

Guidance Note

What is the NEAT +?

Purpose and Interest

Understanding environmental risk, especially in the wake of a disaster, is key to ensuring the effectiveness and sustainability of humanitarian action. The *Coordination of Assessments for Environment in Humanitarian Action* ([Joint Initiative](#)) developed the Nexus Environmental Assessment Tool (the NEAT+) to help humanitarian actors quickly identify environmental risks and take steps to address them.

The NEAT+ is a project-level environmental assessment/screening tool designed for humanitarian practitioners. The tool assesses the current sensitivity of the crisis-affected environment, highlighting and categorising any underlying risks and vulnerabilities to the environment and affected communities. It also identifies potential activity-related environmental risks posed by humanitarian relief and recovery projects. The NEAT+ is designed to be used in the early stages of a humanitarian response, after lifesaving needs have been met, but before longer term relief or recovery interventions are planned. The results will inform project design.

A comprehensive library of risk statements, informational prompts and mitigation tips associated with environmental risks in humanitarian programming have been developed as part of the NEAT+ tool. The methodology used by the NEAT+ to assess environmental risk and potential environmental impacts has been endorsed by numerous technical experts and has been tested and validated through pilots.

In order to carry out a NEAT+ assessment, humanitarian workers need to input data in the NEAT+, either via Kobo Toolbox or directly into Excel. Data collection should ideally be done at the project site but can be completed remotely if necessary. The tool can be used in camp/settlement, and peri-urban or rural non- or informal-camp settings. The tool was not designed for accurately assessing environmental issues in urban settings (i.e. persons of concern integrated into urban host communities).

The NEAT+ relies on two commonly used software applications – Microsoft Excel and KoBo toolbox.

Guidance Note 02: How to use the NEAT+ offline with Excel only and **Guidance Note 03: How to use the NEAT+ with KoBo Toolbox** give a thorough step-by-step explanation on how to use the NEAT+.

The NEAT+ has been designed as an open-source resource which can be adapted by individual organizations for their particular needs. The back-end of the tool is accessible allowing those confident in the software to review and modify the logic and process that determine the output. For further explanation on how to adapt the NEAT+ to your own organisational needs, please refer to **Guidance Note 05: How to adapt the NEAT + for specific organizational needs**.

Disclaimer: The NEAT+ is not intended to assess the environmental impacts of a whole disaster or crisis, only the area(s) being assessed. It is a first-step screening process that identifies key environmental issues for follow up. For full information on the NEAT+ process and how it links to environmental management, systems or procedures please refer to the NEAT+ reference document which will soon be made available on the [NEAT+ homepage](#).

Tool Outline

The NEAT+ consists of various modules that can be selected based on the intended programming and needs of the user. The modules are:

- Environmental Sensitivity Module**

This module identifies potential environmental issues of concern of the project area through providing a snapshot/baseline of the current state of the environment/surroundings. It does not assess environmental change associated with a crisis. The environmental sensitivity module is compulsory and needs to be completed first.

In this module, the user is required to answer a set of simple questions that should take no longer than 30 minutes. Environmental expertise is not required. The inputted data is processed through an automated analysis that seeks to replicate the thought process of an experienced environmental practitioner. The final output is an automatically generated report that highlights potential environmental issues of concern and categorises them into high, medium and low importance with a traffic light system that aids prioritisation for mitigation, as seen in Figure 1.

| Environmental Sensitivity Analysis | | |
|---|---|---|
| Assessment of: Mantapala Analysis Assessment completed by: Bruce Kasoka Organisation completing assessment: UNHCR | | Date of Assessment: 27-Nov-18 Location: Mantapala Refugee Settlement Country: Zambia |
| Issues of High Concern | Issues of Medium Concern | Issues of Low Concern |
| There is a high concentration and/or number of people. The potential environmental impact is greater. | The impacted population may have a poor understanding of local environmental issues. This makes it difficult to manage the environment. | The community may have low self-sufficiency. There may be a greater demand (and impact) on the local environment. |
| The environment has a low regenerative capacity. The effects of deforestation are more significant. | The environment has fragile ecosystems. Loss of biodiversity may be an issue. | There are areas of high cultural significance. This can threaten social cohesion. |
| Indoor air pollution, caused by poor ventilation and cooking/heating, may be an issue. | The environment has high biodiversity value. Vulnerable and/or rare flora and fauna may be at risk. | The community may have a high dependency on the natural environment. This can threaten livelihoods and social cohesion. |
| There is low capacity to manage wastewater. Environmental sanitation and disease transmission may be an issue. | The community may be close to a protected/conservation area. There may be legal/social implications. | The environment has a low regenerative capacity. The effects of land and soil degradation are more significant. |
| This area may be at risk of soil erosion from water. | There is a risk of air pollution from nearby activities. | The water resources may have a low regenerative capacity. Water scarcity may be an issue. |
| Natural resource availability/availability may be affected by changing climatic conditions. | The water sources may be vulnerable to contamination. Water quality may be an issue. | There is low capacity to manage overgrazing and forest degradation. Environmental sanitation may be an issue. |
| | There is low capacity to manage solid waste. Environmental sanitation and disease transmission may be an issue. | Disaster waste may be an issue. Disaster waste can pose public health risks, and impede relief or recovery activities. |
| | The area may have poor slope stability. Landslides or mudslides may be a risk. | This area may be at risk of flooding. |
| | Natural resources may be scarce and in high demand. This can lead to social conflict. | The area may have heightened exposure to climate-related risks and extreme weather events. |
| | There may be high and/or unsustainable rates of extraction of resources from the local environment. | |

Figure 1: Example of sensitivity report

Mitigation tips associated with each issue of concern are also provided in the report, as seen in Figure 2.

| Affected Community | |
|--|---|
| Communities interact with the environment on multiple levels, with these interactions having environmental, as well as social and economic implications. Environmental impacts therefore also have socio-economic consequences. Vulnerable segments of society and the community are often disproportionately dependent and affected by the environment, and have unequal capacity for adaptation. | |
| The following has been identified as a potential concern: | |
| Large concentration and/or number of people. | |
| Additional Information | Mitigation Tips |
| A large and/or concentrated population can exceed the capacity of the local environment to absorb impact coming from the populations. This can lead to unsustainable pressure and potential permanent or long-term degradation of the surrounding environment and overconsumption of natural resources. Social issues are also created when there are high populations competing over limited resources. | <ul style="list-style-type: none"> Explore alternative settlements and/or consider relocation of part of the camp/settlement occupants to another location Plan for sustainable use of resources before setting up any temporary settlement, especially regarding shelter construction materials, water management and waste disposal Plan for introduction and dissemination of fuel-efficient stoves As soon as practical, establish resource user groups to promote sustainable and fair use of available natural resources Plan for community green spaces such as tree covered areas or gardens that provide shade and a sense of community |

Figure 2: Example of mitigation tips

• Activity Modules

These modules are optional and assess potential environmental impacts associated with project activities. There are three modules – shelter, water, sanitation and hygiene (WASH) and food security / livelihoods. In these modules, users are asked to select what type of activities are planned. Based on these responses, specific sub-modules of questions are displayed. The tool assesses the potential environmental impacts of the planned activities. These impacts are then overlaid against the environmental sensitivity results to evaluate residual environmental risk. The results are populated in a report, as seen in 3.

The NEAT+
Shelter/NFI Module Summary

Shelter (Siting)

| Sensitivity Concern | Environmental Sensitivity | Potential Activity Impact | Potential Environmental Risk |
|---|---------------------------|---------------------------|------------------------------|
| Key sensitivity concerns | | | |
| The environment has high biodiversity value. Vulnerable and/or rare flora and fauna may be at risk. | High | Medium | Medium |
| Other sensitivity concerns | | | |
| The environment has a low regenerative capacity. The effects of deforestation are more significant. | High | High | High |
| The environment has a low regenerative capacity. The effects of land and soil degradation are more significant. | High | Low | Medium |
| The water sources may be vulnerable to contamination. Water quality may be an issue. | Medium | Medium | Medium |

Shelter (Design)

| Sensitivity Concern | Environmental Sensitivity | Potential Activity Impact | Potential Environmental Risk |
|---|---------------------------|---------------------------|------------------------------|
| Key sensitivity concerns | | | |
| There may be high and/or unsustainable rates of extraction of resources from the local environment. | Low | High | Medium |
| Other sensitivity concerns | | | |
| The environment has a low regenerative capacity. The effects of deforestation are more significant. | High | High | High |
| Indoor air pollution, caused by poor ventilation and cooking/heating, may be an issue. | Low | High | Medium |
| There is a risk of air pollution from nearby activities. | Low | High | Medium |
| There is low capacity to manage solid waste. Environmental sanitation and disease transmission may be an issue. | Low | High | Medium |

Shelter (Materials)

| Sensitivity Concern | Environmental Sensitivity | Potential Activity Impact | Potential Environmental Risk |
|--|---------------------------|---------------------------|------------------------------|
| Key sensitivity concerns | | | |
| The environment has fragile ecosystems. Loss of biodiversity may be an issue. | High | Sub-module not set | Sub-module not |
| The environment has a low regenerative capacity. The effects of deforestation are more significant. | High | Sub-module not set | Sub-module not |
| Other sensitivity concerns | | | |
| Disaster waste may be an issue. Disaster waste can pose public health risks, and impede relief or recovery activities. | High | Sub-module not set | Sub-module not |
| There may be high and/or unsustainable rates of extraction of resources from the local environment. | Low | Sub-module not set | Sub-module not |

Figure 3: Example of activity report

Mitigation tips associated with each activity module are also provided in the report, per submodule, as seen in Figure 4.

Shelter (Design)

| Environmental Concern | Environmental Sensitivity | Potential Activity Impact | Potential Environmental Risk |
|--|---------------------------|---------------------------|------------------------------|
| Other environmental concerns | | | |
| Rates of deforestation may exceed regeneration capabilities. Deforestation may be a risk. | Medium | Medium | Medium |
| Indoor air pollution, caused by poor ventilation and cooking/heating, may be an issue. | High | High | High |
| There is a risk of air pollution from nearby activities. | High | Medium | Medium |
| There is low capacity to manage solid waste. Environmental sanitation and disease transmission may be an issue. | High | Medium | Medium |
| Mitigation Tips | | | |
| <ul style="list-style-type: none"> Rectangular shelters can be orientated with the long side facing the north-south axis to minimize direct sunlight exposure. The west-facing side has the most intense sunlight and large windows here should be avoided. Trees, foliage, roofs and awnings can be used to provide passive shading. Shelter design should improve inhabitant comfort and decrease energy consumption required for heating or cooling. Rectangular shelters can be orientated with the long side facing the east-west axis to maximize direct sunlight exposure. The west-facing side has the most intense sunlight and large windows improve solar heat gains. Shelter design should improve inhabitant comfort and decrease energy consumption required for heating or cooling. Heavyweight materials provide high thermal capacity, keeping heat inside and reducing artificial heating needs. Material-insulated outer walls, roofs and floors provide additional protection from heat loss. Double pane windows also improve thermal performance. Shelter design should improve inhabitant comfort and decrease energy consumption required for heating or cooling. Raised floors and high ceilings improve ventilation of heat, and openings in the walls and roofs can be used to expel accumulated indoor heat. Doors/windows on opposite sides of rooms/shelters improve natural draft cooling. Shelter design should improve inhabitant comfort and decrease energy consumption required for heating or cooling. The shelter should be as air-tight as possible to minimize entry of cold air from outside, particularly around windows and doors. Heaters/stoves should have dedicated exhausts for ventilation to avoid concerns of indoor air pollution. Shelter design should improve inhabitant comfort and decrease energy consumption required for heating or cooling. Sufficient access to outdoor light reduces the need for artificial lighting, and thus reduces potential energy consumption and indoor air pollution. Windows should be openable, and can include awnings or shutters for protection against direct sunlight or for improved privacy. Consider the proximity of other structures or trees which may limit the availability of natural light. The shelter should be designed with local hazards in mind. Sometimes, multiple hazards may exist in an area. In the case of reconstruction following a natural disaster, the build-back-better principle should be observed. Engineering solutions can reduce vulnerability to future hazards, reducing the likelihood or need for future interventions. | | | |
| Additional Resources | | | |
| Quantifying Sustainability in the Aftermath of Natural Disasters (QSAND) - Shelter and Community Chapter | | | |
| QSAND is a self-assessment tool to promote sustainable approaches to relief, recovery and reconstruction after a natural disaster. It consists of various checklists and benchmarks for achieving environmental sustainability. This resource covers many different types of humanitarian activities. | | | |
| Additional Details/Comments | | | |

Figure 4: Example of mitigation tips related to shelter activities

The NEAT+ is innovative as it produces a customised report based off an automated analysis process - this process is outlined in 5. This backend process enables the generation of a customised report without the need for environmental expertise.

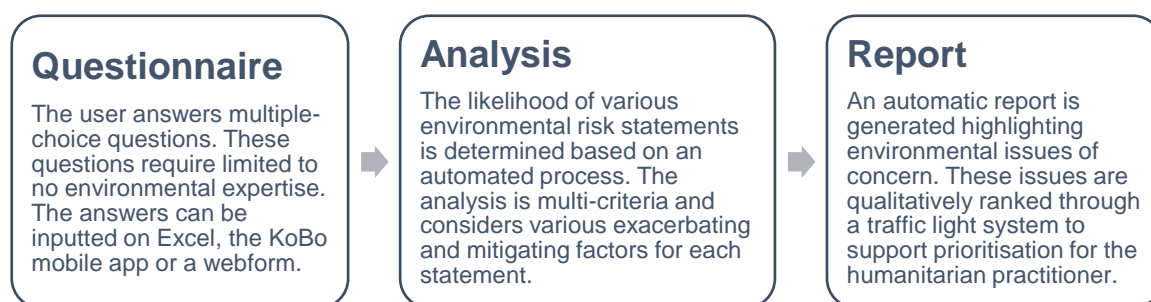


Figure 5: NEAT+ process for each module

The NEAT+ features several points of interaction with the user to increase environmental awareness. One of the advantages of NEAT+ is that it condenses several dense guidance resources into an interactive format to make the relevant environmental information more easily accessible. In addition to the report with the traffic light system, the NEAT+ integrates the following:

- In the sensitivity report, key environmental concerns are elaborated with **text explainers** that provide additional details on the potential causes and implications of each issue. Here, cross-cutting issues such as gender and protection are mainstreamed.
- Once the relevant activity sub-modules are selected, **baseline warnings** are triggered based on the assessed environmental sensitivity. These warnings raise potential environmental-related programmatic concerns associated with the project area.
- Every question in the activity sub-modules has an associated “tip” that provides additional information to be aware of. When the user selects a multi-choice response that may not reflect environmental best practice, these tips are triggered. The tips provide information on potential environmental concerns associated with the design of activity and signposts the user towards best practices.
- A **mitigation tips section** is automatically generated based on the outcomes of the environmental sensitivity and activity modules. Mitigation tips are provided to support project managers to reduce environmental damage by lessening the impact of humanitarian activities.
- A **resources** section containing further reading is also automatically generated based on the responses to the environmental sensitivity and activity modules.

The tool has been designed on Microsoft Excel to utilise Excel’s analytical functionality for the automated analysis. Data entry can be done directly using Excel. However, the user interface on Excel for inputting form data has limited functionality. As such, the KoBo Toolbox software has been used as an alternative form of data collection. KoBo is increasingly widely used in the humanitarian sector as a data collection tool and can be used as a webform on computer or on a phone or tablet. Data collected through KoBo is stored on a server, thus allowing any results or data to be accessed remotely. Using KoBo requires the setup of a project on the online KoBo Toolbox platform (<https://kobo.humanitarianresponse.info>) and the downloading and copying of data from the KoBo server onto the NEAT+ Excel file. For more information concerning KoBo, its functionalities and the security of data, please refer to the KoBo webpage.

The analysis process relies on a quantitative calculation based on weightings and scores applied to different responses. The individual weightings and scores have been assigned by the NEAT+ lead designer with inputs from technical experts. While individual weightings and scores have not been reviewed in detail, the output of the analysis, i.e. the traffic light ranking, has been validated by numerous reviewers and through rigorous testing. Reviewers were asked to test the tool using scenarios they were familiar with. The outputs of the automated results were then cross-checked against the expected results of the environmental experts, and weightings or scores were adjusted if necessary. The validity of the results has also been tested through field pilots.