



NORWEGIAN
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Strengthening Environmental Screening Capacity of Humanitarian Organizations

Environmental Screening Report

NEAT +

Nexus Environmental
Assessment Tool

Community Water Supply Project

Kalobeyei Refugee Settlement

Kakuma, Kenya

02-03 November 2022

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INTRODUCTION

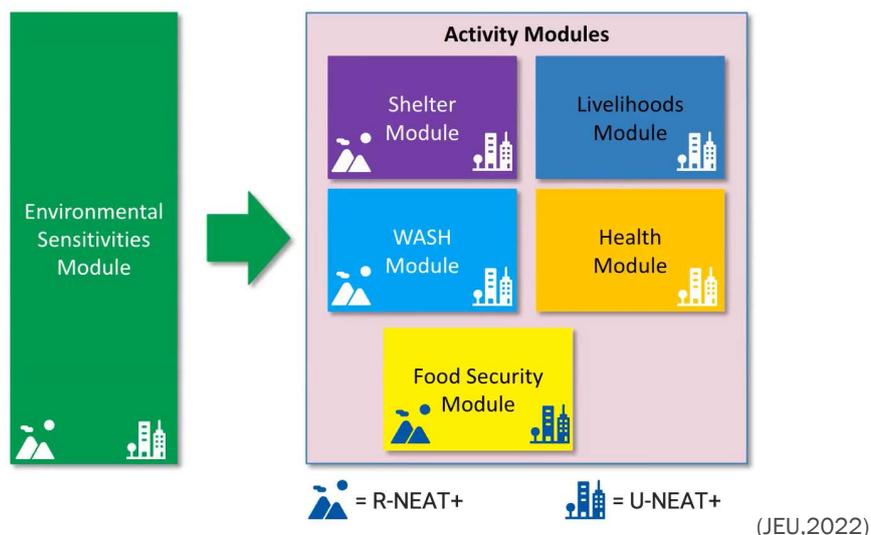
Humanitarian projects, although addressing protection needs and aiming for durable solutions for the crisis and conflict-affected communities, can result in adverse environmental externalities. These environmental externalities must be identified and addressed in the earliest stages of humanitarian response, which helps in protecting the environment and communities from any project-associated potential adverse impacts. Humanitarian organizations are increasingly working towards addressing environmental considerations in the program cycle; however, this practice is yet to be mainstreamed into project designs and implementations. The most practised exercise for mainstreaming environmental considerations into projects begins with an environmental screening. It evaluates projects' interventions against the sensitivities of the receiving environment to determine positive and negative environmental impacts. There are several environmental screening tools available that can be selected depending on the project's nature, scale, location, and organizations' implementation capacity. Environmental screening is usually a requirement by local environmental authorities and donors but can also be an internal organizational compliance requirement.

This environmental screening has been conducted by applying the NEAT+ environmental screening tool in Kalobeyi Refugee Settlement, Kakuma, from 02 to 03 November 2022 as part of **Error! Reference source not found.**the ECHO-funded project on "Strengthening the capacity of humanitarian actors to do environmental screenings".

NEAT+

The NEAT+ is an open-source, rapid and easy-to-use environmental screening tool¹ specifically designed for humanitarian contexts. A consortium of humanitarian organizations developed it and was officially launched in 2019. The tool generates summary reports providing a snapshot of baseline environmental conditions, potential environmental impacts categorized as LOW, MEDIUM, and HIGH, and mitigation measures. There are currently two versions of the NEAT+ available, the Excel-based Rural-NEAT+ and the web-based Urban-NEAT+. As shown in the figure **Error! Reference source not found.**, the NEAT+ consists of an Environment Sensitivity module and Activity Modules covering core humanitarian activities, which are Shelter and Settlement, WASH, Food Security, Livelihood, and Health. Considering the project location and activities, the rural NEAT+ is applied in this assessment.

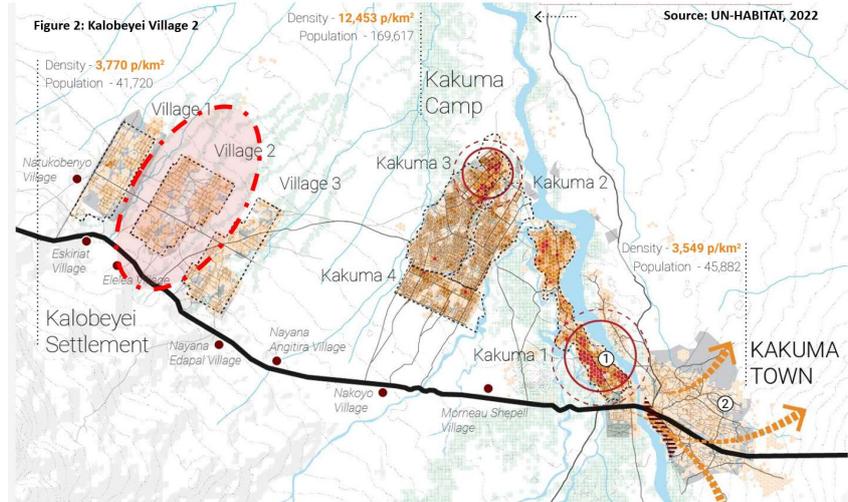
Figure 1: Technical Structure of the NEAT+



¹ <https://resources.eecentre.org/resources/neat/> or <https://neatplus.org/>

CONTEXT:

Kenya is the fifth largest refugee-hosting country in Africa. Kakuma is the capital town of Turkana County in the Northwestern region of Kenya and is host to around 196,666 refugees from 9 nationalities, with over 70% from South Sudan. The refugees are settled in Kakuma Refugee Camp and Kalobeyei Refugee Settlement. Kakuma Camp is divided into four, namely: Kakuma 1, 2, 3 and 4, while Kalobeyei Settlement is comprised of 3 villages: Village 1, 2 and 3 (UNHCR, 2023). Kalobeyei Refugee Settlement covers a land of 1500 hectares at 20 km from Kakuma town and inhabitants of about 40,000 refugees and 355 host communities' households spread across all three villages.

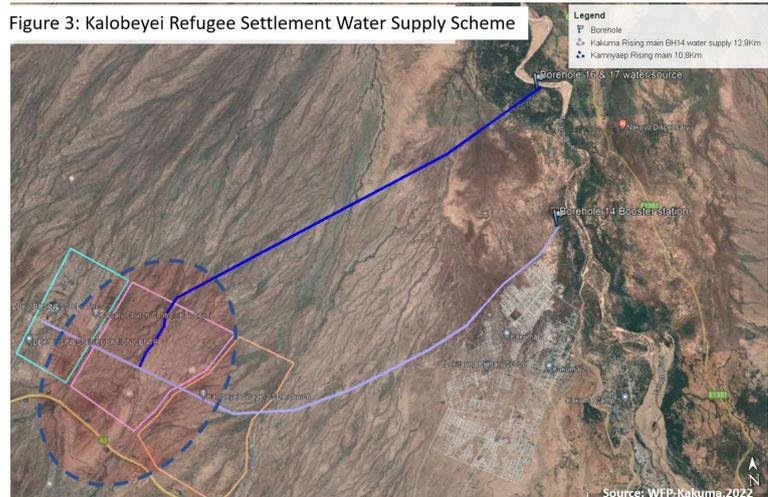


The refugee community is primarily aid-dependent, with limited employment and income-generation activities. Host communities and some refugees derive their livelihood from livestock-based activities. Communities that live along the major water courses engage in small-scale agriculture during wet seasons. Scarcity of natural resources often leads to conflict, but also comprising on quality, approximately 50% of the population is suffering from waterborne diseases due to lack of clean water (UNHCR).

Kalobeyei Refugee Settlement is an open plain with arid climatic conditions and temperatures ranging between 24 to 38 degrees Celsius. The land cover is mostly dry with Savana, sparse vegetation, and few seasonal rivers. It is a high water scarce area, and the main water source is deep boreholes. As part of the water harvesting initiatives, the Kang'ura water dam is built in village-2 of Kalobeyei Refugee Settlement, which can hold about 100 million litres of water. If filled, water in the dam can last the community up to eight months, while the water pan can hold sufficient water for six months.

PROJECT BACKGROUND:

Within the framework of the Kalobeyei Integrated Social-Economic Development Plan (KISED²), WFP partnered with UNHCR, and NRC is working on the Community Water Supply project. The community is presently provided with water through two existing boreholes, namely BH 14 and BH 15 powered by diesel generators and solar panels; however, due to higher demand and to ensure reliable water supply, there is a proposal for a third booster borehole BH16 and BH 17 as illustrated in the figure.



WFP, in partnership with UNHCR and NRC, have solarized the existing two high-yielding shallow boreholes with an average depth of 30 meters in Kamnyaep area along the Tarach river basin. The source of water is 10.8 km away from the Kalobeyei Refugee Settlement, and it is characterised as high yielding, shallow

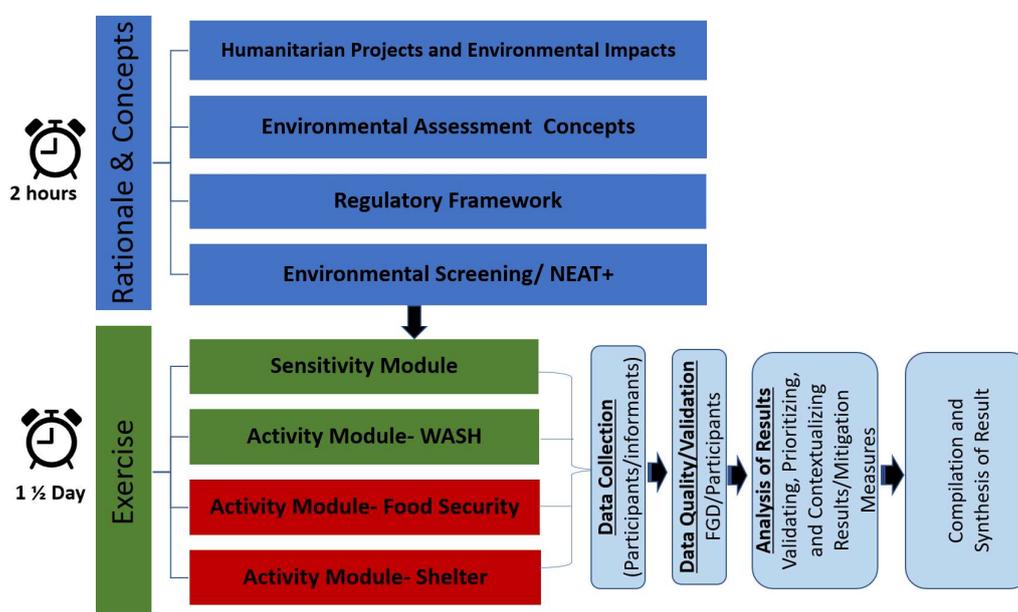
² Co-led by the County Government and UNHCR, Kalobeyei Integrated Socio-Economic Development Programme (KISED²) is a 15-year comprehensive multi-sectoral and multi-stakeholder initiative. It follows a three-phase approach with a preparatory stage in 2016-2017, followed by Phase I (2018-2022), Phase II (2023-2027) and Phase III (2028-2030).

aquifer with relatively good quality of water for human consumption as per the WHO standards. The water is first transferred from the source to the elevated storage tanks and then distributed within the three villages through the gravity flow primarily for household consumption. The water is also supplied for small-scale horticulture and kitchen gardening as part of food and nutritional security at the household level during the dry period.

METHODOLOGY

This NEAT+-based environmental screening is conducted as part of the two-day capacity-building training held in Kakuma from 02-03 November, 2022, for humanitarian organizations operating in Kakuma, Kenya. As shown in the figure below, a dual-purpose approach is used where participants are exposed to the concepts, environmental regulatory framework, and process of conducting an environmental screening, but also taking participants through the experience of conducting a NEAT+-based screening for an actual project. This included covering the sensitivity module and activity module on WASH, followed by a field visit for a focused-group-discussion with community representatives but also a transect walk along the project site, and then reflecting on the data, analysing tool-generated results, including impact and mitigation measures, and finally compiling and synthesising the results.

Figure 42: Overall Approach Employed



Considering the location of the Kalobeyei refugee camp, the Rural version of NEAT+ is used, which contain modules on Shelter, WASH, and Food Security and is particularly appropriate in a camp setting.

Consistent with the scope of the project³, the following WASH sub-activity modules are selected

- Design of water collection system
- Design of water distribution network
- Operation and maintenance of the water distribution network
- Design of the drainage network
- Water infrastructure construction
- Water Trucking

³ For additional information on the project reach out to Joan Mwiti (joan.mwiti@nrc.no) and Ezekiel Muthangya (ezekiel.muthangya@wfp.org)

ANALYSIS OF THE RESULTS

ANALYSIS OF SENSITIVITY SUMMARY

The Environmental Sensitivity summary helps understand the environmental baseline of the project location. It informs the project team about site-specific potential environmental risks and vulnerabilities resulting from the interactions between communities and the carrying capacity of natural system against the proposed project activities.

The sensitivity analysis report below highlights the baseline environmental issues within Village 2 of Kalobeyei's refugee camp, categorized as Low, Medium, and High concerns. These issues are structured around five broad categories, namely i) Affected communities, ii) Impacts on biodiversity, iii) Pressure on natural resources, iv) Pollution and environmental degradation, and v) Environmental hazard.

Environmental Sensitivity Analysis Report		
Issues of High Concern	Issues of Medium Concern	Issues of Lower Concern
There is a high concentration and/or several people. The potential environmental impact is greater.	The environment has a low regenerative capacity. The effects of land and soil degradation are more significant.	The community may have low self-sufficiency. There may be a greater demand (and impact) on the local environment.
The environment has fragile ecosystems. Further assessment is required to determine if loss of biodiversity is accelerating.	Waste management, including that generated by the crisis, may be an issue. Crisis waste can pose public health risks, and impede relief or recovery activities.	There is a risk of air pollution from nearby activities.
Rates of deforestation may exceed regeneration capabilities. Deforestation may be a risk.		The water sources may be vulnerable to contamination. Water quality may be an issue.
Indoor air pollution may be an issue caused by poor ventilation and cooking/heating.		Natural resource availability/accessibility may be affected by changing climatic conditions.
The water resources may have a low regenerative capacity. Water scarcity may be an issue.		
There is low capacity to manage solid waste. Environmental sanitation and disease transmission may be an issue.		
There is low capacity to manage wastewater. Environmental sanitation and disease transmission may be an issue.		
There is low capacity to manage sewerage and faecal sludge. Environmental sanitation and disease transmission may be an issue.		
This area may be at risk of soil erosion from wind.		
This area may be at risk of flooding.		
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.		

The main issues highlighted in the sensitivity report are **pressure on natural resources** due to the **high concentration of people** in the Kalobeyei camp. **Biodiversity degradation** is happening at a **higher rate** primarily due to **deforestation** at an unsustainable rate. Extensive use of **charcoal and wood** for **cooking**, particularly for indoor cooking, causes **air pollution**, ultimately leading to **health issues**. Kalobeyei's refugee camp is located in an arid climatic region, receiving less than 300mm of annual rainfall, and people are faced with **extreme water-**

stressed conditions. Prolonged droughts and low vegetation cover often lead to **soil erosion** from wind, directly affecting **soil fertility** and people's livelihood. **Poor sewage, wastewater, and solid waste management** capacity in Kalobeyei is not only directly linked to disease transmission but can also contaminate other natural resources, such as water. The result summary also indicates that extreme climatic events such as **flooding and droughts** are more frequent in Kalobeyei refugee camp.

WASH SUMMARY

The WASH summary informs the project on site-specific potential environmental risks, which need to be considered during project selection, design, implementation, and operation. The Kalobeyei refugee camp site-specific environmental risks identified by the tool are listed in the table below.

- The project site has been identified as having enhanced exposure to **climate-related risks** such as **soil erosion, drought, and flooding**. Water supply-related infrastructure should be appropriately designed and sited in a location with minimum exposure to these risks.
- **Water scarcity** due to low regenerative capacity of the natural system and the imbalance in the rate of extraction and recharge has been identified as a high-risk issue in Kalobeyei's refugee camp. Water balance should be assessed to avoid water depletion, water losses should be avoided, and alternative water sources for various uses could be explored. Scarce water resources are in high demand by refugees and host communities and can potentially lead to social tensions.
- **Water contamination** due to poor waste management, infrastructure, and livestock activities has been identified as a high-risk issue. Water quality should be checked and regularly monitored, and water sources/infrastructure should be appropriately protected.
- **Aquifer contamination** due to porous ground and surface wastewater leakages has been identified as a potential medium-risk issue. Adequate distance should be maintained between the water source and sanitation facilities to avoid contamination of groundwater resources
- **Parse vegetation land cover** has been identified as a potential medium-risk issue in the Kalobeyei refugee camp, which can lead to soil erosion and flooding. Unavailability of proper drainage management and overgrazing of livestock combined with dry climatic conditions are identified as the main causes.
- **Solid waste management** has been identified as an issue of medium risk. The WASH and hygiene kits distribution may lead to waste generation without a water management strategy. This could lead to disease transmission. Where possible, minimize generating additional waste.
- **Wastewater management** has been identified as a medium-risk issue. Environmental sanitation and waterborne diseases may be an issue. This could lead to disease transmission. Drainage management and, where possible, minimizing generating additional waste during the implementation and operation phases of the project.
- **Deforestation** has been identified as a high-risk issue in Kalobeyei's refugee camp. Interventions should avoid promoting the burning of wood, such as water disinfection by boiling.

POTENTIAL PROJECT IMPACTS AND MITIGATION MEASURES

NEAT+ generates several mitigation tips against potential project impacts. However, this needs further analysis with the project team to select only the most significant impacts that directly occur because of project activities. The most significant anticipated impact of the Kalobeyei water supply project could be on water quality and quantity. The project can add more pressure on the limited water resources and contaminate water if proper mitigation measures are not considered. It is important to consider mitigation measures that are within the project's scope and are implementable within the project period. Mitigation measures will not always mean doing new things or adding additional activities but doing things differently in a more environment-friendly manner. Options need to be explored if some mitigation measures could be done through other projects within the organization or in collaboration with other partner organizations who are active in the Kalobeyei refugee settlement. The table below lists some mitigation measures against the most relevant anticipated impact extracted from the WASH result summary.

Potential Project Impacts	Mitigation Measures
Water Scarcity	<ul style="list-style-type: none"> ▪ Include a hydrogeological survey in bore well projects, avoid unconfined aquifers ▪ Keep an appropriate distance (minimum 15-20 meters) between septic tanks and water sources. ▪ Reduce water losses, and maximize water use efficiency (e.g. self-closing water points, regular pipe maintenance) ▪ Establish a rainwater harvesting system and promote kitchen gardening ▪ Consider water ponds for groundwater recharge ▪ Ensure that water abstraction doesn't exceed its replenishment. Conduct a water balance (supply/demand) study ▪ Ensure an exit strategy from water trucking ▪ Collect and safely dispose of oil residuals, including waste oil, lubricants, and used filters. ▪ Build capacity for water conservation practices
Water Contamination	<ul style="list-style-type: none"> ▪ Safeguard (fencing) drinking water sources against contamination ▪ Properly store oil, chemicals, and liquids, and prevent any leakages into soil or water ▪ Machinery and chemical storage should be monitored for any leakages or excessive emissions ▪ Maintain distance and keep the water source at a higher elevation from the contamination source ▪ Ensure reduced stagnation of water through proper drainage systems
Loss of Vegetation	<ul style="list-style-type: none"> ▪ limit vegetation clearance to the project site only ▪ Plant indigenous trees as a revegetation measure ▪ Encourage wastewater reuse in watering vegetable gardens, trees, etc ▪ If possible, promote agro-forestry practices will be intensively promoted through other projects
Solid Waste Management	<ul style="list-style-type: none"> ▪ Separate organic and inorganic waste and designate a waste dump site at an appropriate distance. ▪ Minimize the amount of packaging, substitute for paper or cardboard (biodegradable), and promote the principle of reducing, recycling, and reusing in all operations. ▪ Set up waste livelihoods projects ▪ If possible, Promote the "three Rs" of waste management in communities: Reduce, Re-use and Recycle
Wastewater management	<ul style="list-style-type: none"> ▪ Promote the use of wastewater for kitchen gardening ▪ Consider a proper drainage system ▪ Improve sanitation infrastructure ▪ Consider necessary arrangements for the safe disposal of fecal sludge and its reuse as manure or biogas. ▪ Support community awareness programs
Deforestation	<ul style="list-style-type: none"> ▪ Discourage any invasive species of trees ▪ If possible, Promote alternative clean sources of energy for household use ▪ Promote tree plantation next to the water points

RECOMMENDATIONS AND NEXT STEPS

Some key learning from the environmental screening exercise and recommendations are listed below.

- This environmental screening report is useful for organizations operating in Kalobeyei's refugee camp. It assesses the baseline environmental conditions of Village 2 in Kalobeyei's refugee camp, which is identical to the other two adjacent villages (1,3). It also lists potential environmental impacts and mitigative measures for water supply-related projects, which could guide and provide a base for any future environmental screenings in the area.
- Environmental assessment tools, including NEAT+, are more effective when applied during the project planning phase, where there is more room for any potential changes in the project design or implementation strategy; however, they can also be used for ongoing projects to avoid and mitigate negative environmental impacts through corrective actions.

- NEAT+ is a participatory tool, and it's more effective when input data and results are discussed among the project team and with stakeholders. The environmental data collection and the discussion process are as important as the outcome of the environmental screening process. This helps in the collective understanding of project-related environmental impacts, helps create awareness, and contributes to learning on environmental issues.
- The quality of environmental screening outputs depends on the reliability of the input data and analysis of the result summary. It is important to minimize data biases and give considerable time to explore various data sources to validate and triangulate data. Merely relying on assumptions and completing the questionnaire without conducting field visits and consultation with important stakeholders should be discouraged. NEAT+ in that sense, NEAT+ is a flexible tool, and changes in the questionnaire can be made even later when more reliable information is available.
- Focus group discussion and community engagement are essential aspects of an environmental screening process, it helps in utilizing traditional knowledge of the local communities and understanding the community's challenges and priorities. It also gives them a sense of inclusion in the process but also informs them about their share of responsibility in addressing environmental impacts.
- NEAT+ generates a list project associated impacts and suggests mitigation measures; however, it is important to analyse and contextualize these impacts and mitigation measures. It is also important to look beyond the tool-generated result summary and consider other important impacts and mitigation measures that might be associated with the project activities. This might require some input from environmental experts and other stakeholders. As such, NEAT+ should be viewed as a guidance tool.
- Environmental screening may not be seen as a one-off or stand-alone exercise. Humanitarian organizations must systematically mainstream environmental screening as an embedded process within the program cycle or integrate it into existing project procedures, such as Situational Analysis or Rapid Assessments.

REFERENCE MATERIALS

- Access to NEAT+ Excel Sheet used in this environmental screening
- ECHO Environmental Guidance: https://civil-protection-humanitarian-aid.ec.europa.eu/what/humanitarian-aid/climate-change-and-environment_en.
- Environment and Humanitarian Action (EHA) Connect, a comprehensive online repository of tools and guidance spanning the humanitarian-environment nexus: <https://ehaconnect.org>.
- Environmental Emergency Centre - library of resources and tools for environmental emergency prevention, preparedness, and response Resources: <https://resources.eecentre.org/>.
- The International Federation of Red Cross and Red Crescent Societies (IFRC)- Green Response: Environmental Quick Guide (2022): <https://www.ifrc.org/document/green-response-environmental-quick-guide>.
- Nexus Environmental Assessment Tool: <https://neatplus.org/>.
- Environmental and Social Impact Assessment for the Proposed Kalobeyei Refugee New Site At Kakuma-Turkana West Sub County, UNHCR, 2015

ANNEXES

ANNEX 1: LIST OF PARTICIPANTS

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