



Strengthening Environmental Screening Capacity of Humanitarian Organizations

Environmental Screening Report

NEAT +

Nexus Environmental
Assessment Tool

TARAGOK IDP Camp

Anyidi Payam, Jonglei State, South Sudan



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INTRODUCTION

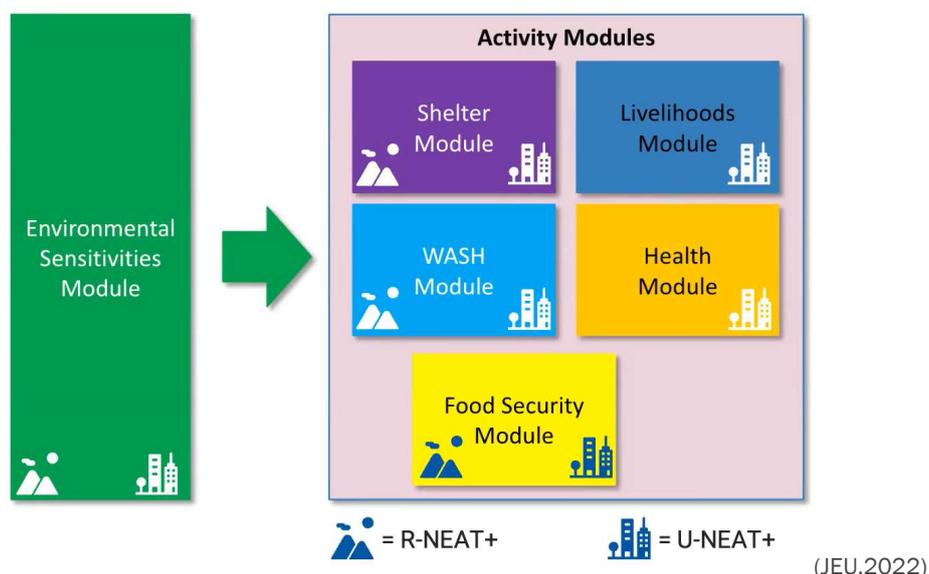
Humanitarian projects, although addressing protection needs and aiming for durable solutions for the crisis and conflict-affected communities, can result in adverse environmental impacts. These environmental impacts must be identified and addressed in the earliest stages of the humanitarian response to help protect the environment and communities from any project-associated potential adverse impacts. There is a growing recognition of environmental risks; however, a systematic mainstreaming of environmental risk into project planning, designs and implementations is yet to be strengthened. Mainstreaming environmental considerations into projects begins with an environmental screening exercise. It evaluates projects' interventions against the sensitivities of the receiving environment to determine positive and negative environmental impacts. Environmental screening can be done using various tools depending on the project's nature, scale, location, and organizations' implementation capacity. It is usually a mandatory requirement by local environmental authorities and donors for certain categories of projects, but it can also be an internal organizational compliance requirement.

This environmental screening report covers WASH and Food Security projects implemented in the Taragok IDP site of Anyidi Payam, Jonglei State, South Sudan. The report is part of the **Error! Reference source not found.**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 mainly designed for humanitarian contexts. A consortium of humanitarian organizations developed and officially launched this tool in 2019. The tool assesses vulnerabilities and impacts of humanitarian response activities and generates summary reports providing a snapshot of baseline environmental conditions, potential environmental impacts, mitigation measures, and development opportunities. There are currently two versions of the NEAT+, the Microsoft Excel-based Rural version and a web-based Urban version. The figure below shows that the NEAT+ consists of an Environment Sensitivity module and subsequent Activity modules that cover core humanitarian activities: Shelter and Settlement, WASH, Food Security, Livelihood, and Health.

Figure: Technical Structure of the NEAT+



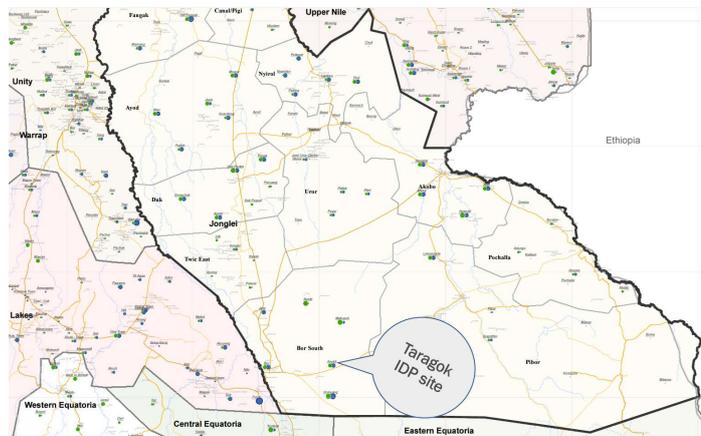
¹ <https://resources.eecentre.org/resources/neat/> or <https://neatplus.org/>

CONTEXT

The Republic of South Sudan gained independence from Sudan in 2011, becoming the world's youngest nation. South Sudan is blessed with an abundance of natural resources, including fertile soils, water from Nile River, oil, forests, wetlands such as Sudd, wildlife, and minerals such as gold, copper, etc. The country's refugee crisis remains the largest in Africa, with over 2.3 million South Sudanese refugees still hosted in neighbouring countries, mainly Ethiopia, Kenya, Sudan, and Uganda. Despite a relative pause in large-scale hostilities since the signing of the Revitalised Peace Agreement in 2018 and the formation of the Transitional Government of National Unity in 2020, sub-national and localized conflicts have continued to affect communities and cause new displacement across the country. 2.3 million Conflict and Climate Change affected internally displaced persons (IDPs) live in formal and informal settlements in Juba, Melut, Wau, Bor, Bentiu, and Malakal (UNHCR, 2023).

Bor South, which also hosts Jonglei's state capital, has a population of 331,333 and has hosted 26,500 IDPs displaced by the massive flooding and civil wars. Bor is along the river (white) Nile approximately 190 kilometres north of Juba, generally flat, surrounded by swampland and below 320 metres above sea level. It is an important town in the country in terms of political influence and geographic importance.

Bor is partly in the Sudd Wetland floodplain, one of the world's largest wetlands. The size of the Sudd varies from season to season and year to year, but it is estimated to be from 55 000 km² to 130 000 km² (UNEP, 2005). The perennial swamps and associated river-flooded grasslands support a rich biota, including over four hundred bird species and one hundred mammal species. As a result of these ecological values and its immense size, the Sudd is recognised as a region with significant wetland values that may merit consideration for world heritage nomination (IUCN, 2005).



Bor Town was among the epicentres of fighting that broke out in 2013, resulting in the widespread displacement of civilians, which persists to the present. People of two main tribes, Dinka and Nuer, reside in Bor and depend on seasonal floods and rains to feed their herds of cattle in the Sudd wetland area. The dominant economic activity in the region is pastoralist grazing of livestock and smaller ruminants (sheep and goats) with limited subsistence crop cultivation. Fishing in the Sudd is also a means of livelihood, and other seasonal activities include cultivating crops and cutting wood for fuel and shelter construction. Food shortages continue to be a challenge, especially during the dry season, and food aid through the UN World Food Program and other relief organisations remains an essential source for many of the returnees. All towns and villages remain without basic power, water supply, and sanitation services. Thousands of civilians remain displaced at the protection of civilian sites (POCs), including the Taragok IDP site in Anyidi Payam of Bor.

PROJECT BACKGROUND

Overall funding cuts for South Sudan have affected the interventions of humanitarian organizations. NRC still has ongoing and planned humanitarian projects on WASH, Shelters (temporary) and food security for the flood and conflict-hit IDPs. NRC has WASH activities for communities and schools in four Payam, that includes Anyidi, Baidit, Kolnyang and Makuach. The WASH activities are spread across Taragok, Bor stadium, Kondai, Malual agorbaar, and Bor IDP camps. The project aims to support 2,000 households with WASH NFIs and create awareness among 20,000 people about hygiene promotion, and 7,000 people will be provided with safe cleaning through the rehabilitated water points. The project also includes repairing and rehabilitation of identified non-functional boreholes. Sanitation activities include the construction of latrines, providing training and tools to the community to construct latrines, non-food items such as buckets, soaps, aqua tabs, filter clothes etc., and distributing hygiene kits or menstrual hygiene kits to women and girls. NRC's Shelter and Settlement activities in the IDP camps included providing shelter construction materials for temporary emergency shelters, technical support and NFIs. FAO and SIDA-funded agriculture project activities implemented by NRC, include small-scale irrigation and agricultural input and capacity-building activities.

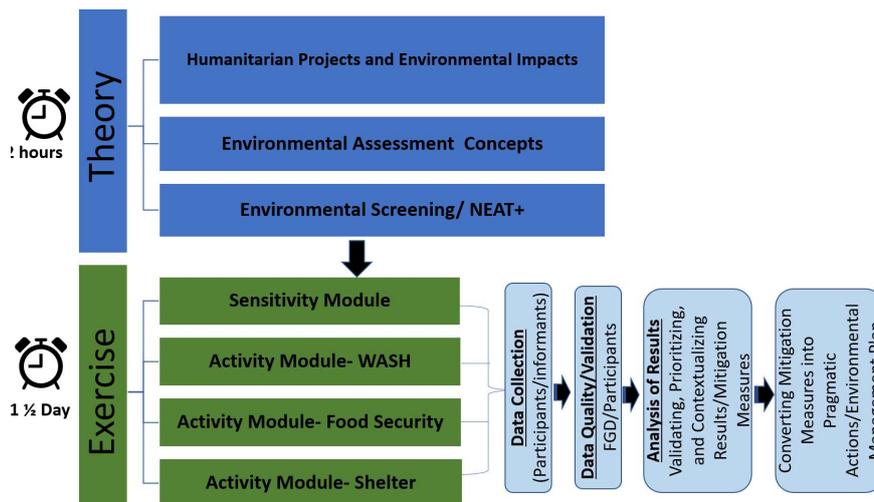
METHODOLOGY

This NEAT+-based environmental screening is part of the two-day capacity-building training for humanitarian organizations operating in Bor, South Sudan. As shown in the figure below, a dual-purpose approach is used where participants are exposed to the topic-related concepts, regulatory framework, and methods of conducting an environmental screening for humanitarian projects. This is followed by a NEAT+-based screening for a project led by the participants covering the sensitivity module and Shelter, WASH, and Livelihood modules. Considering the context of IDP camp in Taragok, Bor, the rural version of NEAT+ is applied. The questionnaires were completed in a group exercise using information from the NRC's implemented Shelter & Settlement and WASH projects in the selected IDP camp in Taragok, Anyidi.

The tool-generated results are analysed using criteria to contextualize and prioritize impacts and mitigation measures. The main criteria for prioritization included the impact's likelihood to occur, the nature of impacts, frequency, magnitude, and importance to the crises-affected population. The mitigation measures against each impact are contextualized through group discussion and using the criteria such as financial viability, technical feasibility, social acceptance of the mitigation measures, within the organizational capacity and scope of the project, and alignment with the national/organizational/donors' policies.

A field visit to the project site in Taragok IDP Camp, including a transect walk and a focus group discussion with community representatives, which helped understand the local situation and communities' challenges and priorities. Subsequently, the prioritized impacts and mitigation measures are compiled in this report.

Figure1: Overview of the Approach Employed



Each Activity module of NEAT+ has several sub-activity modules, which are selected as per the scope of the projects. Some activity & sub-activity modules that were beyond the scope of selected project are not part of this analysis, although they were completed as part of the group exercise with the aim to expose participants to all the sub-modules within the NEAT+.

ANALYSIS OF THE RESULT SUMMARY

SENSITIVITY ANALYSIS

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 their natural system, and about the carrying capacity of the natural systems against the proposed project activities.

The sensitivity analysis report below provides an overview of the baseline environmental conditions of the Taragok IDP camp area, and categorizes site-specific environmental risks into 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.

The main environmental issues highlighted in the sensitivity report are.

- A high concentration of people in the Taragok and adjacent areas of Bor, is adding pressure on scarce natural resources, such as water resources, grasslands, and forests. Competition for natural resources such as fuelwood, land, shelter materials, fresh water and wetland may be a concern. Environmental impacts are likely to be substantial.
- Wood and charcoal are the area's primary sources of household energy and construction, leading to deforestation as it exceeds the regeneration rate. There may be a lack of incentive to practice sustainable behaviour, leading to unsustainable use of natural resources. Deforestation and resource scarcity may exacerbate protection and biodiversity concerns, threatening social cohesion.
- Biodiversity may be fragile in the area. Sudd Wetland is in proximity, which is critical for the hydrology of the area and the Nile River system. Sudd Wetland is a large and relatively undisturbed wetland ecosystem, which is the major habitat of many species and includes large concentrations of various species of migratory birds and antelope.
- Land degradation and conflict over land use rights may be an issue in the area. The large number of livestock with uncontrolled grazing often results in land degradation, and unclear land tenure issues could lead to potential conflict.
- Water scarcity remains an issue of high concern issue to the residents of IDP camps, the issue was also raised during the focus group discussion with the communities. This is particularly due to the low regenerative capacity of the natural system coupled with dry climatic conditions and over-extraction of the groundwater.
- The water sources may be vulnerable to contamination, and the distance between water sources and sewage facilities may not be adequately maintained, leading to leakages contaminating water sources. water quality may be an issue.
- There is no adequate drainage system for rainwater and sewerage. During the rainy season, water remains in the areas blocking access and turns into mosquito breeding ponds. Environmental sanitation and disease transmission may be an issue.
- The area has a heightened exposure to climate-related hazards. The area is highly susceptible to flooding and droughts. During the focus group discussion with the community, they shared their concern about changing rainfall patterns and their direct impacts on their rainfed agricultural and other livelihood activities.
- Indoor pollution from the burning of poor-quality fuels, such as charcoal, combined with low-efficiency cooking technologies is an issue in the Bor and Taragok area, this can have detrimental respiratory health consequences.

SHELTER- Potential Environmental Impacts and Mitigation Measures

The Shelter summary report outlines environmental risks associated with the planned project activities and combines them with the sensitivities of the project location. Based on its significance, environmental risks are categorized as low, medium, and high. The potential environmental risks are prioritised by the training participants and communities that were consulted during the project site visit. These potential environmental risks include climate-related hazards, deforestation and biodiversity loss, poor capacity for solid waste management, land degradation, and indoor pollution.

- **Climate-related hazards**, particularly floods, droughts, changing rainfall patterns, and heatwaves, have been identified as issues in Taragok, Bor. Flooding is frequent during the rainy season due to poor drainage systems. Drought and unpredictability in the rainfall have affected the livelihood sources of the community and IDPs, including rainfed farming and livestock grazing land. Shelter siting, design, and materials are temporary and vulnerable to extreme weather events. Most IDPs are vulnerable to withstand

major precipitation, heat waves, and flash flooding, adversely affecting homesteads, people and their livestock and grazing lands.

- **Deforestation** have been identified as a potential issue due to the demand for construction, expanding agricultural land, and fuel wood. Most IDPs in the Taragok camp inhabitants use fuel wood and charcoal for household energy needs, which put direct pressure on forests. Diesel generators are commonly used in public facilities, making noise and air pollution. IDPs in the camp depend highly on humanitarian relief assistance, which is often insufficient to meet their needs. Women and children support families in generating additional income by collecting and selling fuelwood from the forest, causing forest degradation.
- **Solid waste management** has been identified as a potential issue of concern in Taragok camp, which hosts the garbage dump site of the Bor Municipality. The issue was observed during the field visit, and the communities also complained about the impacts of dump sites on their lands and livestock's health, claiming that many cows and goats died from eating and drinking wastewater near the garbage dump site. There are no adequate waste dump sites for household waste, waste is thrown near the shelters and is often burned in the open air. Shelter project activities may also contribute to increased waste generation, with adverse health and environmental consequences. Unmanaged waste can also lead to water stagnation, increasing the risk of vector transmission.
- **Land degradation and Erosion** have been identified as potential issues due to overgrazing and poor land management practices. Vegetation cutting also loosens the soil, resulting in soil erosion, sedimentation, and siltation. The eroded soil will also cause stream congestion, which might hinder stream flow, resulting in habitat loss, water pollution and water scarcity further downstream. Removal of natural land cover, excavation, extraction of construction materials and other construction-related activities can result in sheet and gully erosion, where the top layer of the fertile soil is eroded. This affects the soil water and nutrient-holding capacity of crop soils and favourable soil structure for root development. Land degradation and erosion of fertile land may also increase competition for grazing resources and may lead to conflicts with pastoralists during the dry season. Such conflicts with pastoralists are common in the Jonglei state along the Nile basin.
- **Air pollution** has been identified as an issue of concern, primarily due to indoor cooking and inadequate ventilation system. Indoor air pollution, primarily from indoor cooking in the Taragok camp, may have severe health impacts, especially for women and children. Cooking is often done inside the poorly ventilated shelters in the IDP camp, and the firewood, charcoal, and kerosene used as fuel produce large quantities of smoke that stay in the air long after extinguishing the fire. Burning firewood releases particulate matter such as CO, CO₂, and sulphur oxides, which are extremely dangerous. Some families even use burning plastic as cooking fuel, which is very harmful with direct health consequences.

The table below lists contextualized mitigation measures against the selected² potential impact extracted from the tool-generated Shelter result summary.

Potential Project Impacts	Mitigation Measures
Climate Hazards	<ul style="list-style-type: none"> ▪ Consult local hazard maps while selecting sites for shelters. Implement multi-hazard resistant shelter and infrastructure ▪ Use community-based Disaster Risk Reduction methods to identify needs and priorities ▪ Establish simple early warning mechanisms that are accessible to the community (could be an alert system through local radio or phone messaging etc.) ▪ Use participatory mapping and depict the main risks and causes of flood risks ▪ Clear drainage canals and improve the infiltration capacity of the ground with vegetation coverage ▪ Implement flood-resistant shelters in compliance with appropriate shelter codes and regularly upgrade shelters and infrastructure where needed ▪ Use lightweight shelter materials to improve heat dissipation, insulate roofs to minimize heating from solar radiation. Roofing should include adequate drainage, and the structure and fixings should be robust enough to withstand periods of heavy rainfall and rain. ▪ Support capacity-building & awareness programs on climate adaptation & hazards

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² Please refer to Methodology section for more information on criteria used for selection for impacts and mitigation measures

	<ul style="list-style-type: none"> Consider gender-specific adaptation strategies, as climate change impacts are disproportionate among gender
Deforestation & Biodiversity	<ul style="list-style-type: none"> Consider providing fuel-efficient stoves as part of the Non-Food-Items support Support fuel wood substitution such as solar cookers or Liquefied Petroleum Gas Incorporate green areas in your planning. Green spaces also improve inhabitant satisfaction and can provide a natural cooling effect Plant native tree species and discourage introducing any invasive species Educate communities on sustainable consumption of wood and charcoal for the household energy use Use various construction materials and reduce the use of wood in the shelter construction, where alternatives are available. Consider generating alternative livelihood sources for people who make their income from selling wood and charcoals
Solid Waste Management	<ul style="list-style-type: none"> Separate organic and inorganic waste and designate separate waste dump sites at an appropriate distance Minimize the amount of packaging, substitute for paper or cardboard (biodegradable), and promote the principle of reducing, recycling, and reusing. Select items strategically and consider each household's specific needs, which can reduce resource consumption and waste generation. Consider multifunctional items and post-crisis use of the items. Consider materials and construction methods that allow for easy dismantling, transport, and reuse, to avoid wasted materials. Transitional shelters are a high likelihood of mobility of the affected population. Support waste livelihoods projects, if possible, and promote best practices Storing any chemical waste in approved containers to avoid any spills or leakages Arrange waste collection and awareness campaigns and educate the community on potential health risks.
Erosion & Land Degradation	<ul style="list-style-type: none"> Stabilise the slopes or choose an appropriate site for the shelter construction Refill the excavated land (if any) used for making shelters bricks within four days to avoid hosting vectors Limit vegetation clearance only to the project site only and take action to stabilize steep slopes Plant indigenous (light but deep roots) trees as a revegetation measure Avoid excavating in areas near the surface or shallow sub-surface water flows If possible, promote agro-forestry practices through other projects
Air Pollution	<ul style="list-style-type: none"> Consider proper ventilation system in the shelter design (separate kitchen) Plan construction activities that minimize dust exposure to nearby sensitive receptors, and use water spray to minimize dust Vehicles used for the transportation of the construction materials should be well-maintained and should respect the speed limit Provide clean energy cooking materials such as clean energy cooking stoves, Liquefied petroleum gas etc.), and discourage indoor cooking in closed kitchens Discourage open-air burning of waste

WASH- Potential Environmental Impacts and Mitigation Measures

The WASH summary informs the project team about the potential environmental risks that must be considered during project planning, design, implementation, and operation stages. WASH project site-specific environmental risks include water scarcity impacting social cohesion, water quality issues and contamination of water sources, poor sanitation and drainage, loss of biodiversity, climate-related hazards such as flooding and droughts, and low capacity to manage solid waste and wastewater.

- Water scarcity** is an issue of high significance overall in the Jonglei State, particularly in the Taragok campsite. The demand for water is significant, while access to water services in the Camp is minimal. During the focus group discussion, the communities complained of inadequate water supplies, distance to the nearest water supply source, and non-functional bore wells. There are few boreholes and communal standpipes where most of the IDP households obtain water for their daily consumption. Water extracted from the White Nile is not fit for drinking and household use without treatment and requires chlorination. Water in Taragok is extracted from shallow and deep wells with limited or no prior hydrogeological studies to assess the capacity of the aquifers, which exerts pressure on groundwater resources. Conflicts often arise whenever there is competition for scarce water resources between tribes in the project area.

- **Contamination of water sources** from poor drainage systems and lack of proper sanitation infrastructure has been identified as a high-risk issue. Sanitation facilities in Taragok are close to non-existing due to historically weak infrastructure coverage, cultural practices, and flood damage. Recent water tests in the area also indicate microbial and pathogenic contaminants in water. Loose soil allows the movement of contamination, such as human waste, into water bodies. Leakage, seepage, and overflow from these facilities may contaminate surface water bodies and groundwater. Surface water commonly used for bathing, cleaning and for drinking in the area is also likely contaminated by livestock movement and pathogens from open defecation. Acute Watery Diarrhea (AWD) is high due to contaminated water among children and older people with weaker immune systems. Stagnant water from rain and poor drainage may turn into mosquito breeding sites with an increased risk of waterborne diseases such as cholera or malaria.
- The IDPs in the Taragok are highly vulnerable to **climate-related risks**, particularly floods and droughts. Jonglei state has been at the forefront of flooding in past years, damaging infrastructure, agriculture, and livestock, disrupting the supply chain, and affecting market prices of daily-use household items. WASH infrastructure may be damaged by flooding and is not accessible during flooding or wet season, increasing the level of open defecation practices, using surface water for drinking, and a great risk of disease outbreak.
- **Solid waste management** has been identified as an issue of concern in the Anyidi Payam and Taragok IDP camps. Most garbage from the Bor Municipality is dumped in the Anyidi Payam, while there is low capacity, supporting infrastructure and awareness to manage solid waste and fecal sludge. There is no designated dump site at an appropriate distance for household solid waste, and most waste is disposed of near the shelters or in nearby informal waste dump sites. Environmental sanitation and disease transmission may be an issue. Packaging and other sanitary waste, including dignity kits, may be disposed of inappropriately, and where there are limited recycling capabilities, it might become a vector for spreading disease within communities.
- **Wastewater management** has been identified as an issue for humans and livestock in the Taragok IDP camps. There is a lack of drainage infrastructure and low capacity to manage wastewater and fecal sludge. Wastewater ponds can turn into mosquitoes' breeding grounds, has an odour, and carry contaminants that harm human and livestock health. Contaminated water can also drain into streams and other surface water for washing, cleaning, and bathing, raising health risks. Environmental sanitation and waterborne diseases such as Acute Watery Diarrhea are severe issues in the area.

The table below lists contextualized mitigation measures against the most relevant anticipated impact extracted from the tool-generated WASH result summary.

Potential Project Impacts	Mitigation Measures
Water Scarcity	<ul style="list-style-type: none"> ▪ Conduct hydrogeological surveys and water balance assessments for bore well projects and avoid over-extraction from confined aquifers ▪ Ensure that groundwater abstraction does not exceed its replenishment capacity ▪ Reduce water losses/leakages (e.g., self-closing water points, trucks carrier water container leakages, regular pipe maintenance etc.) ▪ Establish and expend rainwater harvesting system and promote kitchen gardening ▪ Consider water ponds for groundwater recharge but ensure it does not turn into a host of vector diseases ▪ Build capacity for water conservation practices ▪ Consider community green spaces to promote cohesion among the community and avoid potential conflicts over scarce resources
Water Contamination	<ul style="list-style-type: none"> ▪ Safeguard (fencing) drinking water sources against contamination, particularly from animals and open defecation ▪ Properly store oil and chemicals and prevent any leakages into soil or water ▪ Machinery and chemical/chlorine storage should be monitored for any leakages. Safely dispose of oil residuals, including waste oil, lubricants, and used filters ▪ Identify improvements to sanitation infrastructure (e.g., improve latrine design) ▪ Conduct sensitization campaigns on good sanitation practices and links to health ▪ Maintain distance (minimum 15-20 meters) and keep the water source at a higher elevation from the contamination source ▪ Ensure reduced stagnation of water through proper drainage systems

	<ul style="list-style-type: none"> Protect water sources and monitor/test water quality to ensure potable quality, including tests for microbial, pathogenic, arsenic, fluoride, and iron content
Solid Waste Management	<ul style="list-style-type: none"> Separate organic and inorganic waste and designate a waste dump site at an appropriate distance from shelters. Minimize the amount of packaging, substitute for paper or cardboard (biodegradable), and promote the principle of reducing, recycling, and reusing in all operations Promoting organic waste composting, which recovers valuable nutrients, improves soil fertility, and decreases raw waste. Consider setting up waste livelihoods projects Promote waste management in communities via Reduce, Re-use and Recycle Explore the potential of biogas production from fecal sludge Create awareness and build the capacity of the community to dispose of waste at designated sites
Wastewater management	<ul style="list-style-type: none"> Promote the use of wastewater for kitchen gardening Consider a proper drainage system, and consider odour control mechanisms Improve sanitation infrastructure Consider necessary arrangements for the safe disposal of fecal sludge and its reuse as manure or biogas Support community awareness programs Protect water sources from pollution, particularly human and animal excreta
Deforestation	<ul style="list-style-type: none"> Provide treated water to minimize boiling water with fuelwood at household Plan indigenous trees and discourage any invasive species of trees Promote alternative clean sources of energy for household use Promote tree plantation by the water points

LIVELIHOOD- Potential Environmental Impacts and Mitigation Measures

Environment and livelihoods are co-dependent; when land is degraded or prone to natural hazards, productivity decreases, directly impacting communities' livelihood and well-being. Interventions that focus on short-term benefits and neglect consideration of the environment can jeopardize long-term food security and livelihood opportunities. Therefore, a healthy and productive ecosystem is a prerequisite for those reliant on the environment for their livelihoods. The Sphere Standards (2018) also state that environmentally sensitive options within the livelihood interventions be chosen whenever possible.

This section summarises the environmental vulnerabilities, key impacts and mitigation measures associated with the NRC's livelihood project in Taragok, Anyidi, Bor, South Sudan. The prioritized potential environmental impacts from the proposed livelihood project activities are listed below.

- Climate-related hazards**, such as flash flooding, droughts, heat waves, and unpredictability of rainfall, have been identified as an issue in the Taragok area. The IDPs are engaged in livestock, fishing and rainfed agriculture, which is highly dependent on rainfall, but the increasing unpredictability of the rain has resulted in low agricultural productivity. Climate hazards might also reduce yields and heat stress for field workers.
- Using **chemical fertilizers and pesticides** is although limitedly used due to high cost, may have detrimental impacts on soil, water and human health, and has been identified as an issue of environmental concern. This often leads to land degradation and contamination of surface and groundwater resources. Pesticides are toxic to human health and the environment, particularly when usage is poorly managed. Continued poor pesticide practices increased pest resistance, necessitating even higher dosages. Pesticides also destroy other flora and fauna, damaging ecosystems and decreasing biodiversity.
- Water scarcity** may be an issue due to the overconsumption of water for agriculture, considering the dry climatic conditions in the Taragok area. Some farmers also use groundwater for irrigation, which could impact the groundwater aquifers if the water balance is not considered. On-farm practices such as unlevelled land and type of crops could also affect water consumption.
- Land and soil degradation** has been identified as an issue associated with agricultural practices. Land and soil can be degraded with unsustainable agriculture practices such as monoculture, tillage etc.
- Deforestation** is happening at a higher rate for fuel wood, construction, security, and expansion of agricultural land.

Potential Project Impacts	Mitigation Measures
Climate-related Hazard	<ul style="list-style-type: none"> ▪ Use localized and easy-to-use early warning systems (radio/SMS alerts) ▪ Support climate-smart and conservation agriculture: low till, diverse rotations, cover/tree/shrub crops more resilient to drought ▪ Support capacity-building and awareness programs on climate adaptation and resilience in the context of agriculture
Use of Chemical Fertilizers	<ul style="list-style-type: none"> ▪ Assess traditional knowledge and promote good practices through awareness campaigns ▪ Promote Integrated Pest Management practices, and discourage the use of chemical fertilizers ▪ Provide only organic fertilizers, and educate farmers on the benefits of using organic fertilizer ▪ Monitor water quality and disseminate information to all stakeholders.
Water Scarcity	<ul style="list-style-type: none"> ▪ Promote on-farm and off-farm water-saving practices ▪ Support drought-tolerant seed and other agriculture inputs ▪ Conduct hydrogeological assessment for groundwater extraction for agriculture ▪ Support suitable alternative water sources such as farm-based rainwater harvesting, conjunctive water use, supplementary irrigation, etc. ▪ Explore the potential of household wastewater reuse for agriculture. ▪ Support farmer awareness programs on water-saving & heat management at field
Land and Soil Degradation	<ul style="list-style-type: none"> ▪ Promote polyculture and rotational crop cultivation ▪ Intercrop with legumes or other nitrogen-fixing species ▪ Promote low-tillage farming and discourage the use of inappropriate farm machinery ▪ Take appropriate localized measures to minimize waterlogging and salinization ▪ Consider appropriate fencing around agricultural farms to divert livestock from crop-raiding ▪ Support agriculture extension services, and local farmer learning centres,
Deforestation	<ul style="list-style-type: none"> ▪ Discourage the expansion of agricultural land at the cost of cutting trees ▪ Support native tree plantation and other agro-forestry measures when possible ▪ Support community awareness programs

RECOMMENDATIONS AND NEXT STEPS

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

- This NEAT+-generated environmental screening presents a systematic and objective assessment of the significance of the potential impacts of the NRC's WASH and Shelter projects in Taragok IDP camp in South Sudan. It assesses the risks involved, identifies and proposes contextualized mitigation measures for addressing negative impacts and enhancing positive effects. The report serves as a base for future environmental assessments in the area.
- Main environmental risks in the Taragok IDP camp that needs to be considered before project implementation are climate-related hazards, particularly flooding and droughts, water scarcity, deforestation and loss of biodiversity, erosion and land degradation, and limited capacity to manage solid and wastewater.
- The exercise should be followed by an Environmental Management Plan, where the mitigation measures are translated into project activities with clear implementation responsibilities. An environmental management plan should be a collaborative effort and must be monitored by the implementing agency for compliance, and contractual terms can be used to enforce contractor and subcontractor compliance. For self-reconstruction, adequate monitoring mechanisms should be in place.
- Environmental assessment tools, including NEAT+, are more effective when applied during the project planning phase, where there is more room for any potential adjustments in the project design or implementation strategy; however, they can also be used for ongoing projects to avoid and mitigate adverse 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 wider 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. Minimizing data biases and giving considerable time to explore various data sources to validate and triangulate data is important. Merely relying on assumptions and completing the questionnaire without conducting field visits and consultation with important stakeholders should be discouraged. NEAT+ is a flexible tool, and changes in the questionnaire can be made even at a later stage 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 and informs them about their responsibility in addressing environmental impacts.
- NEAT+ generates a list project associated impacts and 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 associated with the project activities. This might require some input from environmental experts and other stakeholders. As such, NEAT+ should not be viewed as an absolute but as a guidance tool.
- It is important to consider mitigation measures within the project's duration and scope. Mitigation measures will not always mean 'doing new/additional things' but often, it would be doing things differently in a more environment-friendly manner and may not necessarily imply any additional cost. Options need to be explored if some mitigation measures could be implemented through other projects within the organization or in collaboration with partner organizations operating in the Anyidi Payam.
- 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, where possible, integrate environmental screening into existing project procedures and practices, such as Situational Analysis or Rapid Assessments.

REFERENCE MATERIALS

- Access to NEAT+ Microsoft Excel used in this environmental screening (files provided with the folder)
- 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>.

ANNEX: LIST OF PARTICIPANTS

ORGANIZATION	CONTACT DETAILS	ORGANIZATION	CONTACT DETAILS
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