies	Augmenter les issues de ventilations dans les abris	Etat	
			Acteurs humanitaires	pendant
			Communautés concernées	

NEAT + WORKSHOP WASH

1. POURQUOI (le problème)	2. Qu'est ce qui devrait être fait ?	3. Qui devrait le faire ?	4. Quand faut-il le faire ?
- Mauvaise analyse hydrogéologique de la zone - Equipement d'approvisionnement en eau non appropriés - Mauvaise réalisation des travaux	-Faire une étude géologique du sol avant l'implémentation d'un point d'eau	-Etat, riverains, partenaires, principaux bénéficiaires - Etat, bailleurs de fonds, partenaires de mise en œuvre	-Avant la mise en œuvre - de préférence en saison sèche - faire le suivi continu des points d'eau (communauté, techniciens)
-Absence d'analyse d'eau - Absence de drainage des eaux	-Drainage - faire des analyses régulières de la qualité des eaux	-Partenaires de mise en œuvre - Etat - Partenaires avec la participation communautaire	- De manière continue
Conflits sociaux	-meilleure gestion des points d'eau - sensibilisations et formations	-Etat - partenaires - communauté bénéficiaire - communauté d'accueil	-De manière continue
A revoir pas de conflits transfrontaliers	-Drainages - canalisation des eaux de pluies - Evaluation approfondie de la zone		
Risques d'inondations	-Drainage	-Etat - partenaires - communauté	-Avant et pendant l'installation du site

PLAN D'ACTION DE LA SECURITE ALIMENTAIRE DU GROUPE III

No	PROBLEME	CE QUI DOIT ETRE FAIT	RESPONSABLES	PERIODE
01	Taux de détestation élevé (la coupe du bois est plus élevée que les activités de reboisement)	- Former des leaders communautaires sur l'importance de la préservation des espaces verts - Sensibiliser la	- Etat + acteurs humanitaires + nexus + OBC - Ambassadeurs environnementaux former	Des installations du site

		<p>communauté avec l'aide des personnes formées.</p> <ul style="list-style-type: none"> - Reboisement 	<ul style="list-style-type: none"> - La communautés 	
02	Source d'Energie et mauvaise ventilation	<ul style="list-style-type: none"> - Promouvoir les sources d'énergies écologiques (charbon écologique ; biomasses et foyer améliorées - Sensibiliser les ménages à cuisiner à l'extérieur des ménages 	<ul style="list-style-type: none"> - Etat + AH+OBC - ETAT+AH+OBC 	Des installations du site
03	Indisponibilité de l'eau en quantité suffisante pour satisfaire aux besoins de la populations	<ul style="list-style-type: none"> - Le choix du site doit dépendre des résultats des études hydrogéologiques. - Atteindre la nappe normale. - Multiplier les points d'eau en fonction des la taille de la population 	<ul style="list-style-type: none"> - ATAT + AH - ETAT + AH + POPULATION - ETAT + AH + POPULATION 	<ul style="list-style-type: none"> - Avant installation du site - Après installation du site pendant la foration - Après installation du site

20.5. Consolidated Environmental Issues and Actions Table

Cameroon Shelter and Settlements Assistance Consolidated Environmental Issues and Actions					
S = Strategic, NW= Northwest, SW = Southwest, FN = Far North					
S	NW	SW	FN	Issue	Actions
Strategic Issues					
X				Lesser part of foods needs met	<ul style="list-style-type: none"> Incorporate food needs assessments in shelter and settlement planning. Consider nutritional demands, levels of food aid and access and demands on natural resources to cover food and nutritional needs (e.g., harvesting wild foods, collecting firewood for sale to cover gaps on food needed). Provide small scale grants to support commercial activities and household gardens as a way to improve food security and strengthen
X				Expectation that needs will be met from humanitarian assistance	Establish a system under the accountability-to-affected-populations approach which communicates assistance plans and expectations to affected groups and collects feedback to identify possible concerns.
X				Lesser part of need for personal safety met	<ul style="list-style-type: none"> Design shelters and sites to reduce the potential for personal violence. Assess and address the risk of violence to men, women, boys, girls from the collection of natural resources or other activities.
X				Poor physical access	<ul style="list-style-type: none"> Include adequate access in the designs of shelter sites. Consider livelihoods activities to improve access when possible.
Health					
X				Lesser part of health care needs met.	<ul style="list-style-type: none"> Ensure a health facility is established when an IDP site is created. Review cooking facilities to limit indoor air pollution.
X				Human disease	
	X	X	X	Indoor air pollution, caused by poor ventilation and cooking/heating, can be a problem. ²²	
Water					
X				Lesser part of water needs met	<ul style="list-style-type: none"> Ensure that a potable water supply plan exists for IDP populations and sites that ensures the sustainable supply of water to
	X			The water sources may be vulnerable to contamination. Water quality may be an issue.	
		X	X	Water resources may have low regenerative capacity. Water scarcity can be a problem.	
Natural and Technological Hazards					
X				Floods	Develop a natural and technological hazards management plans for each IDP site or location where IDPs are present in significant numbers.
		X		This area may be at risk of flooding.	

²² Note that in the Ardjani IDP site, some cooking areas we open air and not in a closed space.

		X		Increased exposure to climate-related hazards (e.g. floods, storms, wildfires, droughts, sea level rises) has been identified as a concern.	
		X		Land and soil degradation and erosion has previously been identified as a potential concern.	
		X		This area has been identified as having potentially having unstable soils and being at risk of erosion.	
	X			The area may have poor slope stability. Landslides or mudslides may be a risk.	
	X	X		The area may have heightened exposure to climate-related risks and extreme weather events.	
	X	X		This area has been identified as at risk of natural hazards such as landslides, erosions, flooding and/or storm surges.	
	X	X		Increased exposure to climate-related hazards (e.g., floods, storms, wildfires, droughts, sea level rises) has been identified as a concern.	
	X			This area has been identified as potentially having periods of heavy rainfall and storm activity.	
	X	X		This area has been identified as potentially having periods of hot and humid weather.	
	X			This area has been identified as having potentially having unstable soils and being at risk of erosion.	
		X		This area may be at risk of industrial hazards and/or pollution	
	X	X		This area has been identified as being vulnerable to industrial- or conflict-related hazards or pollution.	
	X			There is a risk of air pollution from nearby activities.	
Deforestation					
			X	Deforestation rates can exceed regeneration capacities. Deforestation can be a risk.	
	X	X		Deforestation has been identified as a potential concern locally.	
		X		Rates of deforestation may exceed regeneration capabilities. Deforestation may be a risk.	
	X	X		Deforestation has been identified as a potential	<ul style="list-style-type: none"> • Assess demands on forest resources for shelter, livelihoods, cooking and other uses for IDP sites and locations where there is a significance presence of IDPs. • Implement a forest resource management plan to avoid or minimize to the greatest extent possible negative impacts on forest resources. • Where negative impacts do occur, implement remediation activities.

				issue. Energy usage and deforestation are closely related due to the use of wood and charcoal. Deforestation degrades local ecosystems, undermining community resilience and livelihood opportunities.	
	X			Deforestation has been identified as a concern in this area. Routes which enable access to forest resources can lead to increased rates of land clearing, harvesting and deforestation.	
Natural Resource Extraction					
			X	There may be high and/or unsustainable rates of resource extraction from the local environment.	
			X	The environment is based on fragile ecosystems. Further assessment is needed to determine if biodiversity loss is accelerating.	
	X		X	Natural resources can be scarce and in high demand. This can lead to social conflicts.	
	X	X		Natural resource availability/accessibility may be affected by changing climatic conditions.	
	X			There may be high and/or unsustainable rates of extraction of resources from the local environment.	
		X		Natural resources may be scarce and in high demand. This can lead to social conflict.	<ul style="list-style-type: none"> • Assess demands on natural resources for shelter, livelihoods, cooking and other uses for IDP sites and locations where there is a significance presence of IDPs. • Implement a natural resources management plan to avoid or minimize to the greatest extent possible negative impacts on natural resources. • Where negative impacts do occur, implement remediation activities. <p>Actions to address natural resource and forest resources can be combined.</p>
		X		There may be high and/or unsustainable rates of extraction of resources from the local environment.	
	X	X		The environment has high biodiversity value. Vulnerable and/or rare flora and fauna may be at risk.	
	X	X		Erosion, deforestation or land degradation has been identified as a potential concern in this area. Clearing and excavation activities can exacerbate the effects of these environmental issues.	
	X			Land and soil degradation and erosion has previously been identified as a potential concern.	
	X	X		This area has been identified as being close to fragile/niche ecosystems, high value ecosystems or protected/cultural areas.	
	X	X		Fragile/niche/high-value ecosystems or	

				protected/cultural areas have been identified in this area. Construction of access routes can bisect ecosystems, lead to increased rates of resource extraction or cause environmental degradation.	
		X		The community is close to an international border. Transboundary resource management and/or pollution may be a concern.	
Wastewater Management					
	X	X		There is low capacity to manage wastewater. Environmental sanitation and disease transmission may be an issue.	Implement a waste water management plan.
	X	X		There is low capacity to manage sewerage and fecal sludge. Environmental sanitation and disease transmission may be an issue.	
	X	X		Wastewater management has been identified as a concern in this area.	
Solid Waste Management					
	X	X		Solid waste management has been identified as a potential concern in this area. There may not be adequate public services or infrastructure to manage construction waste.	Implement a solid waste management plan, including options for reuse, repurposing and recycling and, for organize waste, composting.
	X	X		Solid waste has been identified as a potential concern in this area.	
	X	X		Disaster waste has previously been identified as a potential issue.	
	X	X		There is low capacity to manage solid waste. Environmental sanitation and disease transmission may be an issue	
		X		Management of waste, including that generated by the crisis, may be an issue. Crisis waste can pose public health risks, and impede relief or recovery activities.	
Other Issues					
	X	X		There is a high concentration and/or number of people. The potential environmental impact is greater.	Where possible, decongest IDP sites.

	X			The community may be close to a protected/conservation area. There may be legal/social implications.	Establish agreements with government authorities and neighboring communities on access to protected or conservation locations.
	X			There are areas of high cultural significance. This can threaten social cohesion.	

20.6. Site Selection Checklist

The following site selection text is adapted from **Strategic Site: Selection and Development**, Green Recovery and Reconstruction: Training Toolkit for Humanitarian Aid, WWF US and the American Red Cross (<https://envirodm.org/green-recovery/module-4/>).

Basic Principles

Recognize the context

Site selection and development should consider the broader social and physical setting of the proposed intervention. Site selection/development should be avoided where social conflict may arise between old and new residents, or where there will be conflicting or, eventually, excessive demands on natural resources.

Treat ecosystems as interdependent and interconnected

Post-disaster shelter site development does not occur independently of the natural environment. The ecosystems surrounding a prospective site may serve to mitigate hazard impacts (e.g., forested slopes reducing flooding) and provide livelihood resources and public amenities.

Promote existing landscapes

The site design and construction process should start with landscape mapping³ prior to site clearance. The resulting data should be used to the extent possible to integrate site plans into the natural landscape rather than to re-engineer the natural landscape to fit the site and to maintain as much of the natural vegetation and habitats as possible.

Include environmental restoration as part of site design

For a variety of reasons, land with little economic or environmental value is often seen as the first option for post-disaster shelter reconstruction: Good land tends to go to the highest bidder, leaving the poorer, more vulnerable residents with the more hazard-prone sites. Proactive site development can re-house disaster survivors while restoring the environment of a degraded location.

Restore sites after construction

Whether from the increase in the number of people in a location or from the construction efforts associated with the building of houses, roads, and other infrastructure, resettlement can have profound, negative impacts on the environment. All site-related interventions should incorporate components to restore disturbed environments to pre-project conditions where possible. These efforts should include areas from which natural resources have been extracted (e.g., borrow pits, logging sites) and the clearing and restoration of construction sites (e.g., restoring cement mixing areas, materials storage areas, vehicle maintenance yards).

Site Selection and Design Considerations

Capacity

- The number of people at a new site will not result in resource requirements that unsustainably exploit locally available natural resources.
- Density
- The density of habitation of the new site will not be greater than it was where the inhabitants lived before the disaster.
- The density of habitation of the site meets local regulations or international best practice.

Climate

- The site plan incorporates measures to address current and expected climatic conditions.
- The potential for negative changes to local climate, such as changes in rainfall or frequency of severe storms, has been considered in the site plan.

Slope

- The slope of the land on the site does not exceed 5%.

Cultural significance

- The cultural, historical, political, and social significance of locations at or near the proposed site have been considered as part of the site selection and plan development process.

Vegetation

- The retention of vegetation has been maximized in the site plan.
- Indigenous vegetation with economic value [such as fruit trees], is maintained or reintroduced at the site.
- The planting of nonnative plants has been avoided or minimized.

Hazards

- A hazards assessment for the site has been conducted and mitigation plans have been developed.
- The hazard assessment covers both natural and technological hazards.
- Mitigation plans incorporate structural (e.g., flood walls), nonstructural (e.g., warning systems), and ecological (e.g., maintenance of natural floodways) measures.

Construction methods and materials

- Construction methods minimize negative environmental impacts.
- Building designs reduce energy requirements for heating or cooling.
- Construction methods rely on locally available skills and competencies, and take into account the need to introduce new methods to reduce disaster risk or increase sustainability.
- Methods to reduce disaster impact are incorporated into site and building design.
- The use of locally available materials for construction does not place unsustainable demands on the local supplies of these materials.

Drainage

- The drainage plan is based on projected maximum daily precipitation as well as consideration of future climate impacts.
- Raised areas that can provide safety from possible floods have been established for humans, their possessions, and domestic animals.
- The permeability (i.e., ability of the soil to absorb water) of the site is maximized to reduce runoff.
- Unpaved areas are established to reduce flooding and to increase soil absorption of water.
- Warning systems are established for potential flood events.

Livelihoods

- The new site is close to the location of normal livelihood activities, and enables residents to pursue these activities without significant additional cost or difficulty when compared to the precrisis situation.
- Adequate space has been provided for livelihood activities at the household and community levels.
- Markets include sufficient water supplies and space and facilities for adequate sanitation and the handling of waste.
- Waste from markets and other commercial sites is recycled.
- Composting is used to add value to organic waste.
- There is adequate space between the location of economic activities and living and social areas, such as schools to decrease the impact of noise, air, and water pollution.
- All markets have adequate water supply, drainage, and waste-handling facilities.

Utilities (water, energy, waste)

- Sufficient space is available for water, energy, and solid and liquid waste utility services.
- The growth of demand for water, energy, and solid and liquid waste utility services is incorporated into site plans.
- Utility networks are easily accessible and, where appropriate, integrated into green spaces.
- Storage areas for wood, coal, or other similar energy sources are available and limit fire hazards and the impact of pollution.
- Rainwater harvesting is used to reduce demand on surface or groundwater resources.
- Grey water is recycled where possible.
- Low-volume toilets are used where appropriate.
- Flow-limiting faucets are used for communal water sources (e.g., stand pipes).
- Environmentally beneficial and appropriate technologies (e.g., solar panels, solar cookers) are used to limit demand from other sources of energy.
- Solar cookers/water heaters and/or fuel-efficient stoves are used to reduce the demand for carbon-based fuels for cooking and heating.
- The types of toilets used reduce sewage production (e.g., composting toilets) and groundwater pollution (e.g., use of closed-box septic tanks).
- Sewage collected through septic system cleaning (e.g., pumping of latrines) or through piped systems receives tertiary treatment.
- all solid organic matter collected through sewage systems is composted and reused to improve soil quality (e.g., in agriculture, to support tree planting, or to restore areas of natural vegetation).
- Solid waste is recycled and organic waste composted and used to improve soil quality.
- The area allocated to landfills meets the expected future waste outputs of the site and is designed to meet appropriate sanitation and pollution-control standards.
- The need for landfill space or waste incineration is reduced through the practice of recycling, including composting for commercial or communal uses.

- Local laws, international standards, and best practices are followed in the development of waste management systems.
- Pricing is used to reduce resource demand, taking into account basic rights to water and local expectations of entitlements to water and energy resources.

Site access

- The site is not physically isolated from road networks, towns, and markets.
- There are adequate roads and access within the site.
- Roads/paths within the site follow the contours of the site where possible, and steep roads/paths are avoided.
- Crossings of water courses are designed for maximum flows, and include pedestrian passages for use during periods of high water.
- Road surfaces limit dust and water erosion.
- Roads have adequate drainage to prevent flooding and surface erosion.
- Space is provided along roads for pedestrian traffic and for bicycles and motorbikes or carts, where these are a major means of transportation.
- Vegetation, indigenous if possible, is used to stabilize slopes and road shoulders.

Public space lighting

- Public lighting is designed to minimize energy and maintenance requirements.

Household-level agriculture

- Space is provided for kitchen gardens or small truck farms (as per local custom).
- Rainwater and/or grey water are used for household-level agriculture.
- Kitchen and other organic waste are recycled as compost or, in the case of food waste, as animal feed.
- Waste from household livestock is properly managed, including composting, and odors, as well as air and water pollution, are limited to the extent possible.

Wildlife

- The impact of the site on wildlife populations has been assessed.
- The potential for conflict between wildlife and livestock has been assessed and addressed.
- The site is not in a wildlife transit corridor.

Pest management

- Pest breeding sites have been limited in the location and design of the site.
- The need for chemical pest control has been limited through site design and location.

Wind

- Wind directions, including seasonal variations, have been plotted for the site.
- Roads and building direction take into account prevailing winds to provide good ventilation for the site.
- Doors and windows are positioned to limit the impact of winds considered unpleasant.
- Roads are designed to break the flow of the wind.
- In areas of potentially high winds (from thunderstorms, monsoon fronts, etc.) or heavy snow, roof slopes are 1:4 unless other structural measures are taken to limit the potential for wind or snow damage.
- The siting of the building should reflect consideration of the local wind conditions.

Sun

- The sun track across the site has been plotted.
- Buildings are oriented to limit or promote solar heating as needed.
- Building design incorporates the need for shade to offset roof heating.
- Options for solar water heaters have been investigated and heaters used where appropriate.

Rainfall

- Precipitation data is used in the design of roads, housing, and drainage.
- Rainwater catchment systems at the household or community level are based on precipitation data and the seasonality of rainfall.
- In areas of heavy rainfall, vegetation is used to slow runoff and is complemented by retention ponds.
- Precipitation data should be used in the design of roads, housing, and drainage. Rainwater catchment systems at the household or community level should be based on precipitation data and the seasonality of rainfall.
- Where rainfall can be heavy, vegetation should be used to slow runoff and be complemented by retention ponds (which can themselves be used for aquaculture.)

Topography

- The settlement is designed to match the existing topography; the location and orientation of roads, housing blocks, and community structures have been adjusted to fit the form of the land.
- Discussions on the disadvantage of a block-grid approach to site selection have taken place, and alternatives developed as financially and socially feasible.

Geology/soils

- The permeability, structure, and composition of the soil and geology of the site have been assessed.
- The site does not include rocky areas and is not located on rocky terrain.
- The site plan should consider the permeability of the soil and geology of a site, and, in particular, the following elements:
 - Liquid waste disposal
 - Revegetation
 - Drainage

- High ground water

Aquatic ecosystem

- The sustainable use of aquatic ecosystems has been incorporated into the site selection.
- The risk of pollution of aquatic ecosystems from the site has been limited.

Vegetation

- Vegetation should be retained to the greatest degree possible during site development. Where clearing is necessary, trees should be retained as a priority and trees with economic or food value should be accorded top priority.

Visual characteristics

- The visual characteristics – the look – of the site have been considered in the site selection and development plans.
- Landscaping has been provided to improve the visual characteristics of the site.

20.7. NFI Environmental Scorecard Non-Food Item Potential Environmental Impact Scorecard – Pilot Version

Introduction

The humanitarian shelter sector needs a way to quickly assess the anticipated environmental impacts of non-food items (NFI) as part of the decisioning whether to source NFIs locally or from external suppliers. The assessment process needs to consider the possible carbon footprint associated with the NFIs, the number persons who might benefit from the use of the item, the impacts of the use of the item and disposal of the item when no longer usable.

The table below provides a list of nine indicators of possible NFI environmental impacts, based on a review of a range of factors which could be considered. The nine factors are considered *good enough* to understand significant environment-related differences between different NFIs and provide input into decision making at the field level.

The NFI scorecard is not intended to be a highly complex assessment but to use information available to field personnel when considering different NFI designs and material and source and supply options. Where technical questions do arise, they should be referred to experts as part of a broader review of the possible negative environmental impacts of an NFI.

Using the Scorecard

The scorecard rating process is expected to be done by three to five persons who are familiar with the NFIs being assessed. Before the rating process (most likely done in a group setting) it may be necessary to share information on the NFI to ensure that each factor is clearly understood.

Using the scorecard involves 9 steps:

1. Review the factors and ensure they are clear to all participants.
2. Remove any factors which may not be appropriate for the NFIs being assessed, for instance, Factor 9 if no packaging is provided when distributing items.

3. Agree on the definitions of each of the scales in the scoring process for each factor. For instance, for Factor 5, the group doing the assessment needs to agree on what is short term, medium term and long term.
4. Identify a CO² eq. calculator for Factor 1.
5. Calculate the CO² eq. value for Factor 1.
6. Score the 9 factors, based on the agreed scales.
7. Use Excel to plot the scores using a Spider plot.
8. The points which are closest to “0” are factors indicating where the greatest negative environmental impacts can be expected. Note that “0 – no data”, presumes a significant negative impact until there is information available on which to base a different score.
9. Calculate the area of each of the seven triangles formed by lines in the Spider plot to produce a number indicating relative significance of each factor. The greater the area the less the expected impact.
10. Add all the area calculation numbers to establish an overall score for the NFI item.

Understanding and Using the Results

A lower number for any factor indicates a greater expected negative environmental impact due to that factor. A lower combined number for the areas in the Spider plot indicates a greater expected overall impact for that item when compared to higher scores for other items.

The scorecard process can be used to compare the same NFI composed of different materials or being procured locally or from suppliers located at a distance. This comparison can contribute to the procurement decision making process, e.g., whether one source of an NFI is expected to have less negative environmental impacts than another source.

The Spider plots can be used to identify which factors have a greater (lower score) or lesser potential negative environmental impacts (higher scores). This scoring identifies the factors related to a specific item which can be improved (raising the score) to reduce expected negative environmental impacts. For instance, this can be done by changing specifications to extend the usable life of an NFI or reduce packaging.

Additional factors can be added to the scorecard list as long as there is information available to assign the factor a number on a 0 to 3 scale. The steps in the 1, 2 and 3 rating scale should be clear, relevant to the factor under consideration and correspond to the information on the factor which is available to those doing the assessment.

FNI Score Card Factors and Scoring

#	Factors	Scoring
1	CO ² Eq # for transport from point of manufacture/purchase to distribution for all the NFI items being delivered as calculated using an openly available online CO ₂ calculator ²³ .	0 = no data; 1= high, 2 = medium 3 = low
2	Possibility of environmentally sound disposal.	0 =no data, 1 = not likely, 2 = possible, 3 = certain
3	Physical potential to recycle the NFI item.	0 =no data, 1 = not likely, 2 = possible, 3 = certain
5	Length of possible use of NFI item.	0 =no data, 1 = short, 2 = medium term,

²³ Possible calculators: https://geodis.com/geodis_carbon_calculator/form#, <https://www.ecotransit.org/en/emissioncalculator/>, <https://www.freightos.com/freight-resources/emissions-calculator/>. Note that separate ocean, air, rail, truck and other vehicle transport CO² eq numbers may be generated for a single item depending on the transport modes used.

		3 = long term
4	Options for sustainable energy for use of item. (If no energy is required, remove the item from the scoring.)	0 =no data, 1 = not likely, 2 = possible, 3 = certain
5	Number of individuals who could benefit from use for the individual item provided.	0 =no data, 1 = few, 2 = some, 3 = many
6	Demand on local natural resources to use a single NFI item (fuel, water for cleaning, etc.), except electrical energy, for using the item.	0 =no data, 1 = high, 2 = medium, 3 = low to none.
7	Volume of packaging, for each item.	0 =no data, 1 = large amount, 2 = some, 3 = limited to none
8	Volume of packaging, for external packaging of items (e.g., a carton of the items).	0 =no data, 1 = large amount, 2 = some, 3 = limited to none
9	Packaging for distribution (what type of packaging is used when the items are given to the users).	0 = no data, 1 = plastic bag or container, 2 = paper or cardboard container, 3 = paper or cardboard container composed of recycled materials, or no packaging



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