European Commission

Guidance on the operationalisation of the minimum environmental requirements and recommendations for EU-funded humanitarian aid operations

Civil Protection & Humanitarian Aid

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LIST OF ACRONYMS

CEDRIG	Climate, Environment and Disaster Risk Reduction Integration Guidance
CCCM	Camp Coordination and Camp Management
CEAP	Community Environmental Action Plans
CFS	Child-Friendly Spaces
CO2	Carbon dioxide
CVA	Cash and Voucher Assistance
DG ECHO	Directorate-General for European Civil Protection and Humanitarian Aid Operations
DRR	Disaster Risk Reduction
EMS	Environmental Management System
EOI	Expressions of Interest
EU	European Union
FSM	Faecal Sludge Management
FSP	Financial Service Providers
GBV	Gender-Based Violence
GHG	Greenhouse Gasses
HCF	Healthcare Facility
HDP	Humanitarian-Development-Peace (nexus)
IPM	Integrated Pest Management
IV	Intra-venous
IWRM	Integrated Water Resource Management
LCA	Life Cycle Analysis
LPG	Liquefied Petroleum Gas
MEB	Minimum Expenditure Basket
MoU	Memorandum of Understanding
NEAT+	Nexus Environmental Assessment Tool +
NGO	Non-Governmental Organisations

NFI	Non-Food Item
PSEA	Protection from Sexual Exploitation and Abuse
RM	Resilience Marker
RUTF	Ready to Use Therapeutic Food
RUSF	Ready to Use Supplementary Food
SOW	Statements of Work
SPWS	Solar Powered Water Schemes
SWM	Solid waste management
S&S	Shelter & Settlements
TE	Thematic Expert
WASH	Water, Sanitation and Hygiene
WGSS	Women and Girls' Safe Spaces
WHO	World Health Organisation

INTRODUCTION

Ethiopia: the worst drought in a generation. Photo credit: EU/Silvya Bolliger

Climate change and environmental degradation are further threatening the livelihoods and well-being of populations affected by humanitarian crises. In line with the "Do No Harm Principle', humanitarian actors should minimise the damage they cause to the environment, while maintaining their ability to provide timely and principled humanitarian assistance to those in need. In 2007, the European Consensus on Humanitarian Aid already underlined that "*Policies in the different sectoral areas of humanitarian aid intervention [...] must be adapted to context and to recipients in order to have maximum impact. The 'do no harm principle' is the minimum requirement underlying such policies and aid approaches, which also means that environmental and other longer-term considerations must be taken into account from the outset even in short-term emergency interventions*"[1].

Safeguarding the environment is fundamental to humanitarian action for different reasons. From climate change and disasters to conflicts and even pandemics, the environment lies at the very heart of some of the most complex and pressing issues of our time. Environmental degradation, deforestation, desertification, soil erosion and pollution can also lead to significant and protracted humanitarian crises. Crises are becoming more complex, not least because additional factors such as climate change and environmental degradation are compounding other risks and amplifying their consequences on people living in humanitarian settings. Proactively addressing environmental issues, starting from the early phases of emergency response through to the recovery phase, can reduce these risks and reduce vulnerability. It can also help ensure that natural resources in the areas affected by humanitarian crises can be accessed equitably by host and displaced populations. The benefits of reducing the impact of humanitarian operations on the environment are numerous and wide-ranging: for example, by providing cleaner cooking fuels, we not only reduce our emissions but also provide a safer and healthier indoor environment and reduce the risk of gender-based violence, fuelwood would no longer need to be collected. By managing our waste properly, we not only reduce pollution but also reduce the risk of being exposed to infectious diseases in the world's most vulnerable communities. Preserving the ecosystems on which people rely for their livelihoods also enhances their resilience to climate shocks. Preventing deforestation also helps to reduce the risk of local disasters, including landslides, mudflows and floods among others. Proactively addressing environmental issues is therefore a way to address and prevent humanitarian needs.

In October 2020, the European Commission's Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) released its approach to reducing the environmental footprint of humanitarian aid[2] ("the approach"), DG ECHO's key contribution to the European Green Deal. The approach states that as an overarching principle, negative impacts on the environment related to humanitarian response should be avoided, and where this is not directly possible, mitigating measures to reduce the potential negative environmental impact should be implemented, applying a precautionary approach. The commitment to reducing the environmental footprint of humanitarian aid now guides DG ECHO's own actions and cooperation with partners.

[1] OJ C 25, 30.1.2008, p. 1–12

[2] https://ec.europa.eu/echo/what/humanitarian-aid/climate-change-and-environment/dg-echos-approach-reducing-environmental-footprint-humanitarian-aid_en

One of the key deliverables of the approach were the minimum environmental requirements and recommendations, officially released at the European Humanitarian Forum in March 2022. They are the result of a collaborative effort with DG ECHO's partners, experts in the field of environment and humanitarian aid, and compile the currently commonly feasible solutions for reducing the environmental footprint of humanitarian assistance, across projects and programmes. The minimum environmental requirements represent criteria partners need to address in a humanitarian response. Partners were encouraged to apply them in 2022, in anticipation of them becoming mandatory as of 2023.

DISCLAIMER

The objective of this document is to provide additional guidance to partners and DG ECHO staff on how to apply the minimum environmental requirements and recommendations. It will replace the previously published document with the minimum environmental requirements and recommendations, as each chapter already contains a re-iteration of these.

DOCUMENT STRUCTURE

The Guidance first outlines guiding environmental principles, reflecting the key areas of intervention for implementing environmentally sustainable humanitarian projects and programmes identified in DG ECHO's approach to reducing the environmental footprint of humanitarian aid. They themselves are not the requirements.

The Guidance then details the minimum environmental requirements and recommendations that are divided into cross-cutting, which all staff developing and implementing projects should first refer to, as well as sector-specific which only concern projects covering that specific sector. While partners will be expected to apply the requirements, the minimum environmental recommendations are actions that are encouraged and looked at favourably; nevertheless, their incorporation in DG ECHO's proposals remains optional for the time being and will not affect the overall project evaluation outcome.

For each of the chapters, technical guidance is provided which explains the key concepts and processes covered in the minimum requirements and recommendations and shows how to practically implement them throughout the humanitarian response. The guidance also references tools, standards and examples of methods and best practices relevant for the implementation of cross-sectoral as well as sector-specific requirements and recommendations.

GENERAL CONSIDERATIONS

1. APPLICABILITY

The minimum environmental requirements and recommendations as well as the related global environmental guidance, were not developed for a specific humanitarian situation or geographic area, therefore some points will be more relevant than others for a particular context. Furthermore, they will be applicable depending on the project's sector(s) and will also depend on the particular characteristics of the activities implemented in a specific humanitarian response. Therefore, not all the requirements outlined in this document will apply to every response and will further depend on whether the action is implemented in a rural, urban or volatile displacement context and whether the humanitarian situation has stabilised.

As stated above, compliance with the requirements should not compromise the humanitarian imperative to save and preserve lives. In the early stages of an emergency (first few days/weeks) time may be limited to conduct environmental screenings/assessments and implement certain requirements. However, as soon as a needs assessment is being done, environmental considerations should be embedded within it. In any case, when implementing Shelter and Settlements (S&S) and Water, Sanitation, and Hygiene (WASH) projects, the environmental screenings/assessments remain mandatory due to the large potential environmental impacts of these interventions. Further guidance on environmental screenings/assessments can be found under the two specific sectors: Shelter and Settlements, WASH and for site decommissioning.

Environmental protection and rehabilitation should, where feasible, start already in the emergency phase. Mainstreaming environmental considerations into emergency preparedness and operational procedures is a key mechanism for a more environmentally sustainable emergency response. DG ECHO will support the development of necessary knowledge, tools and means for a greener emergency response. This will include supporting better integration of environmental concerns into preparedness actions so that for example, more durable and sustainable relief items will be developed and already in stock when a disaster strikes, or the necessary procedures are in place for a better-planned emergency response which takes into account potential environmental impacts.

2. SCOPE

The minimum environmental requirements and recommendations were developed to address negative environmental impacts related to humanitarian responses at a project level, hence they should be considered field-based greening approaches. DG ECHO will apply a 'mainstreaming' approach, meaning that environmental impacts should be mitigated across sectors, projects and programmes and not implemented as stand-alone or parallel actions to the response activities. The requirements should rather be integrated and mainstreamed across funding, as is currently done for gender, age and disability inclusion, to encourage humanitarian actors to consider the environment holistically when designing and implementing actions. In practical terms, this means that most likely every activity will undergo a certain level of scrutiny and, potentially, modification in order to become more environmentally compliant. It is clear that some sectors will require more effort and research to transition, while others have been already implementing quite advanced greening strategies already. The minimum environmental requirements reflect this accordingly to not place undue burden on partners in areas that are still under-developed.

The minimum environmental requirements are intended to signal to partners which measures DG ECHO will be looking for in project proposals and project monitoring due to their immediate potential to reduce the environmental impact of humanitarian aid. They are called "minimum" environmental requirements because DG ECHO expects these measures to be reflected in project proposals, in the applicable contexts, as a *minimum*. The requirements are therefore not meant to be exhaustive. For this reason, recommendations are also included.

It is important to note that, although connected, climate change adaptation and climate resilience are not the same as reducing the environmental footprint of humanitarian aid. In order to adequately respond to the complex demands of including environmental considerations in humanitarian work and properly report on them in the Single Form, humanitarian organisations must have a clear definition of the two fields and how they relate to one another because they represent separate issues and demand different response approaches.

Climate change adaptation and resilience building are not the core focus of this Guidance. While climate change can precipitate environmental degradation and environmental degradation can worsen climate change, the measures to adapt to the impacts of climate change are not interchangeable with the measures to reduce carbon footprint or protect the environment. Climate change adaptation focuses on local capacities and support communities in adapting to, and managing different hazards caused or worsened by the effects of climate change. It centres on developing local capacities to prepare for, respond to and recover from different shocks and stressors. This builds resilience of local social as well as ecological systems to climate risks and other hazards, enabling transformations towards safer and sustainable development pathways.

The "greening" of humanitarian responses on the other hand, refers to the environmental responsibility of humanitarian actors and to actions aimed at reducing the negative environmental impacts of humanitarian operations themselves. This is the core focus of this Guidance note and the minimum environmental requirements. This includes the environmental impacts that occur at facilities, as part of support operations, or due to the implementation of humanitarian programmes and projects. It also includes actions that improve local environmental conditions as part of the humanitarian response and recovery, such as rehabilitation or reforestation. DG ECHO will contribute to increasing climate resilience through other means, for example DG ECHO's Disaster Preparedness Approach, where one of its funding priorities for 2021-2024 is "Climate and environmental resilience" but also mainstreaming climate resilience across humanitarian projects.

3. MINIMUM ENVIRONMENTAL REQUIREMENTS AND ORGANISATIONAL-LEVEL POLICIES

Due to the uniqueness of the contexts in which humanitarian organisations operate, and with the aim to reflect the partially different set of actions related to environmental sustainability, environmental impacts can be differentiated between the organisational level (i.e., offices, facilities, guest houses, transport of staff etc.) and the programme/project level (activities implemented to deliver the response).

Even though, for the time being, the environmental requirements address project-level impacts only, DG ECHO recognises the importance to manage the environmental impacts comprehensively and encourages all our partner organisations to assess and systematically monitor all the direct and indirect emissions and pollution, including the ones linked to their offices and facilities (scope 1, 2, and 3). For the moment however, DG ECHO is not setting any organisational-level requirements.

By using a systematic approach, organisations can understand all their impacts (organisational and project level) and address them effectively. One of the most commonly used and effective tools to assess and tackle organisational-level environmental impacts is the Environmental Management System (EMS) approach, which is a set of processes and practices that enable an organisation to reduce its environmental impacts, increase its operating efficiency and offer a systematic approach to prioritise environmental impacts related to the organisation's operations and activities. Introducing environmental specifications in procurement policies is also a powerful enabler for a more environmentally sustainable humanitarian response.

USEFUL ENVIRONMENTAL STANDARDS:

ISO 14000 series: The standards define EMS criteria and help organisations minimise the environmental impact of their operations by providing a framework for managing environmental issues and addressing environmental management systems, planning, performance evaluation, labelling and life cycle assessment.

EU Eco-Management and Audit Scheme (EMAS): A premium EMS developed by the European Commission for companies and other organisations to evaluate, report, and improve their environmental performance. EMAS is open to every type of organisation eager to improve its environmental performance. It spans all economic and service sectors and is applicable worldwide.

USEFUL LINKS AND RESOURCES:

Environmental Management at WFP: The strategy outlines several benefits of adopting an EMS within an organisation

MSF Environmental Toolkit Report: The toolkit can be used to identify lower-carbon actions and mitigation measures to avoid and reduce environmental and social impacts

ALIMA carbon reduction roadmap: The road-map presents 20 concrete solutions, to achieve the organisation's trajectory of reducing its GHG emissions by 50% and optimising its waste management by 2030.

The Climate Charter: The framework enables the humanitarian community to holistically tackle the humanitarian impacts linked to climate change and environmental degradation.

4. MINIMUM ENVIRONMENTAL REQUIREMENTS AND LOCAL AND NATIONAL LAWS AND REGULATIONS

Humanitarian operations take place in the wider context of local and national laws and regulations, including environmental laws and regulations. The minimum environmental requirements are intended to complement these. In cases where the local and/or national laws are more stringent than the minimum environmental requirements, those laws or regulations should take precedence over the requirements, for example where there are bans on plastic bags or single use plastics, or where laws exist regarding waste management. The Guidance Note for Humanitarian Workers regarding plastic Regulatory & Legislative Frameworks[3] gives the first overview of such legislation relating to plastic use. Possible contradictions between national/local laws and the minimum environmental requirements, although not expected, can be examined on a case-by-case basis together with the relevant ECHO Technical Assistant and Thematic Expert on Environment.

5. FINANCIAL IMPLICATIONS OF GREENING

While DG ECHO recognises that some of the environmental requirements will entail higher costs, many existing sustainable solutions do not require additional investments but rather a new way of working and a different approach to planning interventions. For those measures that require additional costs, DG ECHO will privilege co-funding the implementation of the requirements over those listed as recommendations.

5.1. ELIGIBILITY OF DIRECT COSTS

Costs incurred as a direct result of implementing the minimum environmental requirements (e.g., among others, relating to procurement of 'greener' items, waste management or purchase of clean energy) will be eligible as long as they are justified and provide a demonstrable environmental benefit in line with the minimum requirements.

[3] https://logcluster.org/document/guidance-note-regulatory-legislative-frameworks-humanitarian-workers

Regarding the costs related to technical expertise and capacity building support, general capacity building (e.g., quality training, management training, revision of procurement guidelines etc.) is not eligible as a direct cost but reserved for indirect costs, which are still capped at 7%[4]. Only costs related to technical expertise linked to a specific activity of the action might be considered as a direct cost (e.g., technical expertise for installing solar panels).

The percentage of direct support costs can sometimes be higher for actions complying with the environmental requirements, if well justified in the proposal (e.g., very specific expertise directly linked to the greening action result, such as the installation of solar panels or monitoring water extraction). It is not possible to define the exact percentage increase as it is organisation and context-specific.

5.2. ADDITIONAL COSTS

For measures that are costlier but do not lead to cost savings over time yet still provide an environmental benefit in line with the minimum environmental requirements, DG ECHO will trial an "up to 10% more expensive" cap. Such measures that would entail additional costs could be e.g. the implementation of waste management systems, purchase of organic fertiliser, or hiring of experts for a specific environmental activity. This does not mean that DG ECHO will be requiring 10% of the individual project budget to be spent on greening nor that partners have fulfilled their environmental obligations if 10% of the budget is marked as 'green'. Not every project that complies with the requirements will be 10% more expensive; as stated above, not every environmental measure requires additional investments but rather a new way of working. Earmarking therefore is not the intention. It is rather an effort to demonstrate flexibility on the side of DG ECHO to not penalise more environmentally sustainable projects because they might be more expensive. Yet, to avoid greenwashing, DG ECHO is trialling this cap to give as guidance to ECHO staff when evaluating projects and is also communicating this to partners for transparency.

5.3. RETURN ON INVESTMENT

Projects will be evaluated not only based on the price and modality choice, but also taking into consideration their lifespan, adequacy, including technical specifications, and their impact on the environment, taking into account also the potential future costs that an action could entail (i.e., "return on investment").

Particularly in crises where it is appropriate to engage in multi-year interventions (i.e. 24 months and longer), projects will be evaluated and selected based not only on the value for money in the short term, but also in the long term. For example, replacing a diesel generator with solar panels will be more expensive in the short term but lead to cost savings over just a few years. Similarly, the purchase of more durable items will also lead to cost savings over time even though they are initially more expensive to buy than their less durable alternatives. Partners should provide an estimated model for the expected return on investment when submitting such actions to DG ECHO. Where there is a demonstrated return on investment, the initial investment could be more than the 10% mentioned above, but then the partner would have to demonstrate clearly the cost saving potential over the lifecycle of the purchased items/product.

DG ECHO accepts potential additional stand-alone environment-related costs within action budgets, as long as they are justified and provide a demonstrable environmental benefit in line with the minimum requirements. The budget can be revised for some projects with environmental potential based on a thorough review by DG ECHO staff. Seeking advice from DG ECHO, particularly on the budget, is strongly recommended before submitting a project. DG ECHO's Thematic Expert on Environment should be included in these exchanges.

6. MONITORING, REPORTING AND EVALUATION

Partners should use the existing e-Single Form to submit information regarding how a project has addressed the relevant minimum environmental requirements. Information on this should be provided at proposal stage, at implementation stage and final reporting stage. Continuous monitoring of potential environmental impacts is important. This is because environmental impacts of an action can evolve over time as the context evolves and some of the measures might need to be adapted. In case certain activities are modified during the project duration, it is crucial that these new activities are developed in line with the minimum environmental requirements as well.

In line with the e-Single Form and the accompanying Single Form Guidelines, revised in 2022 to reflect the incorporation of environmental considerations and the minimum environmental requirements, partners should be including information on environmental considerations in the following sections:

[4] To be noted that for net cash transfers of EUR 25 million and above, DG ECHO's strong recommendation is for partners to reduce the indirect costs through a multi-tiered system. See Annex 1 of DG ECHO cash policy: https://ec.europa.eu/echo/files/policies/sectoral/thematic_policy_document_no_3_cash_transfers_en.pdf

4.2 Problem, needs and risk analysis

In this section the partners should outline the main issues linked to environmental degradation, which should then be addressed in the response analysis section. It is important to differentiate between climate induced disasters and issues linked to environmental degradation due to the humanitarian response. The later should be covered for the purpose of 'greening' actions. These issues may include environmental issues linked to deforestation due to gathering of firewood or for the purpose of building shelters, water scarcity and contamination, solid and healthcare waste accumulation linked to humanitarian sites and settlements and similar. In the cases where environmental screenings/assessments are mandatory (Shelter & Settlements and WASH sector specific interventions and for site/settlement closure/decommissioning) the implementation of these screenings/assessments should be reported here, and the detailed results and report attached as a technical annex. Identifying the risks facilitates the request for modification and/or amendment. It is important to keep in mind the potential negative impact beyond the timeframe of the activity and to consider the entire lifecycle of the components.

4.3 Response analysis

This is the first section where partners should include a mention about whether the project responds to the relevant minimum environmental requirements or not, and provide a short summary of the actions planned. This will be the first section that DG ECHO staff look at to understand whether or not the requirements were taken into account and if environmentally sustainable practices in the delivery of humanitarian assistance were accounted and planned for in the response. The information provided in this section should be short and concise. Detailed description of the activities will need to be provided under section 7.3

7.3 Results

Specific environmental considerations taken into account in the proposal (how activities have been adapted to be more environmentally sustainable) as well as standalone environmental activities (if any) are to be described under the Results section. Since Environment and Greening are not recognised as sectors per se and are considered a mainstreaming issue, compliance with specific minimum requirements and the activities linked to them have to be integrated under the Results of other sectors or sub-sectors and specified in detail under one or more activities (as deemed necessary) in the Activity Description paragraph. Environmental actions linked to a dedicated budget have to be accompanied with a custom KRI.

8. Resilience Marker – Question 2

The Resilience Marker serves to assess the extent to which humanitarian actions funded by DG ECHO integrate resilience considerations. The revised Resilience Marker now includes the environmental dimension. Question 2 in particular serves to assess whether the project puts in place measures to mitigate any negative effects of its own activities so that they do not contribute to climate change (e.g., limiting carbon emissions), or environmental degradation (by adopting environmentally sustainable practices in the delivery of humanitarian assistance) or conflict, and do not intensify existing vulnerabilities or create new ones. If no environmental considerations were taken into account, the answer given to this question both by the partner and DG ECHO should be 'NO', even if the other dimensions of this question are fulfilled.

While the overall score of the RM will not affect funding eligibility, compliance with the minimum environmental requirements will weigh into the appraisal of projects.

9.2 Monitoring of the action

Partners are expected to describe the monitoring mechanisms in place to control the progress and achievements (type of monitoring, frequency, tools, staff profiles) including on the project's environmental performance in line with the minimum environmental requirements (impacts and corresponding mitigation measures). The partner should briefly describe how the measurement and supervision of the environmental performance of an action will be carried out.

10.3 Logistics

The partner should provide information relating to how the project has incorporated the relevant minimum environmental requirements from the Cross-cutting chapter on sustainable supply chains and logistics. In case the environmental dimension of the procurement and delivery was already covered in the above sections, this is optional in this section.

6.1. MONITORING OF COMPLIANCE AND EVALUATION ON THE SIDE OF DG ECHO:

DG ECHO will primarily use the information submitted in the s-Single Form at proposal, interim and final reporting stages as the basis for monitoring. This will be complemented with monitoring of compliance through field missions, as is standard practice in DG ECHO.

Partners are encouraged to discuss openly with their country technical assistants and Thematic Experts (TEs), including the Thematic Expert on Environment, throughout project implementation regarding the challenges faced and any changes that need to be implemented to align better with the minimum environmental requirements. Since 'greening' is a mainstreaming issue, Thematic Experts across the different sectors that DG ECHO supports will have to also oversee compliance with the minimum environmental requirements, in particular for their sector-specific requirements, in cooperation with the Environment TE who performs a support and advisory function and ensures overall coordination.

DG ECHO's NGO partners are subject to audits. Auditors will be duly informed that the need to comply with the minimum environmental requirements was introduced as of 2023. The above-outlined financial considerations relating to greening will also have to be included.

In cases where a justification is needed, as it is in case of using generators (instead of renewable energy sources) and in the case of water-trucking (instead of providing water through more sustainable modalities) prior approval from DG ECHO will be needed at procurement phase.

DG ECHO'S GUIDING ENVIRONMENTAL PRINCIPLES

The following principles underpin the implementation of the requirements and recommendations, and thus the implementation of environmentally sustainable humanitarian projects and programmes. The guiding environmental principles represent key areas of intervention for implementing environmentally sustainable humanitarian programmes and were used as a base to develop the minimum environmental requirements.

GHG EMISSION MITIGATION

- Assess and systematically monitor the emissions related to humanitarian projects through a carbon accounting exercise that includes all direct and indirect emissions
- Implement Greenhouse Gas (GHG) reduction strategies targeting largest reduction opportunities and cut down emissions related to humanitarian projects throughout their life-cycle

WASTE MANAGEMENT

- Ensure solid waste is collected and transferred in treatment and/or appropriate disposal facilities
- Reduce the solid waste burden and promote reuse, re-purpose and recycling
- Ensure sanitation and other liquid waste is managed, collected, transported and disposed without contaminating water bodies and natural areas

WATER AND WASTEWATER MANAGEMENT

- Preserve water sources and avoid over-extraction
- Ensure wastewater does not pose a health or environmental hazard and dispose it accordingly

ENERGY

- Invest in clean energy solutions, based on renewable sources
- Improve access to sustainable and clean energy
- Limit overall energy consumption and improve energy efficiency

SUPPLY CHAIN AND MATERIAL EFFICIENCY

- Promote the use of low carbon technologies and processes
- Manage natural resources effectively and ensure sustainable supply chains
- Avoid single use plastic and favour materials with a low carbon footprint

BIODIVERSITY, NATURAL HABITAT AND LAND PRESERVATION

- Rely and/or upgrade existing infrastructure, facilities and housing stock where feasible
- Avoid uncontrolled deforestation and favour sustainably harvested and verified timber
- Protect, restore and improve natural areas
- Support low intensity, regenerative and sustainable agriculture

LOCALISATION OF RESOURCES

- If their environmental sustainability and quality can be ensured, favour locally and nationally-produced items, including food
- Encourage local actors taking ownership and driving efforts across policy and programmes
- Promote the use of traditional and environmentally conscious techniques and locally sourced sustainable materials

CROSS-CUTTING

1. PROJECTS SHOULD BE CONCEIVED WITH A LONGER-TERM VISION AND ENCOURAGE LINKAGES WITH DEVELOPMENT AND PEACE ACTORS

Mozambique: one year after cyclone Idai. Photo credit: European Union

DG ECHO adheres to the Humanitarian-Development-Peace (HDP) nexus approach and the idea of engaging with development and peace actors throughout humanitarian operations.

Engaging with development and peace actors throughout humanitarian operations can increase the operations' effectiveness, promote resilience and contribute to reducing the environmental impact of aid. Considering the resilience-building co-benefits of addressing potential environmental impacts of humanitarian programmes, "greening" humanitarian aid is a very suitable topic for setting the necessary foundations for the HDP nexus. In contexts where they are present, linking up with development actors can make the implementation of some of the other minimum environmental requirements less of a challenge for humanitarian actors in view of already-overstretched humanitarian budgets. Moreover, sound management of natural resources and minimisation of environmental impacts can serve peacebuilding objectives as many conflicts are directly or indirectly triggered by scarce natural resources.

REQUIREMENTS:

- Set the necessary foundations for the HDP nexus to ensure an access to services as early as possible and avoid environmental impacts associated with some of the temporary solutions implemented during the acute emergency phase.

- Mainstream awareness on reduction of environmental impacts and climate change adaptation across the regular activities that support project implementation activities. Where possible, this should be a mutual learning process – an exchange with affected populations to understand how they understand environment, climate change and the link to livelihoods and environmental threats.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE HDP NEXUS

Setting the necessary foundations for the HDP nexus

The requirement focusses on linking up with development and peace actors early on in the response, as well as existing services (e.g. health, education, protection, housing, water, social services), as long as they are functional and as much as the context permits. Linkages between cash transfers and social protection systems are key in this regard.

This can mitigate the environmental impacts associated with some of the temporary solutions implemented during the acute emergency phase. For example, water trucking or temporary shelters tend to persist well beyond the acute emergency phase in programmes without a more long-term vision.

This concept is not new to DG ECHO: all humanitarian projects funded by the European Union (EU) have to apply the Resilience Marker[5], which ensures that the interventions reduce risks, conflicts, and vulnerabilities, and strengthen people's coping capacities to minimise humanitarian needs. Question 4 in particular relates to the extent to which a partner coordinates with local authorities and links up with on-going development interventions.

DG ECHO staff can support with making the links with development actors and relevant national and local authorities through the Delegations of the EU.

To avoid unintended negative consequences and maximise positive effects across the HDP nexus, all interventions should be conflict sensitive, based on a conflict analysis, follow the “do no harm” principle, and be designed and implemented taking local approaches, capacities, and markets into consideration through an engagement with local actors (see chapter on Protection mainstreaming). Consideration of cross-cutting issues such as gender, age, disability inclusion and protection mainstreaming should also be applied throughout the process, starting with a gender and age analysis (see chapter on Protection mainstreaming).

Below are examples of recommended steps to follow to operationalise the HDP nexus, beyond just environment-related interventions:

- *Joint context analysis:* The joint analysis is a joint risk-informed, gender- and age-sensitive analysis of root causes and structural drivers of conflict, as well as positive factors of resilience and the identification of collective outcomes incorporating humanitarian, development and peace actions. It should consider environmental pressures, environmental organisations present in the area and seek to include input from affected and vulnerable populations, host governments and authorities as appropriate, civil society and other donors (see also cross-cutting chapter on Protection mainstreaming). Such a joint context analysis might reveal environmental issues related e.g. to lack of access to clean energy, which development actors can help address in a more viable way through their long-term funding.
- *Joint planning:* based on the joint analysis, joint planning ensures coherence, complementarity and coherence among all actors involved so that results can be more effectively achieved. The concrete product of the joint planning is the development of a common HDP nexus action plan.
- *Implementation/programming phase:* should also be multi-stakeholder and seek to include input from affected and vulnerable populations, host government and authorities as appropriate, civil society and other donors, as the two steps above. Based on each actor’s capacities and resource availabilities, a clear division of labour should be elaborated from the beginning of the process to ensure a coordinated implementation of the HDP nexus action plan. It is important to provide appropriate resourcing to leadership for cost-effective coordination across HDP pillars. Information should be accessible to all communities, including hard to reach communities and people with disabilities.
- *Financing modalities:* Funding modalities will follow each actor’s specific modalities and instruments and should enhance coordination as well as continuity of funding. It is encouraged to find appropriate solutions: for example, pooled funding mechanisms can be considered in some contexts. One example is the EUTF for Africa covering the Sahel and Lake Chad, the Horn of Africa and North Africa.
- *Monitoring and evaluation mechanisms, lessons learnt and good practice:* In order to determine whether the joint analysis remains valid, it is recommended that monitoring mechanisms are established, including relating to environmental issues. The monitoring and evaluation mechanisms should again be multi-stakeholder and seek to include input from affected and vulnerable populations, host government and authorities as appropriate, civil society and other donors.

[5] Resilience Marker: General guidelines. Available at: https://ec.europa.eu/echo/document/download/27e600f5-4f4e-4fb9-b5cf-20a2f51f18f5_en

Mainstreaming environmental and climate change awareness

The requirement focusses on mainstreaming environmental and climate change awareness across the regular activities that support project implementation, both for organisation staff and the affected populations.

The level of awareness, and consequently behaviour, of staff and affected populations affects the extent to which environmental outcomes of a project will be reached. Incorporating context-specific messages on environmental protection and climate change mitigation and adaptation as part of the regular communication and project management activities that take place as part of project implementation can increase awareness and therefore improve the chances of the environmental requirements being achieved. Such regular activities include:

- trainings for staff
- campaigns targeting affected populations
- project and stakeholder meetings.

Messages can be both on why preserving the environment is beneficial, also for affected persons (see chapter on Protection mainstreaming), as well as how individual behaviours (both of affected persons and organisations' staff) can contribute to environmental protection. Environmental messaging should be contextualised to address the key local environmental hazards and threats, and should be directly relevant to the population. For example, education on the dangers of burning plastic in locations with poor waste management can save lives. At a minimum, the messages should inform why organisations are implementing environmental measures in the project or adapting projects to be more environmentally sustainable, in line with DG ECHO's requirements especially where this involves new behaviours and/or items.

Such mainstreaming should demonstrate that environmental issues are not separate, but rather interconnected with all other activities. Where possible, this should be a mutual learning process – an exchange with affected populations – to understand how they understand environment, climate change and the link to livelihoods and environmental threats. Affected populations may articulate environmental and climate change impacts in the context of negative economic, health and other impacts, care must be taken to understand and document the underlying environmental and climate change drivers of these impacts. This would complement the environmental education children would receive where Education in Emergencies programmes are implemented (see chapter on Education in Emergencies).

Awareness and training activities should include a wide range of participatory approaches to encourage the direct involvement of the target audience (displaced as well as host communities, local authorities, community leaders or camp committees, etc.) and focus on the links between environment and protection of the population. Special attention is needed to identify groups at risk who face protection risks directly linked to activities related to natural resources, such as the collection and provision of fuel, wood, water or performing other functions.

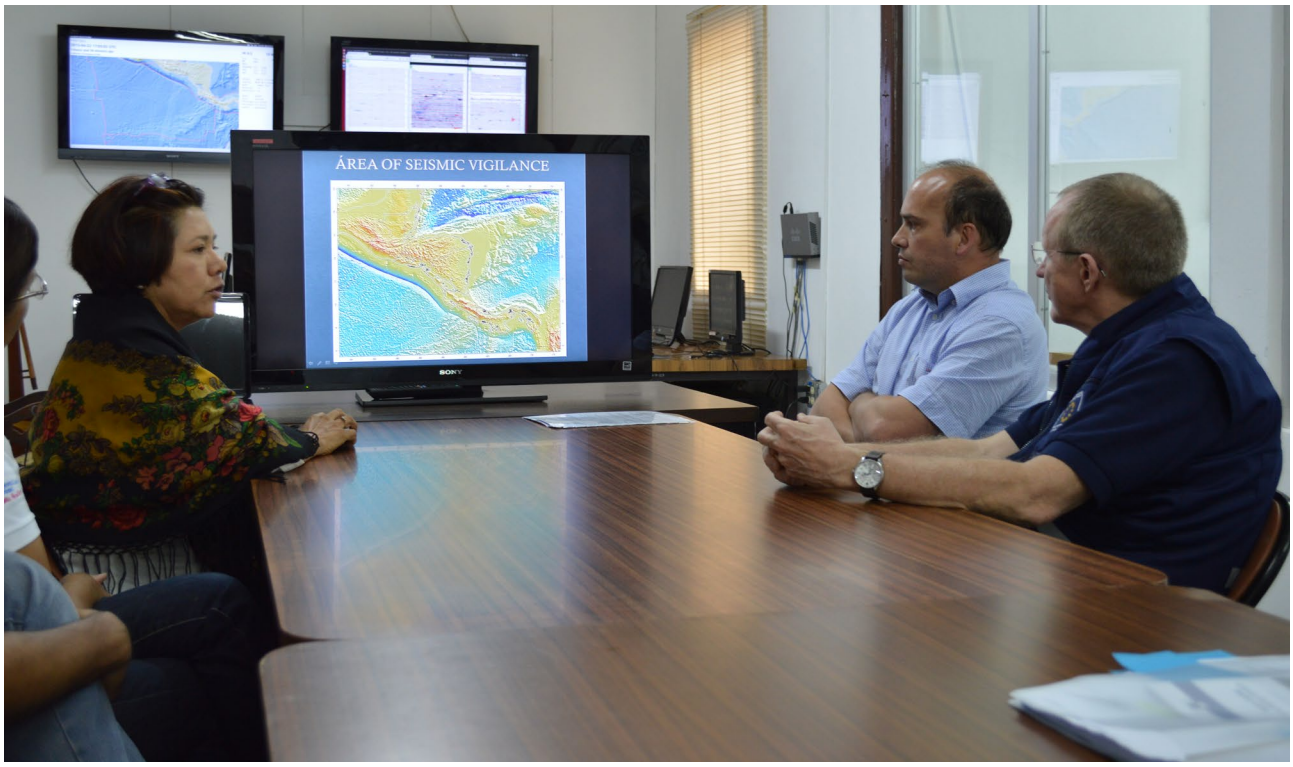
USEFUL LINKS AND RESOURCES:

Oxfam, 2021, Transforming the Systems that Contribute to Fragility and Humanitarian Crises - Programming across the triple nexus: This briefing paper aims to identify the tensions and dilemmas faced when programming across the nexus and sets out new policy to address them.

OECD/DAC, 2022, Recommendations on the Humanitarian-Development-Peace Nexus: The recommendations aim to provide a comprehensive framework that can incentivise and implement more collaborative and complementary humanitarian, development and peace actions, particularly in fragile and conflict-affected situations.

Council Conclusions, 2017, Operationalising the Humanitarian-Development Nexus: conclusions on operationalising the Humanitarian-Development Nexus, as adopted by the Council at its 3540th meeting held on 19 May 2017.

2. PROJECTS SHOULD BE RISK-INFORMED



A successful EU-funded project on disaster risk reduction in Nicaragua. Photo credit: EU/ECHO/R. Silva

In line with DG ECHO's Disaster Preparedness approach and subsequent Guidance Note[6], as well as Protection Thematic Policy[7], projects funded by DG ECHO should be risk-informed.

REQUIREMENTS:

- Ensure that activities are based on integrated risk analysis and planning. Do not aggravate risks or vulnerabilities and work towards reducing them to the extent possible.
- Acknowledge that environmental degradation is a risk driver, together with natural hazards, threats, climate change and violence/conflict – include context-specific environmental degradation amongst the risks assessed.

RECOMMENDATIONS:

- Prepare or seek out existing environmental profiles (which are evidence-based and accurate) of the given site of intervention to inform preparedness measures and to support informed decision-making of humanitarian interventions to respond and recover during and after a disaster/crisis.
- Integrate natural resource management into the project frameworks alongside disaster preparedness objectives.

[6] https://ec.europa.eu/echo/document/download/13015e8b-acaf-4d8a-b665-d2aab142c97b_en?filename=dg_echo_guidance_note_-_disaster_preparedness_en.pdf

[7] https://civil-protection-humanitarian-aid.ec.europa.eu/system/files/2016-06/policy_guidelines_humanitarian_protection_en.pdf

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE RISK-INFORMED APPROACH

Integrated risk analysis and planning

DG ECHO's risk-informed approach prescribes that all humanitarian actions are designed based on an assessment and understanding of risks relevant to the context of intervention and are implemented to respond to and possibly reduce these risks, with the final objective of contributing to reduce root causes of risks and vulnerabilities, in line with the nexus approach. This can be done either at project or programme level. For details on how to, see Chapter 3 of DG ECHO's Disaster Preparedness Guidance Note[8].

Apart from the overarching policy imperative, reducing risks related to disasters (including induced by natural hazards, violence and conflict) can be considered an environmental measure in itself, especially when risk and vulnerability mitigation measures include the implementation of nature-based solutions. Conversely, disasters may have a profound, protracted, long-lasting impact on existing natural resources, such as surface and underground water bodies, soil, vegetation cover. Sudden-onset disasters caused by natural hazards such as storms, floods, earthquakes or tsunamis also increase the need for waste management, especially of debris. A poor risk analysis and not designing projects that take into consideration current and future risks can lead to further and increasing risks, and the loss of lives and livelihoods, and damage. Reducing the exposure of people and assets, based on a sound risk analysis helps break the response-disaster-response cycle. Fewer disasters also mean less relief items distributed, less new shelters built, and less carbon-intensive emergency response travel and shipping, all of which have their own environmental impacts. Ideally, such a risk analysis should be linked with the other type of risk analysis of a project, all captured in section 4 of the e-Single Form.

At the same time, any projects, including any that are adapted to be more sustainable in line with the minimum environmental requirements, should not aggravate other risks or vulnerabilities. This means that any new solutions implemented should create a net positive impact with respect to reducing vulnerability to natural or man-made hazards.

Environmental degradation as a risk driver

Building on the above, DG ECHO considers environmental degradation both as a risk multiplier and risk driver, to be considered together with other human or natural-induced hazards, including climate change. Degraded ecosystems jeopardise livelihoods of people relying on those ecosystems to survive, which can also precipitate conflict risks. Context specific environmental degradation as well as climate change trends should therefore be included amongst the risks assessed. This can be for example:

Slow-onset extreme weather events exacerbated by climate change:

- desertification,
- acidification of the ocean
- salinisation of soils

Rapid-onset extreme weather events exacerbated by climate change:

- tropical storms
- floods
- forest fires

Environmental degradation linked to the activities implemented during a humanitarian response:

- natural resource depletion (e.g., deforestation, overexploitation of aquifers)
- air, water, or land pollution,
- erosion
- other.

[8] https://ec.europa.eu/echo/document/download/13015e8b-acaf-4d8a-b665-d2aab142c97b_en?filename=dg_echo_guidance_note_-_disaster_preparedness_en.pdf

Question 1 of the revised Resilience Marker[9] in the e-Single Form includes this dimension and the partner should reflect the extent to which this was done therein. The Resilience Marker Guidelines[10] explain how to fill it in. Section *3.2.1 Risk Assessment* of the Disaster Preparedness Guidance Note[11] provides more information on how to adequately incorporate environmental information into the risk assessment.

Since environmental degradation is a risk multiplier, addressing environmental impacts through the implementation of the minimum environmental requirements can reduce secondary hazard and conflict risks and vulnerabilities and contribute to building resilience, ultimately contributing to reducing longer-term needs. Question 2 of the Resilience Marker[12] addresses this aspect, asking to what extent the environmental impacts of a project were addressed.

Environmental profiles/info sheets

Addressing environmental concerns as part of preparedness planning lays the foundation for their integration into humanitarian action (see Section *6.11.1 Climate and environmental resilience interventions* of the Disaster Preparedness Guidance Note[13]).

In order to facilitate this, DG ECHO recommends that partners seek out existing environmental profiles or information sheets on the given site of intervention for easy reference. While these are not mandatory, this would facilitate informed decision-making in order to be ready for more environmentally sustainable response interventions once a disaster or crisis strikes. Environmental information sheets outline the given environmental context and help identify the available risk sensitive and more environmentally sustainable response options for that area.

Environmental information sheets should be evidence-based and accurate, to the extent possible, such as those made available by the Global Shelter Cluster Environment Community of Practice[14]. Where those do not exist, partners can prepare such profiles in between disasters, although it is not mandatory, drawing on local environmental management plans, government natural resource management and climate change adaptation plans where those exist. The profiles should be prepared where possible in cooperation with local governments, local energy and water providers, waste managers, environmental organisations, academic or research bodies present in the area, and the local community. Funding from the Disaster Preparedness Budget Line under the *Climate and Environmental Resilience* priority can be used to develop this (as part of DG ECHO's regular Humanitarian Implementation Plan funding cycle).

Environmental information sheets can contain the following information, where available:

- The environment, violence, conflict and hazard context
- Key actors
- Environmental regulatory requirements and institutions
- Ecologically Protected Areas and areas of environmental and cultural sensitivity/importance
- Risk maps
- Local/national environmental management & natural resource management plans
- Guidance on conducting rapid environmental impact assessments in that context
- Environment & site selection and site planning issues in that area
- Security of tenure and environment in that area
- Green building practices and most common building materials, if the response includes building and/or construction components
- Green logistics, supply chains & procurement practices

[9] "*Do the proposed project activities adequately reflect an analysis of risks and vulnerabilities - including conflict, environment and climate risks?*"

[10] Resilience Marker Guidelines: https://ec.europa.eu/echo/document/download/27e600f5-4f4e-4fb9-b5cf-20a2f51f18f5_en

[11] https://ec.europa.eu/echo/document/download/13015e8b-acaf-4d8a-b665-d2aab142c97b_en?filename=dg_echo_guidance_note_-_disaster_preparedness_en.pdf

[12] "*Does the project adopt a "do no harm and conflict sensitivity" approach, include specific measures to ensure that the identified risks and any environmental impacts of the project are addressed to the extent possible, and are not aggravated by the action?*"

[13] https://ec.europa.eu/echo/document/download/13015e8b-acaf-4d8a-b665-d2aab142c97b_en?filename=dg_echo_guidance_note_-_disaster_preparedness_en.pdf

[14] https://www.sheltercluster.org/ar/node/17317 (add more as the Global Shelter Cluster project progresses)

- Key considerations for energy and fuel
- Debris and waste management, recycling, reuse and repurposing
- Disaster and climate risk management, with adaptation and mitigation co-benefits, and the use of nature-based solutions

Integrating natural resource management

Another way to contribute to environmental resilience is through investing in nature-based solutions and the restoration of degraded ecosystems as part of preparedness and recovery interventions, with particular attention to displaced and at-risk populations dependent on natural resources for their livelihoods. For more details see *Section 6.11.1 - Climate and environmental resilience interventions* of the Disaster Preparedness Guidance Note[15]. These interventions straddle humanitarian aid and development cooperation as they are by nature a more long-term undertaking. As such, they require cooperation between humanitarian and development actors and are therefore optimal as a way for implementing the nexus approach.

** For information on Community-based environmental and forest management plan refer to the CCCM chapter*

USEFUL ENVIRONMENTAL CHECKLISTS AND SCREENING/ASSESSMENT TOOLS:

The Resilience Nexus, GOAL ARC-D toolkit: the toolkit consists of a two-part disaster resilience survey, a user guidance manual and software and is used to determine the level of a community's disaster resilience.

[15] https://ec.europa.eu/echo/system/files/2021-04/dg_echo_guidance_note_-_disaster_preparedness.pdf

3. PROJECTS SHOULD BE IMPLEMENTED THROUGH A PROTECTION MAINSTREAMING, DISABILITY, GENDER AND AGE INCLUSION LENS AND TAKING INTO ACCOUNT THE POTENTIAL OF USING TRADITIONAL ECOLOGICAL KNOWLEDGE

Syria: Assisting refugees with disabilities.. Photo credit: HI/Frederik Buyckx

Protection mainstreaming in all humanitarian actions, regardless of the sector, is key. In line with IASC Principals' statement on the Centrality of Protection[16] and DG ECHO's Humanitarian Protection policy[17], Gender policy[18], and Inclusion of Persons with Disabilities operational guidance[19] all DG ECHO-funded projects, regardless of the sector, should incorporate protection principles and the relevant inclusion of gender, age and disability considerations.

REQUIREMENTS:

- Ensure that all environmental requirements are applied in line with protection mainstreaming, gender and age, and disability inclusion principles to ensure that most vulnerable people receive the support they need. Avoid setting up programmes with environmental objectives in ways that risk harming affected people's safety and dignity.

- Identify, protect, preserve and promote the traditional ecological knowledge, practices, customary sustainable use and expertise of indigenous and local communities. Acknowledge and learn from the environmental examples that encompass practical ways to ensure environmental sustainability..

[16] https://interagencystandingcommittee.org/protection-priority-global-protection-cluster/documents/iasc-policy-protection-humanitarian-action
[17] https://ec.europa.eu/echo/files/policies/sectoral/policy_guidelines_humanitarian_protection_en.pdf
[18] https://ec.europa.eu/echo/files/policies/sectoral/gender_thematic_policy_document_en.pdf
[19] https://ec.europa.eu/echo/files/policies/sectoral/doc_echo_og_inclusion_en.pdf

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AIMED AT ENSURING PROTECTION MAINSTREAMING, DISABILITY, GENDER AND AGE INCLUSION AND THE USE OF TRADITIONAL ECOLOGICAL KNOWLEDGE

Protection mainstreaming

In line with DG ECHO's Humanitarian Protection policy[20], all environmental requirements should be applied in line with the protection mainstreaming principles. The four pillars of protection mainstreaming are: i) prioritisation of safety and dignity and avoiding causing harm; ii) securing meaningful access, iii) participation and empowerment, and iv) accountability. Certain humanitarian responses can unintentionally result in behaviours that both damage the environment and lead to protection concerns. For instance, over-exploitation of the natural resources in the area (e.g., wood, water, soil, sand) can exacerbate intra and intercommunal conflicts or not addressing peoples' energy needs for cooking or other activities as part of humanitarian response not only can lead to environmental degradation, but it is also a major protection risk. This is because the most vulnerable people are exposed to risk of violence while journeying far to collect firewood for fuel or to find energy sources. Therefore, introducing measures that are more environmentally sustainable is also a mean to reduce protection concerns.

At the same time, actions that are implemented to reduce the humanitarian environmental footprint should not perpetuate vulnerabilities nor undermine safety and dignity of different members of the affected community, nor exclude any group from meaningful access. For instance, in a project that reuses or repurposes waste, consideration needs to be made of the possible risk of chemical contamination or release from the waste products and if so, such waste should be handled and appropriate protective equipment provided.

A risk analysis should be carried out to identify the most vulnerable and marginalised populations and ensure that also their specific needs are meaningfully integrated throughout the project cycle: from decision-making regarding the priority needs and the (types of) actions to be developed, implemented and monitored. Humanitarian actors should enable all identified groups of the affected populations to play an active role in the decision-making processes that affect them through the establishment of clear guidelines and practices to engage them appropriately and ensure that the most marginalised and affected are represented and have influence.

Furthermore, the views of affected populations to improve policy and practice in programming should be actively sought, ensuring that feedback and complaints mechanisms are streamlined, appropriate and robust enough to deal with (communicate, receive, process, respond to and learn from) complaints about breaches in policy and stakeholder dissatisfaction[21]. This will enhance the acceptance and ownership of the solutions provided, the overall project success, and the sustainability of the action in the longer term.

This active participation also encourages that any new, more sustainable and environment-friendly solutions proposed are adapted to the needs of affected populations and different community subgroups. The aim is to prevent the delivery of ill-adapted items that would not be used and would become waste, while also compromising people's basic needs. For instance, when projects impact on or relate to local management and use of natural resources, the affected communities, including indigenous, marginalised and vulnerable groups, should also be at the centre of those decisions (DG ECHO should not fund extractive activities, e.g., mining or logging).

This is not only about participation, empowerment and context-adaptation, but it also strengthens DG ECHO's accountability to affected populations. DG ECHO would like to see the inclusion of such consultations in the project's work plan, conducted throughout action's implementation. The outcomes of feedback and consequent correction measures will need to be reflected in intermediate and/or final reports. These guidelines do not require partners to fund specific capacity exchange with local actors on environmental issues, but it stands essential to systematically integrate environment considerations in all discussions with the affected communities.

** For additional information refer to the Protection chapter.*

Use of traditional ecological knowledge (TEK)

In particular linked to the participation and empowerment of local communities, humanitarian actors should ensure to identify, protect, preserve and promote the traditional ecological knowledge (TEK), practices, customary sustainable use and expertise of indigenous and local communities. They should acknowledge and learn from the environmental examples that encompass practical ways to ensure environmental sustainability._When designing, implementing, and monitoring humanitarian actions, particularly actions with impact on or related to local management and extraction of natural resources, it is important to identify, protect, preserve, and promote the traditional ecological knowledge of indigenous and local communities. This knowledge can help make projects most adapted to the given context.

[20] https://ec.europa.eu/echo/files/policies/sectoral/policy_guidelines_humanitarian_protection_en.pdf

[21] https://www.globalprotectioncluster.org/themes/protection-mainstreaming/

"Traditional ecological knowledge refers to the knowledge, practice, and belief concerning the relationships of living beings to one another and to the physical environment, which is held by peoples in relatively nontechnical societies with a direct dependence upon local resources" (Whyte, 2013[22]).

The above-mentioned consultations with the host communities, including indigenous groups, could serve the purpose of learning from TEK. Learning from TEK and environmentally sustainable local practices can be a way also to promote nature-based solutions and low-tech solutions in humanitarian actions, as well as mutual learning across affected populations. It is important to remember however that not all local practices are necessarily more environmentally sustainable – there are numerous examples of local practices that are harmful to the environment, for example intensive agriculture, mineral over-extraction, logging, burning, and overgrazing. Humanitarian actors should carefully choose and analyse the local practices they will incorporate, to choose and amplify those indigenous and local practices that efficiently care for the environment.

Gender and age

Natural disasters and human-made crises, and consequent environmental degradation, are not gender neutral — they have a different impact on different gender and age groups. Thus, in order to respond effectively to the differentiated needs of various gender-related groups, humanitarian actions must take considerations of gender and age into account as reiterated in DG ECHO Gender policy. This requirement is not new, as DG ECHO funded projects are assessed against the Gender and Age Marker. It must also be applied to actions that are designed with a more environmentally sustainable outlook, in line with the minimum environmental requirements.

Linked to the above, proper consultations of all gender and age groups are crucial to this process to avoid that any of those is excluded from meaningful participation in decision-making processes due to gendered roles. Hence, interventions around sound management of natural resources, environment and climate change adaptation provide significant opportunities to empower different gender and age groups to be active agents for peace and durable solutions.

Disability inclusion

Disability Inclusion in humanitarian action remains insufficient. Due to discrimination and environmental, physical, economic and social barriers, people with disabilities are more likely to be excluded in emergency responses and humanitarian services. They also face additional threats and vulnerabilities. In line with DG ECHO's operational guidelines on disability inclusion, the specific needs of disabled people should be taken into consideration in all projects supported by EU humanitarian aid, including those that are designed with a more environmentally sustainable outlook, in line with the minimum environmental requirements.

A comprehensive analysis of risks that includes the identification of barriers that hinder persons with disabilities from accessing and participating in humanitarian assistance and protection is essential. These barriers lead to exclusion, which increases the likelihood of persons with disabilities to face threats and vulnerabilities at a higher level than the rest of the crisis-affected population. In the same vein, it is equally important to identify enablers: these are external factors facilitating access and participation in society for persons with disabilities on equal basis with others and which can be used to overcome barriers.

USEFUL LINKS AND RESOURCES:

UNEP, UN Women, UN PBSO, UNDP, 2013, Women and Natural Resources-Unlocking the Peacebuilding Potential: This report analyses the reasons behind this discrepancy, its implications for long-term peace and development and suggests some solutions.

ISDR, 2008, Indigenous Knowledge for Disaster Risk Reduction: Good practices and lessons learned from experiences in the Asia-Pacific region

inSIGHT, 2020, A Participatory Game for Enhancing Disaster Risk Governance and sustainable management of natural resources: Using this tool will enable local governments, organisations and individuals, to promote the Sustainable Development Goal 13 on Climate Action, by recognising the traditional knowledge and practices of a community that contribute to the sustainable management of natural resources in a given context.

[22] Whyte, K.P. On the role of traditional ecological knowledge as a collaborative concept: a philosophical study. Ecol Process 2, 7 (2013). https://doi.org/10.1186/2192-1709-2-7

4. PROJECTS SHOULD PROMOTE SUSTAINABLE MANAGEMENT OF SOLID WASTE AND CHEMICALS

Cash for work: Helping close to 2 000 families in Syria to get by. Photo credit: People in Need

Solid waste management (SWM) involves the collection, storage, transportation, processing, treatment, reuse or recycle options and final disposal of waste. Safe management of solid waste is critical for public health, as its uncontrolled disposal could forge the spread of diseases, pose a fire risk as well as contaminate water supplies and soil, and block watercourses, causing flooding. The areas where efforts to ensure more sustainable SWM should be encouraged include, harmonisation of processes for humanitarian solid waste management; better communication to change perceptions and behaviour around the ownership of public space and the related waste; and innovative approaches and technology to reduce waste volumes, especially related to packaging.

REQUIREMENTS:

- When implementing any type of project, establish new or upgrade existing practices for environmentally sustainable waste management in collaboration with the WASH sector, the Health sector, the local authorities and other stakeholders. Uncontrolled disposal and low-quality incinerators are not acceptable as they produce toxic emissions and air pollutants.
- Work with local authorities and service providers to integrate waste management into already existing systems and infrastructure and make sure they are not overloaded, particularly in urban areas. Ensure the integrated waste management strategy is in line with local rules and regulations, unless the organisation has its own regulatory frameworks pertaining to waste management that are more stringent.
- Plan supply chain and procurement taking into account waste management options for the waste produced and the related costs, as well as roles and responsibilities for the key stakeholders
- Carry out an assessment based on public health risks on waste generated by households, institutions and existing practices. Assess capacities for local reuse, recycling, re-purposing and composting and support community-based waste management initiatives.

- Based on the assessment outcomes, and following the waste hierarchy (prevent, minimise, reuse, repurpose, dispose) include an integrated solid waste management strategy on a project level, which covers both liquid and solid waste (including replaced old items, expired chemicals, drugs and end-of-life of electronic equipment), and explains why the chosen waste management options were opted for.
- Provide clearly marked as well as fenced storage that include also elements of vector control, for waste generated in communal areas, especially market places, distribution, registration and transit centres, which tend to be the areas with the most important volumes of different types of waste. Organise and maintain regular solid waste management practices from designated public collection points.
- Ensure adequate information is provided to affected persons to ensure that they are aware of the available disposal mechanisms for packaging and NFIs once they have reached the end of their lifespan.
- Organise periodic or targeted sensitisation environmental campaigns with the affected populations and host communities to raise awareness and encourage behaviour change.
- Purchase and stockpiling of chemicals should be done according to a roll out plan, where the quantity of chemical products is accurately calculated taking into consideration the expiry date and the disposal options in the areas of delivery, to prevent expired chemicals building up in contexts where disposal is difficult. Develop and apply a use-tracker of chemicals
- Separate all hazardous waste (including asbestos) which can harm people and the environment. Store hazardous waste securely until it is safely disposed.

** For requirements related to the disposal of medical products and drugs, refer to the Public health chapter of this document.*
*** For requirements related to excreta and wastewater management refer to the Water, sanitation and hygiene chapter of this document.*

RECOMMENDATIONS

- As a priority, establish waste separation systems, preferably at the household and facilities level. This will immediately decrease the volume or waste by removing organic waste that can often be composted locally.
- Undertake a waste audit to understand waste volumes and types, this is necessary to inform the potential for waste recycling and any related livelihoods activities.
- Organise proper reverse logistics to support end-of-life management of items. This can be linked with an income generation activity for affected persons (collection of waste), which could be extended beyond the project cycle in cooperation with private enterprises, or linked to the national level.
- Organise periodic or targeted solid waste clean-up activities in collaboration with the affected community.
- Set up Memorandum of Understanding (MoU) with local partners/NGOs or organisations specialised in waste re-valorisation (repair, repurpose, reuse) different types of unused or disposed items and materials.
- Include safe waste management education into projects, for example on how burning waste, including plastics, produces chemicals that are hazardous to children and pregnant women in particular. All opportunities should be taken to discourage these practices.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING WASTE MANAGEMENT IN HUMANITARIAN RESPONSES

General considerations

Waste management needs to become the responsibility of every humanitarian actor and project. It is far reaching beyond the WASH sector, although strongly supported by it. Unfortunately, the setup of humanitarian sites and settlements is rarely accompanied with a sustainable SWM plan. The low priority given to SWM could be attributed to a combination of factors such as lack of awareness and expertise within humanitarian organisations; lack of equipment; inappropriate coordination mechanisms with local stakeholders and inadequate standards. It is important to change this narrative, because the implementation of a sustainable SWM plan depends upon an efficient operational system being established ideally from the onset of the emergency. If SWM cannot be implemented through a sustainable approach from the onset of the emergency due to volatile conditions, it is important to ensure a phased approach and ensure sustainability in the long term. Upgrading the coverage of waste management as well as services and increasing their efficiency within the humanitarian response is a precondition for improving the environmental quality of humanitarian sites. In line with the World Health Organisation (WHO), it is recommended to carry out an assessment of the waste streams and issues before the implementation of a humanitarian response, to identify local methods of management and disposal of waste, the stakeholders involved in the processes and define a reliable baseline information about the quantities and types of waste being generated. Information about waste generation is crucial when developing a SWM plan and devising waste reduction as well as valorisation programmes. The gathered data will influence the type and size of storage and collection equipment, waste reduction, reuse, recycling and recovery opportunities, potential hazards and treatment options. Key data that should be included:

- Waste production (in kilograms/day/person for domestic waste).
- Average waste composition (% of different waste fractions of plastic, organic waste, paper / carton, metal, etc.)
- Waste density (in kilogram per cubic metre, kg/m^3).
- Additional research for specific, complex processes and collected information on existing waste management practices in the area of intervention and their current state of operation.

Coordination of waste management efforts with local stakeholders and among humanitarian sectors

The involvement and participation of all the stakeholders such as the waste generators, waste processors, formal and informal agencies, non-governmental organisations and financing institutions is a key factor for sustainable waste management. Humanitarian actors should primarily map the main stakeholders and link up humanitarian waste management systems with the practices already in place locally. Identifying existing systems and infrastructure, linking up with local or municipal authorities and service providers and supporting with resources (human resources, logistical, and financial resources) will ensure existing systems and infrastructure can accommodate the extra solid waste burden and do not become overloaded, particularly in urban areas. Furthermore, if local health standards or policies on SWM exist, the humanitarian response should comply with them as quickly as possible. If the local standards are of lower quality compared to humanitarian ones, organisations should take into consideration the higher standards and advocate with the local governments to upgrade the national and local policies. It should be noted that organisations undertaking humanitarian projects in various contexts must take up primary responsibility for the management of waste that are generated as a result of their work, including waste management produced during distribution activities, medical waste produced at health centres and construction waste linked to building activities.

** For considerations regarding incineration standards and vector control, refer to the Public health chapter of this document.*
*** For considerations regarding reverse logistics, refer to the Sustainable Supply Chains chapter of this document.*

Integrated SWM

Integrated SWM uses a combination of waste management techniques to treat different types of waste in an environmentally, financially and socially sustainable way. It should be linked to clear identification of key roles and responsibilities for households, private and public sectors and it should preferably include an agreement that stipulates an effective joint monitoring arrangement to prevent the future build-up of refuse dumps or the indiscriminate disposal of waste. Integrated SWM is based on a waste hierarchy focusing on using the 4 Rs – reduction, reuse, recycle and recovery - while finding a suitable way of dealing with the remaining waste – i.e. disposal. Components of integrated SWM include:

- The complete solid waste management chain, from waste generation, to storage and collection, to transportation and final disposal.
- The inclusion of the reduce, reuse, recycle, recovery approach in the chain.
- Financial sustainability, linkages with policy and legislation, and stakeholder involvement (local community, private as well as public sectors and informal actors).

The advantages of implementing integrated SWM cover:

- Waste reduction and reuse at source – reducing waste at the source and reusing wastes means that less waste has to be collected and managed and that there is less pollution, including from manufacturing and a reduced need to import goods. This in turn has a financial advantage for the local authority/municipality in charge of SWM.
- Waste separation at source – separating reusable and recyclable materials from the rest of the waste and sorting them by type reduces the related costs, determines the final disposal strategies and ensures the recycling material is of a higher quality and has higher financial value.
- Recycling – like reduction and reuse, recycling has benefits outside of the waste management system. Recycling reduces the need to extract raw materials from the ground and consumes far less energy than production from virgin materials. Similarly, to reduction and reusing, recycling ensures less waste is sent to landfill, giving further reductions in pollution.
- Organic waste recovery – composting organic waste is a form of recycling, as the amount of waste sent to landfill is reduced and the compost can be used locally to improve soils and crops (see below).

** For information regarding sanitation waste, refer to the Water, sanitation, and hygiene chapter of this document.*
*** For information regarding medical and other hazardous waste, refer to the Public health chapter of this document.*

Sensitisation/awareness environmental campaigns

The integration of dedicated environmental trainings and sensitisation campaigns in the waste management activities should be prioritised as it can reinforce the environmental and climate awareness of the affected communities, the humanitarian actors and local/national governments and improve the overall outcomes of SWM activities. Sensitisation/awareness campaigns should be a participatory and active processes. The messages of such campaigns can be both on why sustainable waste management and preserving the environment is beneficial in terms of protection and health aspects, as well as how individual behaviours of all the stakeholders involved can contribute to environmental protection and a healthier living environment. It should in all cases include awareness on specific common hazards like the health hazards from burning plastic. Environmental education is essential for generating values for the conservation of natural resources and the environment (see also section on mainstreaming environmental and climate change awareness in the Nexus chapter).

Strategies for the valorisation of waste

Valorisation of waste can potentially provide livelihood opportunities and reduces the amount of waste for disposal. There might be existing local initiatives (mainly of informal nature) linked to SWM and the valorisation of waste, especially in urban areas. The humanitarian actors should carefully assess how to best work with these groups as it can be highly counterproductive to establish new formal waste recycling systems without taking into account systems that already exist. The preferred option is to integrate the informal sector into waste management planning, building on their practices and experience, while working to improve efficiency and the living and working conditions of those involved, including their safety.

The valorisation activities should follow the waste hierarchy – reduction, reuse, recycling, recovery – with the objective to encourage treatment options that deliver the best overall environmental outcome for a specific type of waste. Actions to reduce, re-use and recycle waste are preferred, followed by other recovery options. Reusing is the practice of using an object or resource material again for either the same purpose or another purpose without changing its structure in a significant way. Recycling reduces a product down to its composing materials in order to produce something new out of the material. Recycling can be difficult especially in the early stages of emergencies due to the high level of organisation and manpower needed. Although formal recycling may only be economically viable under certain circumstances, due to its reliance on specific infrastructure requirements (usually involves energy and water intensive processes), small scale and low-tech informal reuse and recycling initiatives are common practice in different humanitarian contexts. There are two sub-types of recycling processes that can be considered effective at renewing the value and quality of a material or item. Upcycling, which is an increasingly popular way to re-manufacture or re-purpose an item without breaking it down to its raw, constituent materials (e.g., up-cycling wooden pallets into furniture), and down-cycling which refers to converting a product back into its component elements to then employ them where possible in the creation of a new item (e.g., down-cycling of car tires into safety surfaces for playgrounds or running tracks).

Programmes and initiatives for the valorisation of waste should be preceded by waste segregation practices taking into account the following considerations:

- Waste segregation should be implemented as early as possible in the waste generation and collection chain to ensure good quality material and avoid its contamination with other waste streams.
- Segregation systems at source should be kept as simple as possible (e.g. organic waste vs. non-organic waste), so they are easy to implement.
- Waste segregation should be implemented as much as possible on a voluntary basis to reduce management costs. Thus, segregation must become a habit and specific behavioural change programmes should be implemented for this.
- If applicable, the use of different types of disposal containers for recyclable material (different colours and/or material), will encourage their use.
- The engagement and sensitisation of the affected communities and other stakeholders on the above strategies is essential for the effective participation of all relevant parties.

Land-filling and controlled disposal fall at the bottom of the hierarchy. Uncontrolled disposal (including open burning of waste) is not to be considered as an appropriate or acceptable waste management option. Controlled disposal includes barriers between landfill and the external environment, such as soil and water, and if possible, air. This means that eventual leachates and gas emissions from landfills are treated before final disposal in the environment.

Organic waste recovery

Diverting organic waste from the main waste stream can drastically reduce the need for waste management. In addition, products from organic waste recovery can greatly benefit the environment and support livelihood programmes linked to agriculture. Some of the options for organic waste processing include composting, vermi-composting and anaerobic digestion. The choice between the different options will vary depending on key aspects such as organic waste properties, quantities, local capacity and know-how, and demand for final products.

Composting

Composting is the biological decomposition and stabilisation of organic material (e.g., plant and food waste), under aerobic or anaerobic conditions. The benefits of compost include providing nutrients to crops, serving as fertiliser, acting as a soil conditioner, increasing the humus or humic acid contents of the soil, and introducing beneficial colonies of microbes that help to suppress pathogens in the soil. It also reduces expenses related to purchase of commercial chemical fertilisers. Compost can also be used for land and stream reclamation, wetland construction, and landfill cover. Composting at both household and settlement level is also a good way to reduce the volume of waste requiring disposal. Composting should be conducted in closed bins/containers that promote airflow but limit the opportunity for vectors such as flies or rats to be accommodated and fed. A well-ventilated and maintained compost is often devoid of odours. Composting requires significant awareness raising, education and buy-in from the community, but can be a low-cost and effective method for SWM when done well.

USEFUL ENVIRONMENTAL CHECKLISTS AND SCREENING/ASSESSMENT TOOLS:

Making Waste Work: A Toolkit. How to collect waste safely and efficiently: A step-by-step guide to starting up a simple community-based waste collection system

USEFUL LINKS AND RESOURCES:

NRC, 2017, Sustainable Settlements: A framework of existing and emerging technologies and methodologies to improve the social, environmental and economic sustainability of settlements.

UN Habitat, 2010, Collection of Municipal Solid Waste in Developing Countries: The report provides information that can lead to the development of reliable and affordable solid waste collection systems.

IFRC & Swedish Red Cross, 2020, Managing solid waste: The guidelines provide practical advice to sector practitioners who are not necessarily specialised in waste management.

Practical Action, 2020, Low-cost medical waste incinerator: Manufacturing, Operation and Maintenance Instructions

5. PROJECTS SHOULD ENSURE SUSTAINABLE SUPPLY CHAINS

Yemen: emergency aid in times of Coronavirus. Photo credit: UNFPA

In line with DG ECHO's Thematic Policy on Logistics, partners should consider the supply chain (which is composed of procurement and logistics) throughout the entire project cycle, cooperate with other humanitarian actors by sharing information and pooling resources; and promote long-term, sustainable and green improvements in the humanitarian sector's approach to logistics.

There is a wide range of initiatives to make logistics as green as possible, and each organisation should evaluate its own goals, capacities and plans to achieve them in the short, medium and long term. Logistics and transport activities have been identified as having a major impact on the environment, therefore establishing a green procurement strategy can significantly reduce an organisation's environmental footprint.

REQUIREMENTS:

- Plan procurement to reduce air shipments of goods and items, which are responsible for higher emissions than sea shipments and land transport.

- For organisations or projects including fleet of vehicles, measure the movements, costs and maintenance of vehicles and means of transport to gather data about their use. Include maintenance of the vehicles in the project plan. Ensure the most sustainable and environmentally friendly performance of vehicles for the given context.

- Reduce and optimise secondary and tertiary packaging of food and NFIs. Reduce or eliminate single use plastic bulk packaging, and do not employ single-use plastic wrapping around individual NFIs (blankets, etc.), unless it is essential to the quality/sterility of the item. This can be achieved through ongoing collaboration with suppliers and updated product specifications. Encourage biodegradable packaging, if the integrity of the packaged item can be ensured.

- Avoid procuring single-use disposable items where applicable, and favour products with greater durability and high recycled content.

- Ensure right-size procurement. Accurately calculate and plan the number of items needed, size and frequency of procurement and distribution in order to prevent unnecessary waste and environmental impacts from over-production and over-procurement.

- If their supply, durability, adequacy and environmental sustainability can be ensured, favour procurement of locally-produced items, when they provide more benefits than the importing option (considering delivery lead-times, cost and emission of transport). Local procurement of medicines and medical supplies can occur only on condition that local markets have been assessed and stringent quality assurance is in place to avoid procurement of sub-standard or counterfeit products, in line with the do no harm principle (to be read in combination with the Provisions on medical and food supplies applicable to actions funded under the EU Humanitarian Partnership Certificate 2021-2027).

RECOMMENDATIONS

- Consider opportunities to strengthen the capacity of local communities and supply markets to support local market actors and develop opportunities for local production and procurement, while considering the need to procure environmentally friendly humanitarian items.

- Consider the environmental impact of products throughout their full life cycle when similar products from different origins are compared, where such life cycle assessments are available.

- Plan for reducing packaging materials as much as possible, then plan on recovering and recycling unavoidable packaging locally or even returning them to the vendor for re-use.

- Explore pooling opportunities and consider joint procurement of goods and services in a team-effort with peer organisations on local, regional and global level, where applicable.

- Include environmental requirements in suppliers'/vendors'/contractors Expressions of Interest (EOIs), Statements of Work (SOWs), tender documents, and contracts. Create and apply selection criteria that matches the environmental requirements.

- Enhance the sustainability of facilities and warehouses. Invest in solar or wind power sources and reduce energy consumption.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE SUSTAINABILITY OF THE SUPPLY CHAIN AND LOGISTICS SECTOR IN HUMANITARIAN RESPONSES

Transport and distribution

By effectively connecting the places of item production, the storage points, and the distribution centres, transport-related pollution can be significantly reduced. The distance items require for transport may directly affect the type, quantity, and specifications of the packaging. Therefore, including the proximity of the item production sites to the distribution centres as a selection criteria for the supplier could favour local production and shorter transport, consequently reducing the carbon emissions and pollution linked to it. The way items are transported has an important impact on their environmental footprint. Sea freight and transport by cargo train are less carbon intensive than air freight and trucking, but they require advanced planning to allow for the extra time it takes. Furthermore, engaging local stakeholders by procuring locally, through either direct or cash-based assistance, and supporting local markets and businesses, can be an important source of economic recovery. However, in this case, oversight of quality and sourcing of items and services will be more complex, due to the challenges in establishing quality control, and assessing environmental impact during production, as well as end-of-life and solid waste management. Therefore, a careful cost

benefit analysis is crucial to establish the trade-offs between global and local procurement and determine the most sustainable solution for a specific context (considering delivery lead-times, cost, emissions linked to transport, supply capacity, durability, quality and adequacy).

Performance of vehicles

A properly maintained fleet has the advantage of being both environmentally friendly, but also cost efficient. Fleet is causing high amounts of pollution, and reducing air quality. To ensure the most sustainable and environmentally friendly performance of vehicles the following steps can be undertaken:

- Selecting fuel efficient vehicles (and the right type of vehicle for the right job, (i.e., avoid using heavy and high fuel-consumption 4x4 for urban environments) and ensuring right-sizing of fleets. Consider alternative transportation - low-emitting and fuel-efficient vehicles.
- Favouring the use of locally available brands/types of vehicles, avoiding external dependency on spare parts or maintenance (especially if vehicles are donated to local organisations)
- Running a sustainability analysis before vehicles are donated to local organisations (if possible, favour the use of renting or rented vehicles during the project timeframe) to avoid having non-operational vehicles that the local organisation cannot afford to fix and which become waste.
- Driver training to reduce accidents and improve fuel consumption.
- Equipping fleet vehicles with monitoring devices that capture movement as well as idle times, and monitor fuel consumption.
- Monitoring vehicle utilisation in terms of both payload and empty running.
- Conducting preventative maintenance, as a poorly serviced vehicles use more fuel, have major breakdowns, require more spare parts and generate more waste of broken parts.
- Disposing of used tyre casings, batteries, motor oil and other vehicle waste responsibly.
- Promoting pooling initiatives where applicable. Organisations working in the same areas can ‘create’ transport networks by pooling resources and creating shuttle and car-sharing services. This can include improvement of travel planning/trajectory mapping for project activities in order to facilitate better sharing of vehicles.
- Whenever possible and for those countries where an organisation operates for long time with a high number of vehicles, include as a requirement 'international environmental standards to dispose vehicle workshop waste' in tenders to procure vehicle maintenance/repair services from 3rd-parties. If possible, and feasible, hiring an external specialised service to assess how selected company(ies) do actually dispose vehicle workshop waste is recommended. Because such assessments might be expensive, information could be shared with other humanitarian organisations that might not be in a position to undertake them, strengthening collaboration, and collectively advocate vis-a-vis local companies to manage waste properly.

Reducing and optimising packaging and single use plastics

Reducing and optimising packaging could be achieved through a consolidated and coordinated procurement approach by working with suppliers and importers but also through a coordinated effort between donors and INGOs to work with governments to change policies particularly in contexts where supplier options are limited.

Planning supply chains and procurement by improving the distribution channels and by considering the cost of waste management linked to the items delivered can reduce significantly the waste production. Packaging represents one of the greatest challenges to environmentally friendly logistics while at the same time being vital for shipping and storage. There are several overarching factors that influence the delivery of humanitarian assistance, and the resultant packaging waste. Such factors include competing priorities, the type of emergency, and local vs. international assistance delivery.

Tackling excessive use of single use items in packaging is crucial to reduce waste while at the same time optimising storage/transport space requirements and decreasing items cost as well as GHG emissions linked to transport. Reviewing technical specifications of products to make them less plastic intensive and to optimise their packaging, will facilitate this process.

Basic characteristic of sustainable packaging (all do not necessarily apply to a single item):

- Contains the highest proportion of biodegradable and/or recycled materials possible while still serving their purpose;
- Takes up as little space as possible to maximise shipping and storage efficiency;
- Has the potential for reuse or recycling;

- Does not contain materials that produce hazardous breakdown chemicals.

Possible actions to consider when planning packaging may include:

- Using biodegradable over plastic packaging (e.g., cardboard cartons), where applicable.
- Recovering packaging materials, reusing them locally or even returning them to the vendor for re-use.
- Reducing the size of packaging, requiring less space to store and less fuel to transport.
- Minimising the printing on packaging as inks are often made of environmentally hazardous substances.
- Identifying local companies that may engage in environmentally friendly solid waste disposal and recycling, to prevent the packaging from being used once and then discarded.
- Ensuring waste collection and management of packaging at distribution points.
- Supplies and buyers employing reverse logistics approach to recover and recycle or effectively dispose of packaging.

Reuse, valorisation and reverse logistics of packaging and items

Reverse logistics has been traditionally defined as the process of moving a product from its point of consumption (from the final consumers) to the point of origin (to the sellers, manufacturers, in-kind donors, etc.) to recapture value, redistribute/resell or ensure proper disposal. Capturing value has been of utmost importance, focusing on making the limited resources more efficient and helping to reduce GHG emissions, energy use and waste. Because of all of the above, reverse logistics are inherently linked to environmental sustainability.

In humanitarian contexts reverse logistics should be applied and items back-tracked particularly in the following cases:

- When items that have already been purchased but the programmes get down-scaled or suspended (due to insecurity concerns, end of emergency, etc.);
- When items were found faulty, damaged, expired, substandard, returned due to quality control issues;
- When the items were rejected by people due to improper needs assessment;
- When the items are no longer useful to the programme due to incorrect and/or delayed orders;
- For item value recovery (reuse, refurbish, repurpose, recycle items).

Additionally, ensuring right-sized and a procurement adapted to the actual needs and capacities of the local context and avoiding inoperable items reaching field operations, can drastically reduce the environmental footprint of humanitarian responses (see also the Protection mainstreaming chapter). Loss of items and all its annexed environmental footprint are most commonly associated with the following causes:

- Lack of needs assessment;
- Inappropriate selection of products;
- Broken or incomplete equipment;
- Lack of service agreements (maintenance, spare parts, etc.);
- Lack of technicians and expertise;
- Lack of training on proper use;
- Obsolete or redundant equipment;
- Equipment incompatible with infrastructure;
- Financially unviable operations;

To implement a reverse logistics approach, organisations must plan for strategies to manage products beyond manufacturing and distribution stage and therefore include repair, recovery, redistribution, value recovery (reuse, refurbish, repurpose, recycle items) or any combination of these activities as part of the supply chain. The items may be returned to the supplier; integrated in local value recovery activities (which in turn offer livelihoods opportunities); redistributed and used in other programmes; or finally sustainably disposed of.

Within reusing, repair operations are not necessary, besides cleaning and minor maintenance of products. This is in contrast with re-manufacturing and recycling in which more intensive processing takes place on spare parts or materials (repairing, replacing, reconditioning, and disassembly). By extending and/or expanding the usability of products and materials, reverse logistics enhances their life-cycle, emphasises the elimination of waste and promotes circular economy approaches, which are based in more regenerative and restorative processes of production and consumption.

Production and right-sized procurement

The production and procurement phase of the supply chain refers to the manufacture of products and the processes in which stakeholders (e.g., humanitarian assistance organisations) acquire the necessary goods and services to provide food and non-food assistance. The production and procurement processes both offer a myriad of opportunities to reduce humanitarian assistance waste, pollution and GHG emissions, by directly affecting the composition, the volume and weight of packaging materials and modifying the technical specifications of products and materials in current use with the aim to extend their durability and diminish their plastic content or presence of harmful chemicals.

Business-as-usual practices privilege price-based selection of suitable products, which hides unethical or unsustainable practices. Sustainable procurement considers the environmental, social and economic consequences of design, materials used, manufacturing methods, logistics and disposal. One of the most powerful methods is to choose the appropriate selection criteria, include it in the technical specifications of the items, clearly informing potential bidders, and ensuring all requirements and technical specification are met otherwise the bidder is ineligible. Thus, the price competition happens between sustainable items rather than between sustainable and unsustainable, the latter of which might be cheaper. The revised technical specifications of products should consider the impacts of packaging, transport/location of production facilities, the materials used and the processes of production and finally the product end of life management. This process can be incorporated in a life cycle analysis exercise.

Right-sized procurement, based on proper needs assessment and risk analysis plays a key role in ensuring a sustainable supply chain. By taking advantage of the virtual and/or white stocks agreements with suppliers, the deterioration of items and the related waste can be minimised, if the items are not fully utilised in due time. This is especially relevant in cases of volatile and unstable environments where programmes can get down-scaled, suspended or diverted. In case of over-procurement, reverse logistics should also be considered. Over-procurement can be also tackled through joint procurement approaches with other humanitarian actors.

Special attention should be placed in cross-border operations, where import requirements and regulations should be well understood and complied with by the imported in order to ensure a quick release of goods from customs facilities. Otherwise, there is a risk of goods getting damaged or unfit-for-use while goods get released, in some countries depending on the type of product category (e.g., medicines, seeds) the import procedure can take weeks or even months (in some case longer import lead times for humanitarian organisations enjoying tax-free benefits, compared to normal trading, because of the extra time required to get the tax/duty-free approval for each shipment).

The environmental impact of products throughout their life cycle

Produce Life Cycle Analysis (LCA) approach is a trans-disciplinary framework which allows the comparison of different items and services through a multi-criteria decision analysis with the aim of finding the best compromise between costs, environmental impacts and functionality. By giving a comprehensive overview, the LCA allows informed decision-making, leading to the selection of the most appropriate item or service to address the needs in a specific context, while mitigating the negative environmental impacts over the lifetime of a product or action.

Material health is a principle that addresses the presence and release of harmful substances to the environment. Related to clean production, material health extends consideration of the use and emission of substances of concern through the use and end of life phases of products. The objective is to identify and minimise or eliminate hazards associated with materials used in packaging along the life cycle. There is a need for greater transparency regarding what is the content of product and packaging materials and to encourage the optimisation of material formulations for human and environmental health. The development of tools and methodologies to assess material health is ongoing and will allow more transparent communication of material characteristics throughout the value chain.

Inter-agency collaboration

In a combined effort, partners can exert leverage on producers and suppliers to use more environmentally friendly approaches to production and transport of humanitarian items. Pooled efforts help optimise transport use and support right-sized procurement and therefore help reduce the negative environmental footprint linked to it. There are different collaborative procurement possibilities, from using existing contracts of other organisations ('piggybacking'), to procuring from other organisations and joint procurement options. As one of the measures to facilitating the latter, partners can apply branding in a tailored way, reserving it for items that are not meant to be reused in other contexts. For items that could be reused or potentially handed over to other organisations when programmes are being scaled down, partners could opt for a branding postponement approach (delayed product differentiation) by which adding logos of organisations is done at the end of the supply chain, as close as the final distribution as possible, when it is certain that items will be delivered. At the same time partners should avoid extra layers of wrapping or printing. In line with DG ECHO's visibility requirements, donor logos can still be included from the get-go. The favoured approach by DG ECHO however is opting for the branding of transport facilities (cargo vehicles, pallets) and

deployment operations (staff clothing), signposting of warehousing and distribution points, etc. instead of branding the relief items themselves. Procurement is nonetheless not the only area where pooling resources creates this sort of leverage. Adopting harmonised environmental criteria and creating initiatives aimed at enhancing collaboration between humanitarian organisations and suppliers, to create more sustainable humanitarian goods, supply as well as value chains can also exert this leverage.

Enhancing the sustainability of facilities and warehouses

Proper storage modalities and conditions are essential to avoid item loss by degradation, or damages during in-storage movements. If storage facilities are going to be used for more than 2 years, investment in renewable power sources should be considered (or included as a selection factor in tenders for warehousing services), even when hiring the service from a logistics operator or company.

Possible actions to consider to enhance warehouse sustainability include:

- Using water efficient taps, leak prevention and water recycling methods.
- Installing energy efficient light bulbs and other energy efficient equipment (e.g., inverter-based air conditioning).
- Using interceptor tanks to avoid run-off pollution from fuel dispensing areas.
- Phasing out of ozone-depleting gases from air conditioning systems in warehouses and compounds.
- Developing a strategy for managing e-waste (old computers, communications equipment) and batteries, which if available, should include disposal at a certified e-waste recycling/refurbishing plant, which should be licensed to operate in a specific country by the national government. It is recommended that organisations visit the plants in question to observe operations first hand.
- Utilising proper stock management methods to avoid infestation, spoilage, damage and expiration, all of which lead to waste and disposal.
- Management and monitoring of hazardous chemicals to avoid spillage or leaking.
- Management of the production, collection and disposal of waste, including packaging.
- Not storing materials that contain batteries for more than 6 months as the batteries will fail.

** For more information regarding energy efficient design for communal facilities, refer to the Shelter and Settlements chapter of this document.*

USEFUL ENVIRONMENTAL STANDARDS:

ISO standards, 2017, ISO 20400: The standard provides guidance to organisations, independent of their activity or size, on integrating sustainability within procurement policies and strategies and assists them in improving resource usage and reducing costs by adopting a life-cycle approach.

USEFUL ENVIRONMENTAL CHECKLISTS AND SCREENING/ASSESSMENT TOOLS:

UNEP, 2017, Clean Fleet Toolkit: The toolkit guides organisations in the development of a strategy for reducing the environmental impacts of your fleet

USEFUL LINKS AND RESOURCES:

UNFPA, 2013, Green Procurement Strategy: The strategy outlines the environmental focus areas for which UNFPA would like to set up requirements and the process through which suppliers are expected to demonstrate that they meet these requirements.

World Bank, 2019, Sustainable Procurement guidance: The guidance is an introduction for practitioners to sustainable procurement in World Bank IPF projects.

CIPS, 2013, Ethical and sustainable procurement: This publication introduces procurement professionals to the key concepts behind ethical procurement and provides practical advice for getting started.

UNEP, 2021, Sustainable Public Procurement-How to Wake the Sleeping Giant: The guidelines give direction to policy makers, experts and consultants on designing Sustainable Public Procurement (SPP) policies and implementing them.

UN WFP, Safe Management of Hazardous Waste in WFP Workshops: This booklet is a user-friendly guide for WFP's fleet and workshop staff to safely and effectively manage hazardous waste, such as lubricants, welding gases and paints.

USAID BHA, 2020, Sustainability in Humanitarian Supply Chains: A preliminary scoping of improvements in packaging.

The Joint Initiative on Sustainable Humanitarian Assistance Packaging Waste Management: The initiative aims to build a greater understanding of the packaging waste challenge among the humanitarian sector and bring stakeholders together to find and implement creative, collective solutions.

ICRC-IFRC, Green products catalogue: The catalogue outlines a procurement factsheet of top sustainable relief items in the ICRC-IFRC product catalogue.

6. PROJECTS DELIVERED THROUGH ALL TRANSFER MODALITIES, INCLUDING CASH, SHOULD ENSURE THEIR CONTRIBUTION TO ENVIRONMENTAL EFFICIENCY

Iraq: Cash for the Most Vulnerable. Photo credit: EU/ECHO/Peter Biro.

In line with DG ECHO's Thematic Policy on Cash transfers[23], partners should prioritise delivering aid through the cash modality.

When comparing cash and vouchers used for local purchases of items versus in-kind assistance, DG ECHO does not take a blanket stance that cash and voucher assistance (CVA) is more environmentally sustainable than in-kind, although it may seem so at first glance. In reality, the environmental impacts are more indirect: they depend on the products available in the local market and the choices made by people. They also transfer the responsibility for the environmental outcomes of the interventions to the national supply chain, including affected persons. The environmental implications of using cash or vouchers for the purchase of products over in-kind, especially the indirect impacts, are still being explored[24]. At the same time, cash transfers in particular typically promote local procurement and have a multiplier effect on local economies, increasing effectiveness and cost-efficiency, which partners can choose to translate to more space in budgets and programmes to integrate environmental assessments and safeguards. CVA has environmental potential that is currently under-exploited in terms of more sustainable methods of consumption, reducing environmentally damaging survival strategies (e.g., vouchers to buy improved cooking stoves or sustainable cooking energy alternatives), etc. Other areas that organisations involved in CVA could explore include promoting local businesses with more sustainable products (e.g., selling locally produced foods, items with improved specifications that privilege durability, etc.) and helping suppliers/traders to adopt greener practices (e.g., taking back empty containers or packaging). Actions can also target farmers to encourage the use of organic fertilisers and pesticides and promoting agricultural biodiversity.

REQUIREMENT:

- Include potential environmental and climate impacts as part of the Cash & Voucher Assistance (CVA) risk and mitigation analysis.

** For requirements relating to in-kind assistance, see cross-cutting chapters on Waste Management, Sustainable Supply Chains and all sector-specific chapters.*

[23] https://ec.europa.eu/echo/files/policies/sectoral/thematic_policy_document_no_3_cash_transfers_en.pdf

[24] Groupe URD, 2020. Looking through an Environmental Lens – Implications and opportunities for cash transfer programming in humanitarian response, https://www.urd.org/wp-content/uploads/2020/11/RapportENV-Cash_En_GroupeURD_2020.pdf

RECOMMENDATIONS

- Include environmental considerations in programmatic tools used to design an intervention (modality selection analysis, and market analysis).
- For CVA, include environmental considerations in the Minimum Expenditure Basket, in addition to the risk and mitigation analysis.
- Promote continued monitoring of the environmental impact of purchases made to detect any behaviours or choices incentivised by cash and vouchers that may be environmentally damaging and then introduce mechanisms to manage these situations where feasible.
- Prioritise Financial Service Providers that do not invest in environmentally harmful sectors and if they exist, that invest in environmentally beneficial projects.
- Promote complementary approaches outlining environmental considerations and risks, through market support interventions (and/or linking with development actors implementing market system development activities), and work with local suppliers to improve the environmental sustainability of the produces available on the local markets.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE SUSTAINABILITY OF ALL TRANSFER MODALITIES, INCLUDING CASH AND VOUCHER ASSISTANCE

All transfer modalities

Modality selection analysis

In line with DG ECHO's Thematic Policy on Cash transfers, the choice of modality should consider the comparative impact of potential modalities on the environment, markets and local producers[25].

Each modality carries its own environmental impacts so it important to consider the different impacts and trade-offs of each modality. Variations in context, markets, and issues of protection shape the scale of environmental risks in humanitarian contexts, therefore the linkages between these aspects can help us understand better how to best incorporate environmental considerations in the humanitarian response.

It is recommended that potential direct impacts on the local environment of purchases made through CVA as well as items distributed through in-kind assistance are estimated, as well as their estimated likelihood of materialising. For sector-specific cash assistance, it is recommended this is done particularly in sectors with the potential to have higher environmental impacts (e.g., shelter and WASH). The same applies to in-kind assistance, where an environmental screening/assessment is required for WASH and Shelter & Settlements projects (see chapters on Water, Sanitation, and Hygiene and Shelter and Settlements). Taking the example of shelter programmes using cash transfers, these could potentially carry a high environmental risk (e.g., increasing the risk of deforestation) if not planned correctly. This analysis should therefore look along the whole value chain, considering that locally produced and procured goods may not always be the most environmentally sustainable or the most durable over their lifetime, and thus the analysis would point to the fact that more environmentally sustainable alternatives delivered through in-kind might be better.

For in-kind assistance, when procuring items, both food and NFIs, the environmental impact of the distributed products should be considered throughout their lifecycle (production, transportation, use and end-of-life/disposal). DG ECHO requires proper waste management of the items distributed, including waste coming from food, NFIs, including chemicals and medicines, and packaging of the distributed items. This is closely linked to promoting sustainable supply chains and logistics, where partners should reduce packaging and avoid single-use items, plan transport to reduce emissions and favour procurement of locally produced items as long as their supply, durability, adequacy and environmental sustainability can be ensured. For more information relating to DG ECHO's requirements and recommendations regarding in-kind assistance, see the cross-cutting chapters on Waste Management, Sustainable Supply Chains and all sector-specific chapters.

Including environmental considerations in the modality selection by using inter alia the information gathered in the risk and mitigation analysis (for CVA, see below) may play a role in breaking down some issues related to environmental risks of different modalities. DG ECHO recommends doing an environmental risk screening/assessment for all projects, except for WASH and Shelter & Settlements where this is mandatory.

[25] Figure 4 in ECHO cash policy: https://ec.europa.eu/echo/files/policies/sectoral/thematic_policy_document_no_3_cash_transfers_en.pdf

Market analysis

It is recommended to conduct a market analysis to assess the availability of sustainable products, local capacities and the quality and environmental standards of local production. Analysing the types of items available on the markets through an environmental lens, among other aspects, can inform of potential unintended indirect impacts on the environment through the purchases made or items distributed through in-kind assistance. The analysis should cover both the items that are available (and their sustainability) but also what might be lacking or be prohibitively expensive on the market, which might push people to get resources from the environment (e.g. wood for fuel or for shelter). Elements to consider in relation to the products and services available, either on the local market or the broader humanitarian supply chain:

- Durability and life span of items
- Sustainability of materials
- Possibilities of reuse/recycling and final disposal of products
- Environmental impacts or emissions associated with production and manufacturing

** For information regarding the sustainability of materials, refer to the Shelter and Settlements chapter as well as Sustainable Supply Chains.*

Partners may choose to focus on one or a few critical items in order to analyse the environmental considerations of the items using a supply chain analysis.

Feasibility assessments and concerns around market viability tend to refocus monitoring systems on outcomes and impact - including environmental outcomes and impacts therein presents an opportunity to mainstream environment into cash programmes.

It is recommended that the market assessments include in particular an analysis of the energy supply in local markets: the types of energy used and whether enough is available to meet basic needs (cooking food, boiling water, producing heat and light). Such an analysis could point towards the fact that people do not have adequate access to energy for cooking on the market and have to rely on collecting firewood. This could be mitigated by complementing cash assistance for food, by in-kind distribution of culturally and behaviourally acceptable alternative fuels. Market support interventions could also strengthen the supply-side of markets, by encouraging the availability of environmentally sustainable energy sources (see section on complementary approaches below).

In cases where the market analysis shows gaps in the markets (or heavy reliance on unsustainable produce), complementary approaches such as investments in livelihoods activities that can fill this gap can be explored (refer to Green jobs section of the Livelihoods chapter).

** For sector-specific energy considerations see also the Food assistance and Shelter and Settlements chapters.*

Complementary approaches

Integrating measures such as technical assistance, capacity building and social and behavioural change communication for affected persons, staff, volunteers/community mobilisers and suppliers, irrespective of modality or mix of modalities chosen can mitigate their unintended environmental impacts.

For cash transfers, trainings or social and behavioural change communication could cover the following positive behaviours[26]:

- Purchasing goods that have durability characteristics appropriate for the use context
- Purchasing locally sustainably produced goods, particularly if made from natural materials
- Avoiding extraction of local natural resources or prioritising items that rely too heavily on the extraction of natural resources

Understandably, without incentives or social and behavioural change communication, cash recipients are likely to minimise cost rather than valuing environmental sustainability or durability of items, more so if the Minimum Expenditure Basket (and associated transfer value) does not include potentially more expensive more durable alternatives.

For complementary approaches linked to in-kind assistance, see section on Mainstreaming environmental and climate change awareness in the Nexus chapter.

Finally, working with vendors and local suppliers to improve the sustainability and quality of their products can ensure that recipients, and the wider community, have lasting access to more sustainable products. This can take the form of market support interventions (which directly target market actors, market infrastructures or market services) with the aim of addressing the supply-side of market functionality, ECHO supports such interventions where they can create an enabling environment for cash, and can demonstrably improve the environmental sustainability of commodities or services within these systems.

[26] UNHCR 2020. Review of environmental impact of Cash Based Interventions and in-kind assistance: Environmental Checklist. https://www.calpnetwork.org/publication/environmental-checklist-review-of-environmental-impact-of-cash-based-interventions-and-in-kind-assistance/

Monitoring

Monitoring of the environmental performance of ECHO-funded actions is mandatory as part of the regular monitoring activities that partners and ECHO staff undertake irrespective of modality used (for more information see the Monitoring section under the General considerations chapter).

For cash assistance specifically, it is recommended to monitor the environmental impact of purchases made with the distributed cash (e.g. through market monitoring and post-distribution monitoring). This is particularly important for unconditional, unrestricted, and multipurpose cash transfers, which hold the most potential for unintended environmental impacts. This is in order to detect behaviours or choices incentivised by cash that may be environmentally damaging and then introduce mechanisms (technical assistance, capacity building, social and behavioural change communication, complementing the response with in-kind assistance) to manage these situations where feasible. Of course, such impacts are not exclusive to cash assistance alone, and can also result from in-kind assistance (see cross-cutting chapter on Sustainable Supply Chains).

For example, the following can be monitored in relation to the purchases made by people receiving cash:

- whether persons are primarily buying locally produced products
- whether the items purchased are disposed of in the open environment
- whether the items purchased lead to water or air pollution
- whether persons have to resort to collecting firewood from their environment
- whether persons have to use resources from the natural environment to construct shelters

The above questions can also be adapted to monitoring the impacts of in-kind assistance. Based on the above, some examples of questions that can be asked of people receiving cash assistance include[27]:

- "Are you able to meet your water, energy, waste management needs?"
- "What is important to you when you select your products or/and services in the market (cost, quality/durability a mix of both)?"
- "How do you try to minimise expenses (for example, do you recycle, reuse products/materials or prioritise expenses)?"
- "How much do you spend on average for… [list the different components of the MEB]?"

It is also recommended to include environment in lessons learned and evaluation reports of projects based on the outcomes of the monitoring.

Cash assistance

In addition to the above, including environmental considerations in cash-specific programmatic tools can help anticipate indirect and negative impacts on the environment more effectively and analyse the potential contribution of the cash modality to environmental degradation. Thus, it can help address potential direct and indirect environmental impacts of cash transfers.

Risk and mitigation analysis

DG ECHO requires that environmental considerations are included in the cash risk and mitigation analysis at a minimum in cases where the context allowed for conducting a risk and mitigation analysis.

To take the example of the risk and mitigation matrix, 'Environmental Risk' should be added as one of the risk categories and potential environmental impacts of the cash transfers considered. Although potential environmental impacts will be context-specific, examples of such impacts can include risk of:

- deforestation
- water pollution
- water over-extraction (water scarcity)
- waste/plastic pollution
- air pollution, e.g. from use of non-renewable, dirty fuel sources

These environmental impacts can come from the purchases made, or from environmentally damaging coping strategies or undesirable behaviours that might be incentivised by receiving cash or vouchers in particular ways. This type of analysis can also be applied to vouchers. Cash and Voucher Assistance (CVA) is currently being mainstreamed into the NEAT+ [28]. Once finalised, this tool will be able to help with this.

[27] From: *Environmental considerations on possible Cash and Voucher Assistance for St. Vincent's Volcano Eruption Response*: https://reliefweb.int/sites/reliefweb.int/files/resources/21-05-05%20CASH%20ENVIRONMENT%20SV%20final.pdf

[28] https://resources.eecentre.org/resources/neat/

By first assessing the scale of needs, capacities, access, preferences of the affected persons, as well as local policies, and complementing them with an environmental screening/assessment, risks as well as vulnerabilities analysis, we get a comprehensive context assessment, which will in turn inform the market analysis (see above).

Cash for work

In line with DG ECHO's Thematic Policy on Cash transfers[29], cash for work is not appropriate for meeting basic needs objectives particularly in situations of high vulnerability and thus should not be done in the acute emergency phase. For this reason, DG ECHO generally does not tend to fund cash for work programmes, but might consider doing so in contexts where the situation has stabilised, and for the community-level benefit, rather than meeting household-level basic needs, coupling it to 'exit strategy' objectives.

In those cases, by extending this concept to include the environment, these programmes could engage the affected persons in work that addresses the recovery after/during crises, including economic recovery, while at the same time engaging in projects that tackle environmental degradation and the effects of climate change (e.g. reforestation projects).

Financial Service Providers (FSPs)

Especially for large-scale cash transfers, given the amounts that are involved, it is recommended to include and value environmental criteria in the bidding terms of reference. Criteria may be the FSPs' existing and implemented social responsibility programmes and environmental and sustainable investment policies. This should help assess whether the FSPs invest in environmentally beneficial projects, but also environmentally harmful sectors (oil, gas, coal extraction; arms production). This can be done by checking declarations and if needed, ask for documentation to see if they invest in such sectors and prioritise those who do not. This could be included as one of the criteria as part of the wider assessment of FSPs. If this cannot be done in the initial stages of a cash transfer operation due to time constraints, ensure to do it in subsequent rounds of support.

USEFUL ENVIRONMENTAL CHECKLISTS AND SCREENING/ASSESSMENT TOOLS:

UNHCR, 2021, Review of environmental impact of cash-based interventions and in-kind assistance: This checklist has been developed based on the findings of the UNHCR study on the environmental impacts of Cash Based Interventions (CBIs), to support multifunctional teams in charge of implementing cash assistance

USEFUL LINKS AND RESOURCES:

LSE, GSC, UNEP, UNOCHA, 2018, Implications and opportunities for cash transfer programming in humanitarian response: This study reviews the use of cash-like assistance and negative environmental impacts in humanitarian settings and defines a diagnostic framework for assessing these impacts to define how to make assistance transfers in a way which minimises the potential for negative environmental impacts.

Groupe URD, 2020, The environmental impact of cash and voucher assistance: The study aims to analyse certain aspects of the environmental footprint of CVA and understand how it can help to meet environmental and climatic challenges.

UNHCR, Arup, 2020, Review of environmental impact of cash-based interventions and in-kind assistance: This document presents the main findings and recommendations on the environmental impact of Cash-Based Interventions (CBIs) and in-kind assistance.

[29] Thematic Policy Document No 3 on Cash Transfers, including an Annex 1 on Large-scale Cash Guidance Note (March 2022) https://ec.europa.eu/echo/document/download/7e5da863-9a77-40c9-876d-d6dcf74002cc_en

SECTOR-SPECIFIC REQUIREMENTS AND RECOMMENDATIONS

FOOD ASSISTANCE

West Africa's staple food, millet. Niger, 2013. Photo credit: EC/ECHO/Anouk Delafortrie

Humanitarian crises contribute to food insecurity, hunger, disruption of crops, markets and food supply chains. Food insecurity is highest in the most fragile and degraded environments, in conflict situations, and in areas prone to disasters and exposed to recurrent shocks and crises, which are most likely fuelled also by climate change and extreme weather events. Ensuring access to safe, nutritious, good quality and culturally appropriate food in the right quantity at the right time and place, during an emergency or a protracted crisis is an enormous challenge, which is likely to increase given uncertainties such as climate change. Transformative change must embrace innovation across the whole food system with an increased emphasis on promoting national food systems, small-scale and locally driven food science and technology that addresses local food security, generates employment and contributes to the local economy.

REQUIREMENTS:

- Prevent food waste by distributing culturally appropriate food and ensuring its proper food storage, handling, and expiration date management.
- Organise a solid waste management plan to collect and manage waste regularly from designated household or settlement level collection points.
- In collaboration with suppliers, promote sustainable food value chains, which minimise ecological damage, the depletion of resources and production of solid waste. Favour locally produced products and discourage the use of single use plastic items linked to packaging.

- Promote sustainable methods of consumption by favouring locally produced foods, supporting self-reliance and self-sufficiency of affected persons.

- Ensure distribution of clean cooking energy and energy efficient cooking stoves as standard items (through in-kind or cash based) and avoid establishing dependency on locally harvested biomass – or demonstrate that another project(s) exists which is covering these needs. Give preference to clean cooking energy over firewood or other traditional solid fuels.

RECOMMENDATIONS

- Ensure collaboration and coordination of efforts with development actors to address food insecurity issues on a longer term by promoting regenerative, durable, and economically adaptive food systems.

- Promote programmes of sustainable farming and discourage the use of water intensive practices by providing capacity building activities to promote the incorporation of biological as well as ecological processes into agricultural and food production practices.

- In projects with pesticide and fertiliser distribution, prioritise indigenous means and techniques over chemical-based products and avoid entirely the use of highly hazardous pesticides. Encourage the use of locally available organic fertilisers and bio-pesticides/biological pest control.

- Incentivise a locally led return system to ensure that packaging is collected and re-used – this can also be a source of income via the establishment of a local 'plastic/packaging recycling/reuse initiatives', in cases where a market assessment has shown a consistent supply of both recyclable materials and demand.

- Include training and messaging on energy-efficient cooking habits as part of food distribution programmes, recognising that this is also dependent on the NFIs/kitchen kits that are distributed, which should also be familiar and acceptable to the community.

- Distribute pre-processed food (e.g., milled grain, processed cassava, parboiled rice) or include pre-processing options on site.

- Repurpose organic waste as compost.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE SUSTAINABILITY OF THE FOOD SECTOR IN HUMANITARIAN RESPONSES

Direct food assistance

The main areas of focus of the requirements related to food assistance is food waste prevention, the promotion of sustainable food value chains and procurement linked to local food production systems which might in turn diminish the carbon emissions and the solid waste associated with them.

Preventing and reducing waste linked to food assistance

Waste linked to discarded and improper disposal of packaging such as paper, plastic, and various laminates, normally used for carrying food, wood and other fuels is one of the most pressing issues linked to food assistance in humanitarian contexts. The ways in which different types of assistance materials are packaged, transported, and stored significantly impacts the quantity and type of packaging needed. Therefore, coordination and collaboration with food aid suppliers, packaging suppliers, transporters is crucial, to identify the most sustainable packaging and research potential alternatives to improve cost-effectiveness and better preserve food aid products throughout the supply chain and shelf life (see also cross-cutting chapter on Sustainable Supply Chains).

Furthermore, consolidating distribution centres and increasing warehouse organisation (also by considering pooling capacity with other organisations) may help cut out unnecessary processes, reduce transportation needs, improve warehousing efficiency, and ultimately reduce the quantity of packaging used and their associated carbon emissions. The introduction of a safety and quality culture in the food supply chain (coupled with procurement focused on locally produced foods, where possible) as opposed to following a procurement approach focused only on the lower price, will reduce food wastage along the supply chain, from the farmers/suppliers to the end users and ensure the safety, nutritional quality and acceptability of the delivered foods. Any food losses, quality deterioration, and delays or logistic complications have environmental as well as financial consequences.

In cases where organic waste from inappropriate food stock and food conservation cannot be avoided, it should be disposed of appropriately. Together with other organic waste, it can be collected at the household or settlement level and composted. The compost can be later used as fertiliser for agricultural purposes. Composting of waste will further reduce the volume of waste requiring disposal in landfills.

** For additional details regarding solid waste management and composting, refer to the Waste management chapter of this document.*

Clean cooking energy and technologies

Access (or lack thereof) to cooking energy and technologies has a direct impact on the environment and health of the affected communities in humanitarian contexts. The requirement on providing access to clean cooking energy and energy efficient cooking stoves is therefore crucial for achieving a healthier and environmentally friendly response. Yet environmental degradation is not the only negative by-product from unsustainable cooking practices. Protection risks and conflicts over limited resources are a serious concern through increased need for firewood. Cleaner cooking energy and energy-efficient stoves have proven benefits on human health, air pollution and peaceful cohabitation of affected populations.

Assessing environmental risks at the earliest stage of the programme design will determine the most appropriate mitigation actions and potential negative environmental impacts related to the supply and preparation of food of the affected populations, including:

- Deforestation, soil erosion and degradation of natural habitats resulting from gathering cooking fuel,
- Air pollution and degradation of air quality, including indoor air quality, due to the burning of biomass fuel for cooking, which also leads to an increase in health issues,
- GHG emissions linked to cooking fuel,

The selection process for cooking fuels and stoves should be based on a risk-informed analysis, which includes environmental aspects and considers the following:

The cooking energy supply should be able to meet the demand, without exacerbating resource availability and should be available without engaging in unsustainable practices (i.e. uncontrolled deforestation). Energy-saving practices are related to more optimised energy use as well as timely food preparation. Considerations should be put on the food provided through the humanitarian response, as some foods may require long cooking time and bigger energy needs or large quantities of water. Interventions linked to fuel provision can be integrated with livelihood activities which will increase the sustainability of the response.

In contexts where firewood and charcoal are utilised as the main cooking energy source, Liquefied Petroleum Gas (LPG) should be prioritised as a transitional, cleaner solution. This should be preceded by a consultation and sensitisation of the community to ensure acceptability and a market assessment to ensure availability and affordability of the LPG system and its spare parts.

When providing cooking stoves, the efficiency and durability of the items should play the most important part for ensuring environmental sustainability. Distributed biomass stoves should be rated as tier 1 stoves.

The fuel, as well as stoves, should be accepted by the affected community and planned around the locally preferred cooking practices and dietary needs. If new cooking stoves and energy alternatives are introduced, they have to be accompanied by sensitisation campaigns and trainings on appropriate fuel management and use as well as maintenance of specific cooking stoves.

Cash for food

Food should be procured as much as possible from local sources. Cash-based approaches should be prioritised to give more flexibility and support local food systems and supply chains. The delivery of food assistance through a cash modality could potentially favour more sustainable methods of consumption by encouraging locally produced foods and self-reliance and self-sufficiency of affected people. However, since the environmental implications of using cash in

food security and livelihoods programmes are very contexts specific, a risk assessment that integrates environmental aspects should be carried out to point out opportunities and threats. Some potential advantages of promoting the purchase of locally produced foods include the reduction of GHG emissions involved in the transport and storage of food; support to smallholder farmers and; reduction of packaging and waste.

** For additional details on how to include environmental considerations into cash programming, refer to the Cash chapter of this document.*

Indirect food assistance through agriculture and livestock

The implementation of humanitarian responses could induce dependency on food assistance, rather than strengthening local food systems and ensuring resilience. With a view to linking humanitarian assistance and longer-term support to sustainable livelihoods, but also to respond to immediate food insecurity crises, the humanitarian food assistance programmes should integrate longer-term resilience enhancing projects, which will be especially beneficial in protracted situations experiencing cyclical disasters. These should be based on sustainable agriculture including farming, livestock breeding and fishing practices, regenerative approaches and rehabilitation of local food production systems.

** For additional details on how to include environmental considerations into livelihood programmes, refer to the Livelihoods chapter and the crosscutting chapter on Nexus.*

Sustainable agricultural practices

The rehabilitation of local food production systems should build on prioritising local inputs (crop varieties, livestock breeds, locally produced and traditional tools, etc.) over imported ones, the introduction of trainings on Community Supported Agriculture (CSA), conservation practices, integrated pest management (IPM), and similar topics targeting local farmers and producers, and finally on the implementation of environmental impact assessments, especially before planning and designing agriculture and livestock support. These actions will ensure acceptability of programmes among local food producers and ensure sustainable food production while reducing environmental degradation.

Sustainable agriculture is based on regenerative farming practices that consider the ecological cycles, discourage the use of water intensive practices and promote methods and practices that are economically viable, environmentally sound and protect the public health. Sustainable agricultural practices are those that enable more efficient use of natural resources, mitigate the impact of agriculture on the environment, and strengthen capacity for adaptation to climate change and climate variability.

IPM plays an integral part in sustainable agriculture, as it is designed to encourage the use of natural and cultural pest management practices. It prioritises indigenous means and techniques over chemical-based products and prevents pest outbreaks through naturally occurring processes, pest-resistant varieties of crops and traditional cultural methods. Uncontrolled pesticide use, on the other hand, can lead to several unintended and harmful environmental consequences, including: soil contamination, contamination of surface and ground water, effects on non-target organisms, disruption of natural ecological cycles, pesticide resistance, loss of biodiversity as well as harmful health consequences.

** For additional details on water management, refer to the Water, Sanitation and Hygiene chapter*
*** For details regarding traditional cultural methods refer to the section on Traditional Ecological Knowledge in the Protection Mainstreaming chapter.*

USEFUL LINKS AND RESOURCES:

WHO, 2014, Guidelines for indoor air quality: household fuel combustion: The recommendations focus on reducing emissions of pollutants as much as possible, while also recognising the importance of adequate ventilation and information and support for households to ensure best use of technologies and fuels.

UNHCR, 2021, Protection-Sensitive Access to Clean Cooking: The compendium outlines a step-by-step approach and a list of options to address cooking challenges when confronted with limited, inappropriate, inefficient local cooking solutions, or the lack of access thereof.

USAID, 2018, Food aid packaging challenges and opportunities

Clean Cooking Alliance, Clean cooking catalogue: Product and performance data for the clean cooking sector in humanitarian areas.

WFP, Food safety and quality: The system aims at protecting the health of affected persons, satisfying their expectations and host government regulations, and reducing supply issues and financial losses.

USAID, 2009, Integrated Pest Management: The document outlines IPM tactics, approached as well as how to implement an IPM plan and the potential human health and environmental impacts of pesticide use

The LEGS project, 2015, Livestock Emergency Guidelines and Standards: The approach focuses on supporting the livelihoods of livestock keepers before, during and following a crisis

EHA Connect, Food Security, Nutrition and Livelihoods: Key environmental issues linked to food security, nutrition and livelihoods programming

SHELTER AND SETTLEMENTS

EUCP assistance to Madagascar after cyclone 2022. Photo credit: French Civil Protection

Shelter and settlements (S&S) programming carries one of the highest risks of negative environmental impacts among humanitarian activities. However, it also represents an opportunity to minimise potential environmental impacts by thorough assessments/screenings and robust environmental management. Environmental screenings/assessments and mitigation strategies should accompany all construction activities throughout the programme cycle and are imperative during programme conception to determine mitigation opportunities and environmental risks before implementation. Inadequate implementation of S&S programming can put communities at risk from avoidable environmental hazards linked to deforestation, land and soil degradation, loss of biodiversity, pollution of water sources as well as natural habitats and accumulation of waste. The protection, restoration and improvement of the natural environment in operational sites should be mainstreamed throughout the programme cycle and considered before, during and after the establishment of such sites with special attention on the impact of shelter interventions on the host population's needs for natural resources.

REQUIREMENTS:

- Conduct a project-level environmental screenings/assessments in coordination with fellow partners, using the Nexus Environmental Assessment Tool (NEAT+), or a similar tool to identify negative environmental impacts of planned interventions.
- Prepare an environmental report based on the findings of the environmental screenings/assessments outlining the environmental risks associated with the response and the measures planned to mitigate them.
- Include environmental parameters or mitigation measures in the Monitoring and Evaluation plans of S&S programmes, based on the environmental risks and potential negative impacts identified through the risk analysis and in line with the environmental requirements applied for that context.

- Consider the impact of the intervention on the host population's current and future needs for natural resources and identify mitigation measures. This is especially pertinent in terms of deforestation and water access risks.
- If new humanitarian settlements, or extensions of existing ones are planned, ensure as much as possible they are linked to existing infrastructure, facilities and livelihoods.
- During programme implementation, avoid areas of special scientific interest - areas of land and water considered to represent natural heritage in terms of their: flora, fauna, animals, geology, and geomorphology.
- Closely coordinate with national, and local planning authorities as well as existing and well-functioning coordination mechanisms, such as clusters throughout the settlement design process (including for assessments) to avoid overlapping of efforts and ensure long-term sustainability.
- Avoid deforestation and removal of vegetation as much as possible to maximise shading effects, protect from winds, and reduce erosion and flooding. To the maximum extent possible, avoid major land transformations. Maintain the existing groundcover and establish appropriate drainage systems and soil retention engineering techniques.
- Ensure hazard risk analysis and mapping of flooding, landslides (topography) and static water bodies in the site of intervention to avoid building in hazard-prone areas and prevent secondary displacements and cyclical humanitarian interventions.
- When conceiving the design of different structures (shelter solutions, communal facilities) favour sustainable materials and practices that do not deplete local natural resources or contribute to long-term environmental damage.
- When procuring timber, bamboo or any related products be aware of the environmental impact and ensure procurement from local or international certified suppliers where possible.
- In urban or peri-urban areas and when the shelter response is delivered through renting accommodation, work with owners where possible to ensure the housing unit is properly insulated, including adaptation of windows, in order to save energy on cooling and heating.
- Wherever possible, unused building materials can be sorted and stored so that they can be recycled, reused, or repurposed. Reuse and recycling of tarpaulins and emergency tents should also be practiced if possible.
- Prioritise local labour as much as possible for construction-related activities.
- Ensure distribution and user training of clean cooking energy and energy efficient cooking stoves as standard items (through in-kind or cash) and avoid as much as possible establishing dependency on locally harvested biomass – or demonstrate that another project(s) exists which is covering these needs (e.g., through food assistance).
- Ensure that energy systems for cooking, lighting, powering/charging and heating/cooling are affordable, sustainable, safe, and appropriate in the longer term. Consider energy needs at household level and at the settlement level covering a variety of activities (communal facilities, commercial activities, and street lightning) and favour renewable energy sources as much as possible.
- Ensure distribution of clean heating energy and energy efficient heaters is facilitated in the provision of winterisation items, combined with safety training and heat insulation measures, as appropriate.
- Where reliable grids exist, advocate for the promotion and/or support grid-tie solar photovoltaic (PV) plants to reduce dependency on fossil fuels and decrease expenditure on electricity. Where reliable grids are distant or absent, support access to decentralised clean electricity generation, such as mini-grids or home solar systems, if suitable.
- In the aftermath of a disaster or conflict, reconstruction efforts should be guided by 'building back better' principles and by promoting the rehabilitation and re-purposing of existing buildings and infrastructure where applicable.

RECOMMENDATIONS

- Coordinate with government, humanitarian, development and private sector actors to continually optimise the electricity options available to refugees and host communities by introducing technological innovations and new approaches to service delivery.
- Create a culture of energy efficiency by designing and upgrading community facilities and shelters to be energy efficient, choosing energy efficient appliances and providing energy efficiency training. As much as possible, consider alternatives to the distribution of short-lived low-quality products and ensure selection of quality components and appliances through compliance with appropriate manufacturing certifications. Promote the use of components and appliances that are more reparable, re-usable and recyclable.
- Promote the salvaging of solid waste found in humanitarian settings for reuse and re-purposing in a safe and dignified manner. Humanitarian settings provide opportunities for inventive reuse of materials.
- Provide capacity-building activities for the local communities and make sure local labour is trained and sensitised on integration of both Disaster Risk Reduction (DRR) and environmentally-friendly practices in construction.
- Complement shelter programming with blue - green infrastructure networks and resilient farming and gardens.
- Integrate rainwater capture and greywater capture into shelter and facilities designs.
- Consider including environmental training and awareness sessions into S&S programmes to build knowledge and skills necessary to address environmental issues and sustainable resource management.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE SUSTAINABILITY OF THE SHELTER AND SETTLEMENT SECTOR IN HUMANITARIAN RESPONSES

Environmental screening/assessment and planning

Exposure to disasters caused by natural hazards, environmental degradation and conflict over scarce natural resources pose serious risks to the protection and well-being of displaced people as well as host communities, while threatening the long-term sustainability of settlements. In line with DG ECHO's Thematic Policy on Shelter & Settlements[30], partners should consider the environmental aspects and natural resources management at the earliest opportunity of programme development and ensure the settlements and their inhabitants are protected from natural hazards.

Due to the complexity of such interventions and the extent of the environmental impact they can unintentionally lead to, an environmental assessment/screening of a proposed area of intervention should be undertaken, considering also the impacts on the host populations' current and future needs for natural resources. There are a number of environmental screening/assessment tools currently available, some of them are outlined below, however it is also possible to choose a different tool, based on particular needs and which is suitable for a specific context. The outcomes of such an exercise should guide the decision-making process with regards to the geographical location of humanitarian settlements, the definition of site carrying capacity and settlement layout, when conceiving a new settlement, a settlement extension, when redesigning an existing area and when decommissioning a site.

When undertaking an environmental screening/assessment of the intervention area, the settlement planner should ideally work closely with environmental experts. By planning the locations of specific settlement areas based on climate, environmental and natural hazards, the protection of sensitive ecosystems and the implementation of mitigation strategies against risks (e.g., landslides, flooding) can be effectively addressed. The screening/assessment exercise should identify and analyse potential environmental impacts and risks in the area of intervention and should be supported by an environmental report prioritising the strategies to mitigate them, using the guiding points below:

1. Pre-crisis access to and use of local natural resources, including energy and construction materials, water sourcing and waste management.
2. An overview of the environmental impacts of the crisis, outlining specific environmental risks, unmet basic needs of affected people that could lead to adverse impacts on the environment and potential negative environmental consequences of the humanitarian response.

[30] https://ec.europa.eu/echo/system/files/2017-12/doc_policy_n9_en_301117_liens_bd.pdf

3. Hazards linked to extreme weather events (flooding, landslides, erosion, droughts, tropical storms) in the area of implementation, that could lead to further negative environmental consequences.
4. Opportunities and threats linked to resource management in the area of implementation. There are several important aspects concerning the natural resources in a specific area that should inform the settlement design:
   - availability, value and importance of natural resources
   - vicinity of protected natural habitats, ecosystems and cultural or spiritual sites
   - requirements of displaced and host communities (water, construction material, energy)
   - current local practices of natural resource management
   - main drivers of resource scarcity
   - availability of the local resources in the long term (taking into account climate change and other trends)
   - possibility of conflicts over limited availability of resources
5. An environmental degradation mitigation strategy centred on minimising the negative environmental impacts of the shelter and settlement intervention, which should be integrated into operations and monitoring processes.

** For considerations regarding site decommissioning refer to the CCCM chapter.*

Settlement level considerations

When implementing a shelter and settlement project, it is important to consider the impact of the interventions on the host population's needs for natural resources. A substantial increase in population density in an area may trigger conflict with host populations over limited resources. In these situations, an environmental management plan focused on energy access, fuel supply, livelihood opportunities including livestock grazing, agricultural production and other income generating activities that depend on natural resources, should be developed. For new or larger settlements, and environmental specialist will be required to ensure the management plan is sufficient to address the complex range of environmental impacts and hazards. The use of environmental screening/assessment tools, while necessary, is not a substitute for specialist expertise in large complex projects.

** For additional information regarding environmental management plans, refer to the Community-based environmental management plan section of the CCCM chapter of this document.*

Locating settlements close to existing infrastructure systems, facilities and services can reduce the environmental impacts associated with building and setting up new ones. However, attention needs to be paid to assessing the absorption capacity of these existing systems as increased pressure from displacement crises can result in conflicts between displaced and host communities. The development of basic services, facilities and infrastructures should take into account local development plans and priorities and seek to develop and reinforce existing national systems in a well-planned network that serves a larger area for both displaced and host communities. This has the potential to diminish the environmental impact and forge cooperation between communities.

Retaining trees and other vegetation as much as possible on sites will stabilise the soil and enhance the protection against landslides and erosion even on flat sites. Using tree-shade, where feasible, as an external shading strategy will decrease cooling loads and as a result reduce electricity consumption. Moreover, trees can provide significant improvements in the quality of the environment, including their ability to reduce CO_2 emissions and air pollutant concentrations and maximise protection from extreme weather events. Keeping the disruption of natural drainage at a minimum and using the natural contours for services such as roads, pathways and drainage networks will minimise erosion and flooding risks. Establishing drainage channels, piped drainage runs under roadways or planted earth banks will prevent soil erosion further.

The extra demand for fuel-wood and shelter material, are known causes that accelerate negative environmental impacts through deforestation, leading also then to desertification. Ecosystem conservation and reforestation projects can be a good way not only to mitigate the negative environmental impacts but also offer resource efficient livelihood opportunities. The reforestation should focus on drought resistant vegetation and can be linked to food security. Fruit forests offer direct provision of food, while sustainable forest management initiatives can generate income through sustainable building material supply. The reforestation efforts have to be complemented with other activities that diminish the needs for deforestation, notably, finding alternative cooking fuels and delivering shelter responses that are based on sustainable material sourcing.

** For additional information regarding sustainable forest management and tree planting, refer to the CCCM chapter of this document.*

In line with DG ECHO's Thematic Policy on ECHO Shelter & Settlements[31], partners should ensure the response makes shelter and settlements more resilient and safer from hazards and risks. Measures include strengthening the built environment through hazard risk analysis and mapping of the intervention sites, hazard resistant construction, safety standards and the introduction of necessary preparedness actions, such as early warning, evacuation and protective shelter. This is also an environmental measure in itself as it will reduce damage during future disasters and thus reduce the post-disaster waste and need for new shelters to be built, which would require additional materials and put further pressure on the environment.

** For additional information regarding disaster preparedness and risk-informed approach, refer to the DG ECHO's Disaster Preparedness Guidance Note[32] and the cross-cutting chapter on Risk-informed projects*

USEFUL ENVIRONMENTAL CHECKLISTS AND SCREENING/ASSESSMENT TOOLS:

Rapid Environmental Assessment: A methodology for rapidly assessing and analysing the environmental context of a particular crisis or disaster. Applicable shortly before a disaster and up to 120 days after a disaster begins.

The Nexus Environmental Assessment Tool (NEAT+): A rapid and simple project-level environmental screening tool that allows quick identification of issues of environmental concern

The Climate, Environment and Disaster Risk Reduction Integration Guidance – CEDRIG: An instrument that aims to help development and humanitarian actors reflect whether existing and planned strategies, programmes and projects are at risk from climate change, environmental degradation and natural hazards

ICRC sustainable construction tool: the tool is a design-support tool developed to enhance sustainable decision making for construction projects in the humanitarian sector, worldwide. It is currently in its pilot rollout phase within the ICRC. Access will be later extended to other humanitarian agencies and NGOs.

VEHA – tool: the tool has been designed as an online resource for practitioners and professionals working in the response, planning and management teams. Sector planning guidance allows to environmentally align your project strategy design while the field Implementation guidance is useful for the design and execution of humanitarian activities in the field.

Environmental Checklist for Shelter Response: An instrument that informs environmentally sustainable shelter programming by making key information about environmental considerations, impacts, concerns and opportunities relevant to shelter and settlements programming available and accessible to Shelter Cluster partners

Assessing woodfuel supply and demand in displacement settings: A methodology that assesses the fuelwood demand and the associated challenges; the fuel supply, including woody biomass availability, land cover classification, and changes; and identifies intervention options to address issues related to energy access, NRM, and livelihood opportunities

UNHCR site assessment form: A multi-sectoral site assessment form includes key guidelines for selection of new sites and the extension of existing sites, incorporating aspects from the Nexus Environmental Assessment Tool (NEAT+) as well as contributions from WASH, energy and environment sector.

USEFUL LINKS AND RESOURCES:

UNHABITAT, 2020, Settlement profiling tool: a spatial analysis framework for settlements accommodating displaced populations

UNHCR/FAO, 2018, Managing forests in displacement settings: Guidance on the use of planted and natural forests to supply forest products and build resilience in displaced and host communities

[31] https://ec.europa.eu/echo/system/files/2017-12/doc_policy_n9_en_301117_liens_bd.pdf

[32] https://civil-protection-humanitarian-aid.ec.europa.eu/system/files/2022-02/dg_echo_guidance_note_-_disaster_preparedness_en.pdf

Material selection and LCA of shelters

Material selection and construction techniques should be taken into consideration early on in the planning phase to ensure safe, hygienic, reliable, affordable and environmentally sound systems. In order to holistically evaluate the sustainability of a shelter response, the shelter type should be evaluated comprehensively, considering a range of characteristics, to ensure their adequacy as well as environmental sustainability. One of the frameworks that allows the comparison of different design options through a multi-criteria decision analysis is the LCA (Life Cycle Analysis) trans-disciplinary framework. The aim of the LCA framework is to find the best compromise between costs, environmental impacts and functionality of a specific shelter. An example of such methodology can be found further down in this document. It is important to note that while it is instrumental to employ the LCA when deciding about the most appropriate S&S response in terms of environmental sustainability, DG ECHO does not make it mandatory to implement at this stage.

The selection of a specific construction material and construction technique will have ramifications and consequences beyond the shelter response. As such, the sourcing of natural resources such as water, timber, sand, soil, grasses, and fuel (for firing bricks and roof tiles) should be risk-informed and backed with the screening/assessment exercise outcomes. Procuring timber, bamboo or any related products may pose serious environmental threats, therefore attention should be put on procurement from certified local or international suppliers (Forest Stewardship Council-FSC, Sustainable Forestry initiative-SFI, American Tree Farm system-ATFS). If certification cannot be obtained, humanitarian organisations should seek expert advice on sourcing, to ensure the timber procured is sourced uncontrolled or illegally, causing forest loss. Furthermore, if the source of materials cannot be defined organisations should seek compensating, at least partially, for the timber they use. There are different mitigation actions that can be undertaken, for example in form of reforestation and/or critical natural ecosystem restoration that can be carried out in areas adjacent to the project site or elsewhere in the region or country of intervention.

The LCA of a shelter response should take into consideration the following environmental impacts:

- the embodied impacts of shelter materials, which are produced during extraction, production, transportation of materials, the construction related activities as well as the ones associated with the disposal of construction materials after the end of their life-span;
- the shelter use impacts, which are associated with energy consumption and other operational and maintenance processes and activities.

More specifically, the following criteria should be analysed:

- Materials used - prefer those that do not deplete local natural resources or contribute to long-term environmental damage and produce minimal waste;
- Material CO_2 footprint;
- Direct damage to natural habitat caused by sourcing a specific material;
- The direct land footprint of settlements and any related garden/agriculture areas;
- End of life options (possibility for salvaging and reuse, recycling or re-purposing of the materials used, including debris);
- The shelter lifespan and covered living area should be included in the equation, to ensure comparability across different shelter typologies.
- The shelter's ability to contribute to other sustainability outcomes like water and energy conservation

By giving a comprehensive overview of the shelter response and a careful cost-benefit analysis taking into consideration the lifespan of the structures, the covered usable/living area and the CO_2 emissions linked to the structure, the LCA allows informed decision making leading to the selection of the most appropriate shelter design to address the needs in a specific context.

Sustainable materials

Sustainable materials can be defined as materials that do not deplete natural resources and have no adverse impact on the environment when used. In practice the shelter response can preserve natural resources in many ways by focusing on the procurement modalities and the supply chain of sustainable materials:

- Avoiding using scarce or non-renewable materials;
- Creating less waste, through sustainable supply and logistics;
- Over-specifying performance requirements may exclude sustainable materials from procurement chains - consider the overall net positive impact of your material selection;

- Matching demand to supply, therefore delivering need-based sheltering solutions;
- Using reclaimed, rather than new materials and preventing waste going to landfill;
- Ensuring restoration and replenishment of renewable construction materials (e.g., reforestation) through sustainable resource management;
- Re-use materials or components in situ, hence reducing transport of materials and associated carbon emissions;
- Use materials or components produced with little processing (with low embodied energy);
- Use manufactured materials or components with significant and known recycled content;
- Use materials that have been designed for ease of reuse and recycling at end-of-life;
- Avoid shelter materials or treatment chemicals that are known to produce harmful breakdown chemicals at the end of their lifespan;
- Promote the use of multiple sources, the reuse of salvaged materials and the production of alternative materials;
- Planning debris management immediately after the crisis will promote the salvaging of debris for reuse and re-purposing;

USEFUL LINKS, RESOURCES AND TOOLS:

UNHCR, 2020, Shelter and sustainability: the comparative overview seeks to examine the sustainability of shelter designs, the lifecycle of the materials used and possible strategies to increase the sustainability of humanitarian responses and reduce their carbon footprint

WWF, 2018, Building Material Selection and Use: a guide on better practices for environmentally responsible selection, sourcing, use, and disposal of materials during disaster reconstruction

Global Shelter Cluster, 2021, Shelter Methodology for the Assessment of Carbon (SMAC): a tool to enable humanitarian operations to assess the level of carbon dioxide equivalents (CO_2 eq) of shelter assistance after a disaster.

Enhancing the sustainability of communal facilities and shelters

Water use reduction

Maximising the availability of potable water and its rational use not only conserves water but also reduces emissions associated with pumping and treatment. This can be managed through a water conservation plan.

Consider the following actions when developing a water conservation plan:

- Establishing baseline water usage needs, taking into consideration the rainfall patterns and climate change trends.
- Channelling drainage to soak pits and even more ideally, harvesting rainwater from roofs and excess channelled to soak pits. This is to avoid that communal facilities contribute to erosion and gullying, and groundwater depletion.
- Proper maintenance and regular clearing of drains to reduce flooding risks.
- Installing a rainwater capture system and accessing and upgrading plumbing to allow captured rainwater to be used for non-potable uses.
- Setting up greywater reuse systems for sanitary purposes such as flushing toilets.
- When applicable, equipping the facility with high-efficiency plumbing fixtures, low-flow faucets, dual-flush toilets or other innovative technologies to maximise water savings, regardless of whether or not rainwater is used in these faucets.
- Where possible, planting new or protecting existing vegetation and plants around facilities, as they can provide important shade, dust and erosion control, and livestock-barrier functions. Landscape plants should be indigenous or well-suited to climatic conditions and should not require watering. If irrigation is needed, it should be well-planned and managed for maximum water retention. Moreover, safe and inclusive green areas, have potential to have positive impact on mental health and offer potential for food production and healthy diet education.

** For more information about possible water reduction actions, refer to the Water supply section of the Water, Sanitation, and Hygiene chapter.*

Sustainable energy supply

A lack of safe access to sustainable energy poses serious health and environmental risks. The resulting environmental degradation can be long-lasting, expensive and difficult to reverse. Small, short-term solutions are relevant in all displacement situations, but should be planned in relation to larger community scale systems, which might provide more cost-efficient solutions and eventually contribute positively towards host community relations. Energy consumption is linked to electrification on a household and facility level and depends on several factors. By considering climate, passive as well as nature-based approaches to the heating or cooling of structures and appropriate construction materials, the energy efficiency of the response can be significantly improved leading to less energy consumption.

To set up and promote environmentally sustainable energy supply systems the following actions should considered:

- Determining whether existing energy supply systems have a negative environmental impact on natural resources, health and safety, (e.g. through carbon emissions from burning fossil fuels).
- Establishing baseline energy usage needs is essential when setting up an energy conservation plan. Understanding the energy needs of displaced populations, host communities and other stakeholders engaged in the humanitarian response is key to deliver the most appropriate, clean and sustainable energy solutions.
- Considering adopting solar power (PV) systems to power compounds, water systems and communal facilities (schools, health centres, etc.) as well as site/settlement level lighting. A grid-connected PV system is preferable as it does not require a battery bank and is much easier to maintain. When considering adoption of renewable energy systems, financial costs (capital installation, operation and maintenance ones) should be compared with other alternative technologies over a period of time relevant for the context, or alternatively over the lifecycle of the equipment being considered with the final aim to define which energy technology is more efficient in a specific context and make an informed decision. Renewable energy systems require expert maintenance and management, which should be planned for and provided (see section on financial implications under General Considerations). All systems must be properly secured to withstand natural hazards. Measures should also be taken to minimise the risk of equipment been stolen or vandalised, for which community endorsement and engagement is essential.
- Replacing inefficient equipment/fixtures/devices and features with energy efficient ones, preferably using renewable energy (e.g., LED bulbs, solar fridges for vaccination, solar lamps, energy efficient cooking stoves). Distributions of solar lamps and other electric appliances should however come hand in hand with considerations on repair shops, favouring supply of repairable and recyclable good quality devices over other cheaper shorter-lived options to not create other negative environmental impacts from excess waste. As much as possible, consideration should be given to their transport for safe disposal or to recycling/repurposing workshops and plants, to avoid their uncontrolled disposal and burning in open pits.
- Considering energy efficient shelter design and passive construction approaches will not only reduce the environmental impacts of a response but also operational and maintenance costs related specially to heating and cooling.

** For details regarding clean cooking energy in humanitarian settings, refer to the Clean cooking energy and technologies section of the Food Assistance chapter of this document.*
*** For details on community engagement refer to the cross-cutting chapter on Protection mainstreaming.*

USEFUL LINKS AND RESOURCES:

NRC, 2017, Sustainable Settlements: a framework of existing and emerging technologies and methodologies to improve the social, environmental and economic sustainability of settlements

UNHCR, 2019, Global strategy for sustainable energy: the strategy seeks to increase the sustainable use of renewable energy sources to minimise environmental impact of humanitarian responses

Building back better (BBB)

A more resilient humanitarian response depends on a shift to sustainable practices, hence returning to a "business as usual" approach after a crisis will not deliver a sustained long-term recovery that also improves well-being and reduces inequality. BBB is therefore a key approach for a resilient recovery. The principles of BBB focus on the understanding and the reduction of the S&S response related risks and vulnerabilities and promote better and adapted practices in settlement planning and

the approaches to construction and preparedness. In line with DG ECHO's Thematic Policy on ECHO Shelter & Settlements[33] partners should integrate the approach in the S&S response and ensure longer term sustainability of humanitarian actions and promote greater resilience in recovery by systematically addressing the root causes of vulnerability.

** For details on risk informed response refer to the cross-cutting chapter on Risk-informed projects.*

USEFUL LINKS AND RESOURCES:

Shelter Cluster Malawi, 2015, Build back better: The guidance focuses on strategies that aim at building flood-resistant communities

UNISDR, 2017, Build Back Better in recovery, rehabilitation, and reconstruction: the guide focuses on capacity building through the creation and strengthening of recovery-focused relationships and the establishment of planning and coordination mechanisms

The World Bank, 2018, Achieving resilience through stronger, faster, and more inclusive post-disaster Reconstruction: the study investigates the potential benefits of building back better and how countries can strengthen their resilience to natural shocks through stronger, faster, and more inclusive post-disaster reconstruction

Blue - green infrastructure networks

Humanitarian settlements are facing increasing climate risks and threats to environmental sustainability. In attempts to address these challenges, growing attention is being paid to the potential role of green (such as trees, parks, gardens, playgrounds and forests) and blue (rivers, lakes, wetlands, and water utilities) spaces, often approached through the concept of green and blue infrastructure. Blue-green infrastructure refers to a network of infrastructure elements that promote sustainable approaches for solving settlement-related, climatic as well as environmental challenges by building with nature and through nature-based solutions. The main components of this approach include using nature-based solutions for storm water management, climate adaptation of facilities, shelters and infrastructures. Nature based solutions are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help climate change mitigation and build resilience. The benefits can be the reduction of heat stress, increasing groundcover, sustainable food production, better air quality, renewable energy production, water conservation, and healthy soils. Nature-based activities can create new, green jobs and enhance existing nature dependent sectors. They can decrease public health costs through their health co-benefits and green infrastructure and vegetation not only contribute to decreasing pollution thereby reducing associated health risks**,** but also promote healthier lifestyles and improve mental health.

USEFUL LINKS AND RESOURCES:

IFRC, 2021, Nature-based solutions: The fact sheet describes the concepts related to nature-based solutions and why are they so critical to helping communities reduce disaster risk and address climate change as well as environmental degradation.

BOND/IIED, 2021, Nature-based solutions in action-Lessons from the frontline: The case studies show nature-based solutions in action in a wide range of contexts.

FEBA, 2021, Nature-based solutions in humanitarian contexts: These technical key messages emphasise the relevance of Nature-based Solutions for the humanitarian sector, particularly in the context of strengthening climate and disaster resilience

[33] https://ec.europa.eu/echo/system/files/2017-12/doc_policy_n9_en_301117_liens_bd.pdf

WATER, SANITATION AND HYGIENE

IOM water scheme at Kutupalong Balukhali Expansion Site refugee camp. Courtesy of IOM Bangladesh

WASH programming carries one of the highest risks of negative environmental impacts among humanitarian activities. However, it also represents an opportunity to minimise potential environmental impacts by thorough assessments/ screenings and robust environmental management. Environmental screenings/assessments and mitigation strategies should accompany all construction activities throughout the programme cycle and are imperative during programme conception to determine mitigation opportunities and environmental risks before implementation. Inadequate implementation of WASH programming can put communities at risk from avoidable environmental hazards linked to water scarcity, disease breakouts, land and soil degradation, loss of biodiversity, pollution of water sources and soil, and accumulation of waste. When working on WASH projects it is important to consider the environment and the lifecycle of assets. Projects with good environmental planning and management help reduce short-term risks to those affected, as well as supporting disaster risk reduction and reducing exposure to natural hazards in the future, and hence decreasing household and community vulnerability.

REQUIREMENTS:

- Conduct a project-level environmental screening/assessment in coordination with fellow partners, using the Nexus Environmental Assessment Tool (NEAT+), or a similar tool to identify negative environmental impacts of the planned interventions considering also the impacts on the host populations' current and future needs for natural resources.
- Prepare an environmental report based on the findings of the environmental screening/assessment outlining the environmental risks associated with the response and the measures planned to mitigate them.
- Include environmental parameters or mitigation measures in the Monitoring and Evaluation plans of WASH programmes, based on the environmental risks and potential negative impacts identified through the risk analysis and in line with the environmental requirements applied for that context.

- Calculate water balance (supply vs demand) based on principles of sustainable integrated water resource management at the catchment level taking into consideration demand from both displaced and host populations.
- Identify the most appropriate groundwater or surface water source taking into account possible environmental threats. Consider all water uses, domestic and water for livelihoods, the seasonal variations and mechanisms for accessing drinking water. Ensure information sharing and linkages between different sectors to estimate usage and capacity of water sources.
- Work with stakeholders to locate water points and establish maintenance strategies with clear responsibilities and include future needs for sustainable water access.
- Favour rehabilitation of existing water points and sanitation facilities with DRR-inclusive measures.
- Ensure appropriate water point drainage and look for sustainable opportunities to reuse water (irrigation, production of construction materials, etc.). If possible, ensure that greywater is separated from septic systems to facilitate its reuse.
- Ensure as much as possible that runoff/spent water from boreholes, hand pumps and wells is productively reused (e.g. for irrigation).
- Prioritise the use of renewable energy in the operation and maintenance of the provided water services. Provide training for follow up and for ensuring proper maintenance/small repairs of renewable energy solutions. In cases where renewable energy is not suitable (this should be justified), ensure that the generators used for water pumping are of well-suited size and storage tanks, pumps and pipes used for water pumping are designed jointly to maximise energy and cost efficiency of the system.
- If water trucking is included in the programme, provide a justification. If accepted as justified, ensure that the renewal of the water source can be ensured (i.e. water is not being abstracted faster than it can be replenished) and ensure an exit strategy from water trucking in the short to medium term. Water tracking should be reviewed for alternatives every 6 months.
- Prioritise treating water over bottled water. Exceptions for using bottled water can be made for the short term in specific contexts (people on the move). In this case, favour larger bottles over smaller ones and consider the use of reusable bottles. If bottled water is delivered, an appropriate waste management system for the bottles must be established.
- Where surface water is used and treated with chemicals, ensure that the residual sludge is properly disposed of, including in instances when filtration membranes are used.
- Ensure integrated vector management to avoid the use of pesticides, as much as possible.
- Integrate water efficiency measures into programme design (water saving technologies). Monitor, repair or notify authorities regarding leaks. In cases where major investments in water network infrastructure are needed, liaise with development actors to seek the necessary funding if the political context allows.
- Design and build excreta management facilities based on risk assessment of potential contamination of nearby surface or ground water source, taking into consideration current and future climate related risks.
- Apply existing national standards and ensure that any extra sanitation load placed on existing systems does not affect the environment or the communities.
- Where Faecal Sludge Management (FSM) facilities/transport/treatment are required, favour nature-based solutions and ensure a risk-based approach based on the most suitable disposal or reuse route of the liquid and solid components of the treated faecal sludge.

- Ensure that sanitation facilities include appropriate waste disposal options for the safe and discrete disposal and collection of menstrual products and other hygiene items. Ensure local practices are identified and taken into consideration, to avoid unnecessary waste. Where appropriate and available, include reusable menstrual products and ensure information is provided on how to use them. Provide the necessary equipment and appropriate facilities for the adequate washing and drying of menstrual products.

- In case landfills and wastewater treatment plants are necessary and justified, they should be controlled and sanitary. A systematic process of classification of project risks should be followed that takes into consideration parameters such as size, location, future climate change related risks etc. Depending on the results of this classification, an Environmental Impact Assessment should precede their set up/construction done in coordination with local government and other relevant actors, including a management plan once the operation is over.

- Under no circumstances dispose of any treated or untreated biological waste like faecal sludge into surface water like lakes or rivers.

RECOMMENDATIONS

- Link up the water extraction activities in humanitarian settlements to a groundwater monitoring initiative, if it exists or set up a new one, to ensure monitoring and recharge of the water sources.

- Wherever possible, water usage monitoring systems should be installed or good practices established in consultation with the local communities and local water authorities (National, Regional, Municipal) to ensure IWRM includes practices at watershed level (not just in camp/settlement contexts).

- Water conservation should be prioritised and promoted as much as possible.

- Consider including environmental training and water conservation awareness sessions into WASH programmes to build knowledge and skills necessary to address environmental issues and sustainable resource management.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE SUSTAINABILITY OF THE WASH SECTOR IN HUMANITARIAN RESPONSES

Environmental screening/assessment and planning

The potential negative environmental impact of WASH activities is widely recognised. With the aim to ensure that the short-term benefits of a chosen WASH response are not at the detriment of the longer-term impact on natural ecosystems and the health as well as livelihoods of the affected populations, an environmental assessment/screening of the proposed area of intervention must be undertaken. Given the complexity of the potential impacts this should be done in collaboration with an environmental specialist. In line with DG ECHO's Thematic Policy on Water, Sanitation and Hygiene[34], humanitarian WASH interventions should be preceded by a detailed needs assessment with causal analysis, and informed by environmental impact considerations, therefore it is recommended that the needs assessment and the environmental screening/assessment are carried out at the same time to manage resources more effectively and efficiently. They should furthermore comply with local standards and codes, especially if those supersede the ones outlined in this guidance. If the WASH intervention represents a small component of the overall project (e.g., construction of toilets in the context of a health centre) it will not be necessary to carry out the environmental screening/assessment. Timely WASH assessments provide the basis for planning, implementation, and prioritisation of all WASH activities and in many settings are an important factor in saving lives.

** For detailed information regarding the expected outputs of the environmental screening/assessment, refer to the Environmental screening/assessment and planning section of the Shelter and Settlements chapter.*

[34] http://ec.europa.eu/echo/files/policies/sectoral/WASH_policy_doc_en.pdf

Water supply

In line with DG ECHO's Thematic Policy on Water, Sanitation and Hygiene, WASH interventions in water scarce areas should seek to integrate adequate Disaster Risk Reduction strategies such as monitoring of groundwater depletion, increasing rainwater collection potential, improving water distribution targeting, reducing water use wastage, and addressing water scarcity through an integrated approach. By avoiding the overexploitation of water resources, not only is the risk of failing water supplies reduced, but also conflict among affected populations over the limited number of resources can be avoided. Water supply planning should be based on identifying the most appropriate groundwater or surface water sources, by taking into account also the potential environmental impacts that it may cause. It should consider seasonal variations in water supply and demand, and mechanisms for accessing drinking water, domestic water and water for different livelihoods activities and identify different sources of water, suppliers and operators. WASH interventions should be designed to reduce or avoid conflict among water users and ensure water efficiency. In addition to the environmental screenings/assessments, undertaking community consultation to understand needs, cultural and traditional practices regarding local water use, including those of women and marginalised groups will provide a solid base to design a sustainable and inclusive response.

** For details on community engagement refer to the cross-cutting chapter on Protection mainstreaming.*

Integrated Water Resource Management (IWRM)

In line with DG ECHO's DG ECHO Disaster Preparedness Guidance Note the need to consider IWRM is essential in areas prone to water insecurity, disasters or that are environmentally fragile. In a watershed, water extraction/pumping measures taken upstream may result in negative impacts downstream (e.g. diverting water from small rivers to increase irrigation).

IWRM is a framework designed to improve the management of water resources based on four key principles:

1. Fresh water is a finite and vulnerable resource essential to sustain life, development, and the environment;
2. Water development and management should be based on a participatory approach, involving users, planners, and policy makers at all levels;
3. Women play a central part in the provision, management, and safeguarding of water;
4. Water has an economic value in all its competing uses and should be recognised as an economic good.

IWRM is therefore not a specific procedure on how water should be managed, but rather it is a broad framework in which decision makers can collaboratively decide the goals of water management and coordinate the use of different tools to achieve them. It guides the way forward for efficient, equitable and sustainable development and management of the world's limited water resources and for coping with conflicting demands. There are differences in water availability from region to region. In addition, there is variability of supply through time as a result both of seasonal variation and inter-annual variation. All too often the magnitude of variability and the timing and duration of periods of high and low supply are not predictable; this equates to unreliability of the resource. In many regions, the availability of water in both quantity and quality is being severely affected by climate variability worsened by climate change. At the same time, the demand is increasing as a result of population growth and other demographic changes, coupled with agricultural and industrial expansion.

DRR in WASH interventions

The extent to which DRR considerations need to be addressed in WASH interventions will be influenced by the type of hazard faced and level of vulnerability. DG ECHO's Thematic Policy on Disaster Preparedness requires all humanitarian actions to be risk-informed, meaning that analysis and design should be based on a sound assessment of risks and the intervention should seek to reduce immediate and future risks:

- Directly reducing risk to people.
- The "risk-proofing" of interventions to protect them against future hazards.

Water reuse - rainwater and greywater collection

Rainwater harvesting is recognised as an improved source of water and promotes both water and energy conservation. Collecting rainwater reduces the flow of storm water and mitigates soil erosion and flood hazards. Rainwater is suitable for irrigation and toilet flushing without requiring a filtration system. The implementation of rainwater harvesting systems for communal facilities with high daily needs (e.g. health centres, reception facilities, etc.), and in areas with long dry seasons as well as where other sources of water are hard to access, should be carefully planned and implemented to store relatively large amounts of water for use.

Given the numerous problems of water scarcity, an effective method of using alternative resources is the greywater reprocessing and its reuse. Greywater refers to wastewater from baths, showers, washbasins and the kitchen. Greywater can be reemployed for watering vegetable gardens, in construction activities (e.g., brick-making), for irrigation of agricultural land and in sanitation facilities, as long as measures are taken to prevent greywater from going septic. Appropriate water point drainage at household and communal washing, bathing and cooking areas and hand washing facilities represents a valuable source for reuse of water. In the simplest re-use systems, greywater is stored and subsequently used, untreated, for flushing toilets and irrigation (other than edible plants). The greywater used in agriculture, however, needs to conform to the established health and environmental standards. The high nutrient content of the wastewater reduces the need for fertilisers and the reliability of supply helps increase agricultural productivity. It is important to note that discharging effluent from septic tanks and cesspits directly to gardens and agricultural land can pollute groundwater aquifers and create major environmental hazards. Greywater reuse approaches can either function in a standalone capacity to reduce the volumes of water required and waste water produced by a household or community, or as part of a broader waste management system.

Renewable energy powered water pumping

Pumping water from boreholes and/or moving it through piped networks within settlements requires significant amounts of energy which in humanitarian context is generally provided by diesel generators with all its widely recognised negative environmental and health impacts. Changing to Solar Powered Water Schemes (SPWS) will contribute to a healthier, more sustainable and cost-effective humanitarian response. SPWS use photovoltaic energy solutions for water supply systems and are considered one of the most cost-effective solutions in humanitarian contexts due to several reasons:

- the power grid is unreliable or in-existent,
- fuel can be expensive to transport and access to it might be limited or interrupted,
- solar irradiation is fairly constant and high.

Depending on the design, SPWS may leave a surplus of solar energy. If this is the case, making use of underused power capacity at existing SPWS will maximise the use of solar energy in humanitarian operations. WASH interventions thus have the potential to maximise energy harvesting and channel it to meet the energy needs not only of affected population but also of the humanitarian organisations working in the response implementation. The use of wind for electricity generation can also be considered, if there is reliable wind speed. It can be employed either mechanically or for the production of electricity to run pumps. Wind powered systems can be implemented as a stand-alone action or to complement solar systems. Mechanical wind pumps can run 24 hours compared with solar powered systems which run only during the day.

Constructed wetlands

Constructed wetlands are one example of nature-based solutions that can be rolled out as part of WASH interventions. Its design should be done with relevant experts to target specific contaminants and employing specific and non-invasive plants. A constructed wetland is an artificial wetland to treat sewage, greywater, storm water runoff or industrial wastewater. They can be used as secondary treatment process for black water or primary treatment for greywater and for controlling storm water runoff and mitigate soil erosion. Similarly, to natural wetlands, constructed wetlands act as a bio-filter and can remove a range of pollutants (such as organic matter, nutrients, pathogens, heavy metals) from the water. Some constructed wetlands may also serve as a habitat for native and migratory wildlife, although that is not their main purpose. Vegetation in a wetland provides a substrate (roots, stems, and leaves) upon which microorganisms can grow as they break down organic materials. When combined with other physical treatment methods such as bio-digesters, constructed wetlands usually clean wastewater to the point it is safe for irrigating crops and can even be made potable with a few additional treatment processes. Constructed wetlands can be used after a septic tank for primary treatment (or other types of systems) in order to separate the solids from the liquid effluent. Their design should be done with relevant experts to target specific contaminants and employing specific and non-invasive plants. Constructed wetlands are characterised by relatively low-cost construction and maintenance, but require relatively large areas, high operational responsibilities and technical expertise, which can make it difficult to implement in humanitarian context where land access is scarce.

Vector control

Maintaining a clean environment in and out of facilities to control infections and pests as well as the use of natural products (e.g., mosquito-repellent plants) and planning for a integrated pest management (IPM), will ultimately prevent overuse of vector control chemicals. IPM is a concept that seeks to reduce the use of harmful chemicals, targets specific pests, increases the use of safer alternatives and techniques and limits exposure of applicators, humans and other organisms to harmful substances. If products currently used for vector control contain toxic components, they should be phased out and safer alternatives found.

Several basic environmental engineering measures reduce vector breeding, including:

- Proper disposal of human and animal excreta, properly functioning toilets, and keeping lids on the squatting hole of pit toilets;
- Proper disposal of solid waste to control insects and rodents;
- Ensuring good drainage in settlements;
- Draining standing water and clearing vegetation around open canals and ponds to control mosquitoes;

Such measures will reduce the population density of some vectors; however, it may not be possible to have sufficient impact on all the vector breeding. If so, consider localised chemical control or individual protection measures.

** For information regarding biological and non-chemical vector controls, refer to the Hazardous materials and substances section of the Public health chapter.*

Water efficiency through water saving devices

Water saving devices can simply use less water while yielding comparable performance. This can be particularly beneficial in water-scarce contexts. The strategy includes the use of water-efficient fittings and equipment and putting in place a proper monitoring system for usage and leak detection. Possible approaches include:

1. Above ground pipes to allow for easy maintenance and repair
2. Low flush toilets, dry toilets, waterless urinals and water efficient shower heads
    - Recirculating Hot-Water Systems
    - Water-Saving Faucets (sink faucet aerators)
3. Self-closing taps

Groundwater recharge and monitoring

Groundwater extraction often exceeds natural recharge, resulting in a progressive decline of the groundwater table and a deterioration of water quality. Together with sound land use in water catchments, building in measures to promote climate resilience will support the protection of recharge areas and spring sources. This can be done by taking into account likely increases in climate extremes and considering upstream as well as downstream users and flows needed to maintain ecosystems. The situation is expected to worsen due to additional pressures from population growth as well as the effect of climate change on the availability and variability of water resources. As such, groundwater monitoring is essential to maintain or improve our water quality and ensure a constant water quantity. This can also be a conflict mitigation measure to prevent conflict among displaced persons and between displaced persons and their host communities over scarce water resources.

Groundwater monitoring is an essential element in any environmental information system as it provides the necessary data input to smart environment management and should be the basis of decision-making process concerning spatial planning and climate change adaptation.

Systematic groundwater monitoring and corrective action can:

- Monitor the long-term sustainability of an aquifer and its water supply and adjust appropriate actions accordingly;
- Identify contaminants, estimate the speed and direction of the contamination flow and narrow down the contamination sources;
- Manage groundwater levels and prevent damage by salt water intrusion, drought or flooding;
- Adapt to climate change by timely issue drought or flood warnings and take appropriate mitigation measures.

Prevention of contamination of water sources due to excreta management

All excreta management facilities should be designed and built based on a risk assessment of potential contamination of any nearby surface water or groundwater source and to minimise damage due to extreme weather events. To avoid contaminating water sources and inform technical design the sanitation facilities should be planned based on an assessment of the local topography, ground conditions as well as groundwater and surface water (including seasonal variations and climate change trends). Defecation near all water sources and water storage as well as treatment facilities must be avoided, therefore adequate distance from all water sources should be ensured. Where possible and for systems with subsurface discharge, conducting soil permeability tests are advised to determine the infiltration rate for the soil, which should inform the minimum distance between containment facilities and water sources.

Ecological sanitation

Ecological sanitation (Ecosan) are sanitation methods and technologies which promote the safe reuse rather than the disposal of excreta and have been mostly implemented in disaster relief for flood-prone areas and locations where excavation is not possible. Different forms of Ecosan used in humanitarian contexts include urine diverting dehydration toilets, and composting toilets. Ecological sanitation makes use of the nutrients and energy contained within human waste and prevents the pollution of surface and groundwater. It is a practical, hygienic, efficient and cost-effective solution to human waste disposal. By using natural processes, it can be recycled into a resource such as natural fertiliser/compost, hence reducing the need for chemical substances. It should be noted that using human waste as fertiliser, where culturally acceptable, is safe when done away from surface water, no waste should ever be disposed of in a lake or river.

The added value of implementing ecological sanitation:

- Human waste is treated, reused/digested at the household or community level and, therefore, there is less chance of contaminating water sources;
- Use of urine as fertiliser and composted human waste as soil conditioner will help income generation through enabling the harvest of better-quality agricultural products in increasing quantities;
- Health and environmental benefits and cost savings for not having to use chemical fertilisers in agriculture.

Dry composting toilets collect urine and faeces in a sealed chamber beneath the toilet pedestal, where microorganisms decompose the mixture of human waste and extra organic matter. Separating water and solids in ecosan systems is preferred, as mixing the resources often prevents their optimal reuse and increases health and environmental risks. If separated from solids, greywater from the toilets can be treated separately, either by a separate greywater treatment system, by a septic tank or by an aerated wastewater treatment system. Dry composting toilets are suggested to offer the best success with reuse of excreta, however the composting processes are quite complicated and do not necessarily provide groundwater protection.

A urine diversion toilet is used to facilitate the separation of human waste products. The bowl usually has two separate receptacles. The opportunities linked to reducing environmental impacts include:

- Preventing pollution of surface water or groundwater – dry toilets do not mix excreta with water and do not pollute groundwater;
- Avoiding eutrophication in surface water bodies;
- Reducing water consumption;
- Using the collected excreta as fertiliser in agriculture;
- Using the collected excreta for biogas production or as combustible bricks (see below).

Composting

Composting is the biological decomposition and stabilisation of organic material, under aerobic conditions (in the presence of oxygen). It recovers organic fractions and nutrients from a combination of human waste and organic kitchen waste and can be employed to reduce organic household waste and produce fertiliser for agricultural purposes. Composting at both household and settlement level is also a good way to reduce the volume of waste requiring disposal.

Biogas energy

Bio-organic waste has immense potential for green energy recovery. Biogas is produced after organic materials (plant and animal products as well as human black water) are broken down by bacteria in an oxygen-free environment, a process called anaerobic digestion. The fermentation of this waste results in biogas that can be converted into heat or electricity, or can be supplied to the grid after refining it to the quality of natural gas. The waste is directed to covered pools where its decomposition results in the release of biogas. What is left – called bio-digestate – can be used as fertiliser. Biogas can generate electric power, thermal energy or fuel for and can be used for communal cooking facilities for example. The impacts for the environment are positive as GHG emissions into the atmosphere are reduced and nitrogen or phosphorus pollution in streams, rivers and the soil around farms is lowered. However, this is a complicated process and highly prone to failure if not managed by a well-trained technician. It should only be considered if the needed expertise is locally available.

Faecal Sludge Management

Environmental challenges to consider when planning sanitation facilities include, but are not limited to, high water tables, unstable sandy soils crowded urban areas and extreme weather events fuelled by climate change. Displacement into urban areas is challenging as well as there is often a lack of available space to implement suitable sanitation infrastructure. WASH interventions will therefore need to be able to offer treatment solutions in the following challenging conditions:

- In high density areas where many people share public toilets, which can result in latrine pits quickly filling up.
- In areas with high groundwater tables and in locations that have challenging ground conditions where pit excavation is challenging and not feasible.
- In areas where existing infrastructure is damaged, following a disaster caused by natural hazards, or in conflict areas where a temporary solution is needed to ensure treatment while the damaged infrastructure is repaired.

The use of land for off-site treatments and disposal should be in agreement with local authorities as well as other stakeholders and nature-based treatments plants given preference. Solutions that tackle ways to reduce the rate at which latrines fill up with faecal sludge and need to be emptied, as well as ways to improve excreta disposal in quicker and safer ways such as biological additives and earthworms are showing positive results and can be considered in these situations as well.

USEFUL ENVIRONMENTAL STANDARDS:

ISO 46001:2019: The standard provides methods and tools for assessing and accounting for water usage, as well as ways to identify and implement measures to optimise water use for organisations of all sizes to be more water-efficient

ISO/TC 282: The standard includes technical, economic, environmental and societal aspects of water reuse and covers both centralised and decentralised or on-site water reclamation, and direct and indirect reuse applications

USEFUL LINKS AND RESOURCES:

NRC, 2017, Sustainable Settlements: the document represents a framework of existing and emerging technologies and methodologies to improve the social, environmental and economic sustainability of settlements

UNEP, 2012, Water Resources Management: the document provides a status report on the application of integrated approaches to water resource management

Global WASH Cluster, 2021. Faecal Sludge Management Sanitation Standards for Emergencies and Terminology Factsheet

UNDP, 2018, Nature based solutions for water: the UN World Water Report

PUBLIC HEALTH

Selection of favourite pictures from West African countries. Photo credit: EC/ECHO

Health and environmental issues are closely linked: the state of the environment, such as air and water quality, directly impacts people's health, while at the same time, health sector activities may impact the environment. The environmental impacts of health interventions can be nonetheless mitigated with a well-designed response, which can act also as an entry point for low-cost and simple ways to contribute to sound environmental management.

One of the main issues is improper healthcare waste management. This can happen for several reasons, such as lack of awareness about the health hazards related to healthcare waste, inadequate training in proper waste management, lack of infrastructure or energy, lack of appropriate regulations or enforcement of existing regulations. Other unintended environmental impacts can come from inadequate incineration practices or technologies, or transporting healthcare waste in vehicles using fossil fuels, both of which result in GHG emissions and the release of pollutants into the air.

REQUIREMENTS:

- Promote systematic integration of WASH, Health, Logistics and other relevant sectors while responding to public health emergencies, to develop comprehensive approaches in addressing health risks and to promote environmentally sustainable practices.

- In contexts where collection and disposal depend on external actors, at least ensure segregation and separate storage inside the healthcare facility (HCF), while working with the HCF managers to set up safe health waste disposal in or outside the HCF. In cases where waste is collected and transported to locations with a dedicated facility for the safe disposal of medical waste, safe transportation of contaminated waste should be ensured.

- Plan waste treatment in accordance with environmental laws and structures de jure and/or de facto ruling the territory to the extent possible, unless the organisation has its own regulatory frameworks pertaining to waste treatment that are more stringent. Where those are absent, use relevant international standards, guidelines and policies and/or the organisation's standards, guidelines and policies according to the most stringent requirements and link with local waste management.

- Low-quality incinerators are not acceptable as they produce toxic emissions and air pollutants, and do not completely sterilise. Dispose of ash from incinerators safely. Instead, invest in improved, local incinerators, centralised treatment and ideally non-burn technologies.

- Ensure adequate drug management and supply to reduce expiration of medical products. Ensure appropriate destruction of expired drugs through local authorities. Medicines and other medical consumables that may expire or damage during deployment must be destroyed in accordance with national protocols and World Health Organisation (WHO) recommendations.

RECOMMENDATIONS:

- Use health facility safety assessment tools as an opportunity/entry point for looking at waste management.

- Promote education and awareness programmes for professionals working in healthcare settings on the link between health and environment and effectively prepare for the additional health risks posed by climate change.

- Enhance the sustainability of facilities and warehouses. Invest in solar or wind power sources and manage power consumption.

- Establish a storage system and segregate waste when it is generated and set up a routine that ensures the use of medicine according to the 'First Expiring First Out' principle.

- Promote circular healthcare systems, by optimising raw materials and minimising waste through up and down-cycling medical materials and developing sustainable procurement guidelines in collaboration with suppliers.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE SUSTAINABILITY OF THE PUBLIC HEALTH SECTOR IN HUMANITARIAN RESPONSES

Waste management

Healthcare waste and its inadequate handling and treatment is a significant issue in a humanitarian health response. If not appropriately disposed of, it leads to possible contamination of water, land and air. It can affect the food chain and increases risk of infectious diseases. All personnel dealing with medical commodities should be familiar with the main categories of medical commodity waste as set out in either national or local waste classification regulations. This includes, but is not limited to, the warehouse, logistics, transport, distribution, health facility, and janitorial staff at each management level of the medical commodity supply chain. The policies should also provide for the continuous monitoring of workers' health and safety to ensure that correct handling, treatment, storage, and disposal procedures are being followed.

Healthcare facility waste types:

Source	Sharps	Pharmaceuticals/Chemical/infectious products
Medical Ward	Hypodermic needles, intravenous (IV) set needles, broken vials, and ampoules	Broken thermometers and blood pressure gauges used masks/gloves, spilled medicines, spent disinfectants
Operating Room	Needles, IV sets, scalpels, blades, saws	Spent disinfectants, waste anaesthetic gases
Pharmacy		Expired medicines, spilled medicines
Warehouses		Expired medicines
Laboratory	Needles, broken glass, Petri dishes, slides, coverslips, broken pipettes	Fixatives, formalin, xylene, toluene, methanol, methylene chloride and other solvents, broken lab thermometers
Vaccination Campaigns	Needles and syringes	Bulk vaccine waste, vials, gloves

Healthcare facilities generate large amounts of waste and because of space and budgetary constraints, incineration is the disposal method of choice. However, there are serious issues associated with burning mixed waste in low tech, highly polluting incinerators, or out in the open with no controls. The incineration of medical waste produces large amounts of dioxin, mercury and other pollutants, which are not only harmful to the environment but represents a serious threat also to human health.

The World Health Organisation recommends the following for the incineration of medical waste:

- Good practices in incinerator design, construction, operation (e.g., pre-heating and not overloading the incinerator, incinerating only at temperatures above 800°C), maintenance and lowest emissions;
- The use of waste segregation and waste minimisation practices to restrict incineration to appropriate infectious wastes;
- Availability of good practices and tools, including dimensional construction plans, clear operational guidelines, etc.;
- Correction of current deficiencies in operator training and management support, which leads to poor operation of incinerators;
- Materials containing chlorine such as polyvinyl chloride products (e.g., some blood bags, IV bags, IV tubes, etc.) or heavy metals such as mercury (e.g., broken thermometers) should never be incinerated.

A waste management plan should be implemented after carrying out a health assessment which should consider how healthcare waste is managed through to treatment and final disposal and include visits to waste dumps / landfills or the final point of disposal of treated waste.

The choice of treatment and disposal techniques depends on a number of parameters:

- the quantity and type of wastes produced,
- whether or not there is a waste treatment site near the hospital,
- the cultural acceptance of treatment methods,
- the availability of reliable means of transport,
- whether there is enough space around the hospital,
- the availability of financial, material and human resources,
- the availability of a regular supply of electricity,
- whether or not there is national legislation on the subject,
- the climate, groundwater level, etc.

The method must be selected with a view to minimising negative impacts on health and the environment. There is no universal solution for waste treatment. The option chosen can only be a compromise that depends on local circumstances. If protocols and medical waste management practices exist through local stakeholders, they should be linked with the humanitarian response through an MoU or other type of contracts to ensure the coordination of services. Where there is no appropriate treatment infrastructure in the vicinity, it is the responsibility of the hospital to treat or pre-treat its waste on-site.

Healthcare facilities are currently producing significant amounts of additional solid waste – Personal Protection Equipment (PPE) like masks, gloves, etc. – because of the Covid-19 pandemic. This type of waste is usually sent to landfills with domestic waste, but during the pandemic it is managed like other hazardous waste, with special measures such as incineration put in place and the service providers appropriately trained. The environmental impact of PPE is large and could be reduced through different strategies, including by supporting domestic manufacture, rationalising glove use and supporting recycled and reusable alternatives where possible. PPE sterilisation on a large scale will be needed for reuse, which is possible through hydrogen peroxide vapour, ultra-violet or gamma-radiation, or through other spray-on disinfectants. Reusables were found to lower environmental impacts up to fivefold compared to a single-use version.

Reducing waste can be achieved as well through reducing the use of paper, as well as recycling. The amount of waste can be systematically reduced by: promoting the use of electronic health information systems and avoiding duplication in paper format, and introducing digital modes of communication and information sharing with affected persons and during workshops and trainings. The health facility should also introduce the recycling of batteries, paper, glass, metals and plastic and collaborate with local recycling and repurposing facilities, where those exist, to organise their collection, transport and treatment and rehabilitation. Organic waste (from kitchens and gardens) on the other hand can be composted.

** For more information regarding waste management practices, refer to the Waste management chapter of this document.*

Hazardous waste

Healthcare facilities naturally use many chemical and pharmaceutical products. Most of them entail a health risk due to their properties. The trading and use of expired medicines also entails a public health risk whenever this type of waste is not controlled. Chemicals are ubiquitous in healthcare facilities and used for unique purposes, such as in chemotherapy to treat cancer, as disinfectants for cleaning and sterilisation, or as laboratory and imagery reagents. In addition, many potentially hazardous medical devices such as thermometers containing mercury are still in use. By addressing chemicals in use, potential exposure and related environmental and health risks in healthcare facilities, the health sector can not only protect patient and worker health and the health of surrounding communities. These substances and materials should be managed appropriately and not disposed of in an uncontrolled way. In some cases, switching to electronic equipment can provide a valuable solution and should be prioritised (e.g., for radiology equipment, thermometers).

Drug management and supply

Proper and rational management of pharmaceuticals/medical commodities facilitates waste minimisation and is of prime importance for better waste management. Disposal of small amounts of chemical or pharmaceutical waste could be easy, while large amounts require special treatment facilities. Unused medication waste has a high impact on the healthcare budget and detrimental effects on the environment. Therefore, preventing medication from remaining unused through the pharmaceutical chain is an interesting approach to achieve sustainable supply and use of medication. It is important to note that large quantities of pharmaceuticals are often offered as gifts in-kind donation as part of humanitarian assistance during emergencies. However, in many circumstances (e.g., when there is inadequate stock management, lack of space, or unwanted quantities of pharmaceuticals), large quantities of pharmaceuticals may not be used and should be respectfully declined.

Drugs intended for human use may have completely unexpected and unwanted effects on the natural environment, therefore proper management and disposal are required. Because of the nature of the products, a chain of custody is required to satisfy regulatory burdens. Due to the multiple causes of medication waste at all levels of the pharmaceutical supply and use chain, no single intervention is sufficient to overcome the problem of medication waste, thus a joint responsibility of all stakeholders is needed. The stakeholders involved in the supply chain of drugs can manage medication more efficiently through various approaches:

- On the manufacturer level, extending the medications' shelf-life, choosing the most sustainable storage conditions and adjusting package sizes will ensure a more sustainable supply chain of medications.

- Establishing procedures for procuring, storing, dispensing and proper disposal of all pharmaceuticals is crucial. Safe and adequate drug disposal management is required to prevent unwanted effects on the environment. These items are often considered hazardous waste and must be handled accordingly. Neither disposal in landfills nor incineration is appropriate for pharmaceuticals because of the potential for land, air and water contamination. Pharmaceuticals are not to be disposed of down drains or into septic or sewer systems.
- Drug distribution involves stock management optimisation and loosening shelf-life policies. Chemical and pharmaceutical stock management should avoid the build-up of expired or unused items, involving "first-in – first out" stock management and expiry date monitoring.
- Pharmaceuticals should be ordered on an as-needed basis to minimise expiration and disposal of unused portions. Investigate whether or not suppliers/manufacturers are willing to take back un-dispensed and/or expired pharmaceuticals for safe disposal.
- Prescribing practices should be rationalised, including consideration of prescription quantities and prescriptions for shorter durations.
- Products that generate less waste should be prioritised, meaning less wrapping material and packaging.
- Suppliers who take back empty containers for refilling are to be preferred.
- Patients' awareness of medication waste must be increased to stimulate conscious medication-ordering and to create willingness for participation in waste-minimising measures.

** For more information regarding sustainable procurement and logistics, refer to the cross-cutting chapter on Sustainable Supply Chains.*

Enhancing the sustainability of health facilities

Healthcare facilities can respond to the growing climate emergency by not only building resilience to extreme weather events and long-term stresses so as to continue protecting the health of their population, but also through reduction and eventual elimination of environmental contaminants released by their facilities. An environmentally sustainable facility uses scarce resources more efficiently, thereby generating cost savings, reducing carbon emissions and pollution but also coping better with future hazards and climate change.

** For information about energy efficient systems, water reduction actions and sustainable facility design, refer to the Enhancing the sustainability of communal facilities and shelters section of the Shelter and Settlements chapter.*

Food servicing

In an effort to make health facilities and the overall health sector more sustainable, changes must be made to how food services are provided. If the facility provides food services, the following actions should be considered:

- Implementing a sustainable food plan and increasing the procurement of locally and regionally produced foods.
- Eliminating or reducing the use of disposable products in food services. Reusable equipment should be prioritised, such as tableware that can be washed rather than disposable tableware, coupled with appropriate washing facilities.
- Reducing the use of non-food service paper products such as paper towels and napkins or using efficient dispensing systems to control the amount of these products used.
- Eliminating or reducing the use of bottled water for patients.
- Examining ways to reduce food waste.
- Starting an organic garden onsite, if space permits and using organic refuse from food services to create a compost pile and reuse material in the garden. If space does not allow for a garden, a simple compost pile may be possible.

Healthcare education and awareness sessions

Carrying out environmental training and awareness sessions will build knowledge and skills necessary to address complex environmental issues, as well as outline ways to take action and keep the environment healthy and sustainable. It is recommended the training is targeted at a multidisciplinary group (healthcare and maintenance staff, partners, etc.) and provided at the workplace so as to promote best practices and teamwork. Educating and informing the teams on the ground will make them better understand how their decisions and actions affect the environment as well as health and increase their engagement in following best practices.

Suggested training content:

- Environmental responsibilities (on individual and organisation's level)
- Environmental risks
- Environmental Management Systems and environmental targets
- Measures and strategies to mitigate environmental risks with special focus on waste reduction
- Session on One Health and Planetary Health approach, which looks at the interconnections between hierarchically organised systems of human, animal, and environmental health.

** For information about education and awareness training, refer to the cross-cutting chapter on Nexus.*

USEFUL ENVIRONMENTAL CHECKLISTS AND SCREENING/ASSESSMENT TOOLS:

Smart hospital toolkit: A practical guide for hospital administrators, health disaster coordinators, health facility designers, engineers and maintenance staff to achieve Smart Health Facilities by conserving resources, cutting costs, increasing efficiency in operations and reducing carbon emissions

Health Care Waste Management Costing Tool: a guide to non-incineration technologies to help decision makers working on local or national levels in the promotion of alternative technologies in terms of waste management

USEFUL LINKS AND RESOURCES:

ICRC, 2011, Medical waste management: The manual provides guidance on what is essential and what actions are required to ensure the good management of waste. Drawing on professional practice, the manual provides practical recommendations for use in the different humanitarian contexts

WHO, 2020, Guidance for climate resilient and environmentally sustainable health care facilities: The aim of this guidance is to enhance the capacity of health care facilities to protect and improve the health of their target communities in an unstable and changing climate; and to empower health care facilities to be environmentally sustainable, by optimising the use of resources and minimising the release of waste into the environment

WHO, 2017, Chemicals road map: The road map provides a framework for addressing chemical safety by the health sector in general and health care facilities in particular

WHO, 2022, Compendium of WHO and other UN guidance on health and environment: The compendium provides a systematic compilation of published guidance from WHO and other UN organisations on health and environment

Practical Action, 2020, Low-cost medical waste incinerator: Manufacturing, Operation and Maintenance Instructions

PROTECTION

Protecting "invisible" displaced populations in Niger. Photo credit: Norwegian Refugee Council

The purpose of EU-funded protection interventions is to prevent, reduce and respond to the risks and consequences of violence, deprivation and abuse[35]. Protection actors have a role to play in promoting environmentally-friendly measures that at the same time result in positive protection outcomes. At the same time, unintended environmental impacts of protection programmes should also be addressed and mitigated to the extent possible.

REQUIREMENTS:

- Protection actors[36] should include environmental related questions in protection risk analysis and assess the correlation between protection risks, climate change and other environmental issues, especially in consideration of disaster and climate-related displacement and conflicts linked to land, water and natural resources.
- Protection actors[37] should mediate conflicts over natural resources and strengthen inclusive community-based natural resources governance mechanisms, in order to mitigate related risks and to safeguard the natural resources the communities rely on, in recognition of the importance of safe and reliable access for all to those.
- Protection actors[38] should mitigate the risks related to the lack of access to alternative clean and safe energy based on protection risks analysis and community consultations, to avoid unintended consequences. To the extent possible, this work should be integrated with shelter, food assistance, WASH, and camp management and development actors present in the area.
- Protection activities, such as information dissemination, capacity building or NFI distributions, should limit the use of non-reusable plastic and non-recyclable materials and adequately manage waste produced. It is therefore crucial to work in collaboration with other sectors, including WASH, health, supply and logistics, to set up waste management mechanisms and to establish, whenever possible, a bring-back system for unused items or its packaging.

[35] "Humanitarian Protection: Improving protection outcomes to reduce risks for people in humanitarian crises" (2016), outlines the definition and objectives of the European Commission's humanitarian protection work.
[36] Humanitarian and human rights actors which engage directly in protection work.
[37] *Ibid.*
[38] *Ibid.*

RECOMMENDATIONS:

- Integrate environmental considerations in protection evidence-based advocacy and enhance the protection of the natural environment in pervasive violence and armed conflict contexts.

- The inclusion of environmental considerations should be also systematically integrated in the analysis of legal frameworks and their application, as well as in the support activities to authorities and institutions at regional, national and local level.

- When designing protection facilities like Child-Friendly Spaces (CFS) and Women and Girls' Safe Spaces (WGSS), ensure collaboration with other sectors, including WASH, supply and logistics, to develop joint approaches in addressing waste management, as well as investing in renewable sources and managing power consumption, supporting water conservation and water harvesting/greywater reuse systems.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE ENVIRONMENTAL SUSTAINABILITY OF PROTECTION PROGRAMMES

Protection risk analysis

In order to inform protection programme design with an environmental lens, protection actors should integrate environmental related questions in protection risk analysis and assessments that are being carried out. Through this, the correlation between protection risks, climate change and other environmental issues should be assessed, and mitigation measures introduced. For example, climate-induced displacement, lack of access to safe energy or conflicts over local natural resources, such as wood or water, can be identified and better linked to protection risks.

Legal framework assessments

Furthermore, when analysing the legal framework and policy landscape, it is recommended that protection actors systematically evaluate how current legislation, legislative processes and government strategies take into account the specific environmental vulnerabilities. The meaningful inclusion of environmental considerations when supporting authorities and institutions in the implementation of protection processes (i.e., profiling exercises, Refugee Status Determination, etc.) can be ensured. Protection actors can facilitate the availability of environmental expertise in the application of the law and integrate environment consideration in the support to law and policy making processes to find and achieve meaningful and sustainable solutions.

Protection of the environment in contexts of pervasive violence and armed conflict

During violence and armed conflict, environmental damage is often overlooked. In context of conflicts, it is recommended that protection actors ensure reinforcing advocacy in compliance with International Humanitarian Law (IHL) rules. The principle of proportionality in attack and precautions should be consistently monitored in order to determine reasonable incidental (short- and long-term) damage to the environment, as well as to establish all feasible precautions to avoid and minimise damage to the natural environment during international and non-international armed conflicts. At the same time, existing guidelines and trainings on environment can be integrated in the modules and dissemination sessions on IHL and affected populations in contexts of armed conflict[39].

Mediation of natural resources-related conflicts

Protection actors should support mediation of conflicts over natural resources and strengthening natural resource governance mechanisms at the community level (see also the *Protection Mainstreaming* chapter). The level of exposure of the most vulnerable persons to protection risks is directly decreased by reinforcing capacities to prevent or resolve natural resource-related competition intra- or inter-community through conflict management interventions. Protection actors should also ensure the integration of environmental and climate change awareness sessions as part of the life skills curricula provided at community level.

The work should be ensured in coordination with all relevant actors and stakeholders to safeguard the natural resources the communities, rely on (e.g., wood, water, soil, sand), according to a conflict sensitive approach and assessment.

[39] E.g. ICRC, 2020. *Guidelines on the Protection of the Natural Environment in Armed Conflict*

** For more information on setting up a community-based environmental management plan, refer to the CCCM chapter.*
*** For more information on natural resources safeguarding, refer to the Livelihoods chapter.*

Risk mitigation through access to alternative clean and safe energy

Protection actors should ensure mitigation of risks promoting access to safe, clean and affordable energy. Not addressing persons' energy needs for cooking or other activities as part of humanitarian analysis and response not only can lead to environmental degradation, but it also exacerbates protection and health risks. This is because people, often women and children, are exposed to risk of different forms of violence, abuse and/or exploitation while journeying far to collect firewood for fuel or to find energy sources. Additionally, this can be time- and labour-intensive, often leaving people in charge with less time for other needs, such as income-generation and education. Therefore, introducing measures that are safe, more environmentally sustainable and located in close proximity to the location of populations is also a mean to reduce protection risks, both at individual and community level. For example, the delay in using solar power, supplying cooking energy or full absence of it caused severe deforestation within and around the Rohingya refugee settlements in Bangladesh along with conflict with the host community. At the same time, population's active participation, especially marginalised and most vulnerable groups, should be to understand energy practices and identify protection risks related to energy in order to meaningfully and appropriately prevent and respond (see also cross-cutting chapter on *Protection mainstreaming*).

** For more details regarding clean cooking energy, refer to the Food assistance chapter of this document.*

Sustainable materials and waste management in protection activities

Protection programmes that entail information dissemination, capacity-building activities, or NFI distribution, often result in large amounts of uncontrolled disposal of waste into the environment. These programmes use and distribute items that are most often composed of carbon intensive materials (e.g.: plastic). Protection actors should thus limit the use of non-reusable plastic and non-recyclable materials such as single-use cups, as appropriate for protection-related activities (e.g., workshops, information and sensitisation campaigns). As part of such programmes, it is crucial to work in collaboration with other sectors, including WASH, health, supply and logistics, to set up waste collection points and develop or link up to any other community level waste management initiative. Protection actors should also collaborate with supply and logistics actors to see whether establishing a bring-back system for unused items or their packaging can be implemented in a specific context. Such a system would encourage persons to bring back used packaging or unused items and should therefore be coupled by awareness raising efforts both among programme managers and participants.

** For more information about waste management options, refer to the Waste management chapter.*
*** For protection projects with NFI distribution, refer also to the cross-cutting chapter Sustainable supply chains.*

Enhancing the sustainability of communal protection facilities

Protection facilities (e.g. Child Friendly Spaces and Women and Girls' Safe Spaces) facilities can respond to the growing climate emergency and environmental degradation by not only being physically resilient to extreme weather events[40] and long-term stresses, but also through reduction and eventual elimination of the environmental contaminants released by their facilities.

** For information about energy efficient systems, water reduction actions and sustainable facility design, refer to the section on Enhancing the sustainability of communal facilities and shelters in the Shelter and Settlements chapter.*

USEFUL LINKS AND RESOURCES:

OECD, 2021, Gender and environment: This report provides an overview of the gender-environment nexus, looking into data and evidence gaps, economic and well-being benefits, and governance and justice aspects.

IUCN, 2021, Gender-Based Violence and Environment Linkages - Summary for Policymakers: This summary gathers top considerations and recommendations from IUCN's expansive study on Gender-based Violence and Environment Linkages: The Violence of Inequality.

[40] For more information on disaster preparedness see DG ECHO's Disaster Preparedness Guidance: https://ec.europa.eu/echo/document/download/13015e8b-acaf-4d8a-b665-d2aab142c97b_en?filename=dg_echo_guidance_note_-_disaster_preparedness_en.pdf

NUTRITION

Bangladesh: a year of bringing relief to Rohingya refugees. Photo credit: Mallika Panorat

Humanitarian crises can severely affect the nutrition status of populations, and in particular that of the most vulnerable groups living in deprived contexts. Nutrition in emergency response may include one or more programmes designed to treat acute malnutrition, micronutrient deficiencies (e.g., vitamin A supplementation), or prevent further cases of undernutrition from occurring (e.g., through BSFP, IYCF-E). Most of these programmes rely heavily on pre-packaged preventive or therapeutic foods and drugs, sometimes imported, and whose packaging can be harmful to the environment if not managed correctly. The main opportunities identified to reduce the environmental footprint of the nutrition sector concern the emissions from the transport of these goods and their waste product management.

REQUIREMENT:

- When designing nutrition programmes encourage the collaboration with other sectors, including WASH, health, food, supply and logistics, to develop integrated approaches in addressing waste management.

RECOMMENDATIONS:

- Favour and promote procurement of products from localised producers as long as quality and environmental sustainability can be ensured, with reduced or recyclable packaging.

- Introduce a bring-back system whereby people receive new rations when bringing back used sachets of specialised nutrition products, such as Ready to Use Therapeutic Food (RUTF), Ready to Use Supplementary Food (RUSF), Lipid-based nutrition supplement, Supercereal/Supercereal+, etc.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE SUSTAINABILITY OF THE NUTRITION SECTOR IN HUMANITARIAN RESPONSES

Sustainable solid waste management and optimisation of the lifecycle of nutritional packaging

The proper implementation of innovative solutions for humanitarian systems through multi-stakeholder partnerships is likely to result in tangible outcomes to affected people with significant positive economic, social, and environmental impact to the local communities. The waste collection and management initiative should aim to set up community-based waste collection activities which will ensure that waste produced through the nutrition response, particularly the single-use sachets will not be disposed of in the environment or in uncontrolled landfills. The collection points can be set up at distribution centres/clinics/health centres, but also on a household level. The waste collection activities should be accompanied by an awareness/sensitisation campaign, aimed at building the capacity of local communities on waste management and the awareness about general environmental considerations and issues linked to improper waste disposal. Nutrition actors should collaborate with actors from other sectors, including WASH, health, food, to link up with any other community level waste management programmes that might have already been set up. Nutrition actors should also collaborate with supply and logistics actors to see whether reverse logistics, in which waste is returned to the product's point of origin, would be possible in contexts where the waste cannot be managed on site.

** For more information regarding waste management and waste valorisation practices, refer to the cross-cutting chapter on Solid waste management.*
*** For more details refer to the cross-cutting chapter on Sustainable supply chains.*

Bring-back systems

Establishing a bring-back system for used sachets of RUTF, RUSF, fortified flours and the like can facilitate management of the waste they produce. Such a system would encourage people to bring back used sachets to receive new rations. However, such programmes need to be designed and monitored very carefully to avoid that those mothers or carers do not come back for refills because the sachets had been lost. Such programmes should therefore be coupled by awareness raising efforts both among programme managers and affected persons to explain that in case mothers or carers are unable to bring back the sachets, they would still receive the new ration. The collection of solid waste should be accompanied by either a local method of management and disposal of waste (in coordination with local waste management actors) or a waste valorisation (recycling or reuse) programme.

** For more information regarding waste management and waste valorisation practices, refer to the cross-cutting chapter on Solid waste management.*
*** For information regarding medical waste management practices and incineration, refer to the Public health chapter.*

Localised production and supply chains

The management of acute undernutrition relies heavily on specialised nutrition foods that have to comply with strict specificities in terms of composition and safety to be certified and sourced by the UNICEF Supply Division, WFP and ECHO partners in general. Progress has been observed in the past decade on diversification of the composition of products and the localisation of production, but the strong regulations around both the product formulation and sourcing of raw products have also to be taken into consideration. On the prevention side, encouraging locally produced nutritious foods could potentially favour more sustainable methods of consumption, not only because they would be more culturally acceptable but also because their production would be adapted to local resources. Some potential environmental advantages of locally produced nutritious foods include the reduction of GHG emissions involved in the transport and storage; support to local economy; and reduction of packaging and waste linked to global procurement practices. However, a thorough understanding and better control of local operating conditions is needed to ensure environmental sustainability. Locally produced items or foods are not more environmentally sustainable by default, but they can be if attention is given to the identification and mitigation of unsustainable practices involved in the local production process

Examples of measures to take:

- sourcing raw ingredients from sustainable plantations,
- limiting use of chemicals during production,
- promoting recyclability or facilitating reuse or recycling of packaging

** For more information regarding sustainable procurement and logistics, refer to the cross-cutting chapter on Sustainable supply chains.*

CAMP COORDINATION AND CAMP MANAGEMENT

Bangladesh: a year of bringing relief to Rohingya refugees. Photo credit: KM Asad

Every humanitarian settlement can unintentionally lead to environmental impacts, some more significant than others. These should be taken into account from the beginning of site selection through to decommissioning. The most common environmental issues linked to humanitarian settlements, which vary depending on the location and type of emergency, include: loss of natural vegetation, deforestation, soil erosion, groundwater pollution and depletion, and pollution from general waste and sanitation waste. The camp coordination and management (CCCM) sector has a lot of potential for raising environmental awareness, promoting collaborative activities and building the capacity for environmental management and climate change adaptation among the displaced communities, the host community as well as the local authorities. Therefore, mainstreaming of environmental consideration in CCCM programming, especially taking into consideration the complexity of site management and the extent of the environmental impact that it can create, represents a key action to progress with the greening of humanitarian responses.

REQUIREMENTS:

- Mainstream environmental considerations throughout the coordination and monitoring activities and ensure the assessment of environmental risks is carried out alongside wider assessments to avoid exacerbating local vulnerabilities.
- Ensure coordination and collaboration with national and local authorities, the settlement population and host communities and jointly lead programmes in addressing crucial environment challenges such as deforestation.
- Ensure that a decommissioning plan for the settlement is in place, which includes managing the leftover waste, including its safe treatment and disposal, and ensures the previous condition of the site is restored.

RECOMMENDATIONS:

- Develop a community-based environmental management plan together with all the organisations operating in a camp as well as the community to spot opportunities, set up and manage activities linked to improving the environmental footprint of the settlement, including waste management system.
- If the humanitarian settlement is located near a natural forest, support the development of a forest management plan in collaboration with the settlement community, the local authorities and other stakeholders in order to support the sustainable use of its resources, and reduce the environmental impact.
- Support capacity building activities with the settlement population and host communities to raise awareness and consciousness of the importance of reducing the environmental footprint and the consequences of climate change.
- Ensure in advance the financial costs of decommissioning can be met.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE SUSTAINABILITY OF THE CAMP COORDINATION AND CAMP MANAGEMENT SECTOR IN HUMANITARIAN RESPONSES

Integration of environmental aspects and risks in CCCM activities

Exposure to disasters caused by natural hazards, environmental degradation and conflict over scarce natural resources pose serious risks to the protection and well-being of both displaced people and host communities, while threatening the long-term sustainability of settlements. Environmental considerations therefore must inform decisions with regard to the geographical location, the definition of site carrying capacity, and the layout of humanitarian settlements. Whenever possible, it is recommended that CCCM partners engage in the early stages of such discussions to ensure that decisions made cross-sectorally regarding components of site establishment and services, have an environmentally favourable lens. Particularly in contexts where disasters caused by natural hazards or environmental degradation affect both displaced and host communities, it is essential for CCCM partners to ensure coordination and collaboration with humanitarian service providers, national and local authorities and jointly lead programmes in addressing crucial environment challenges such as deforestation.

All stakeholders, including the site population and host communities, should participate in developing the site plan and designing the initiatives and activities aimed at improving the settlement and its surrounding areas in terms of environmental degradation of natural areas, waste management, environmental awareness, natural resource management and site improvement through participatory methods such as assessment, consultative meetings, focus group discussions and go-and-see visits. The coordination with key stakeholders is key to ensure responses are tailored as much as possible to the context where the settlement is located.

** For additional information regarding environmental screenings/assessments in humanitarian settlements, refer to the Environmental screenings/assessments and planning section of the Shelter and Settlements chapter.*
*** For more information on the importance of community participation refer to the cross-cutting chapter on Protection mainstreaming*

Site decommissioning

Rehabilitation of the environment that accommodated humanitarian settlements is a key process that the site closure committee must prioritise. Addressing significant environmental damage that may have accrued during the lifespan of a site – both within the immediate surroundings as well as the broader area – is a necessary step to undertake before closing a humanitarian site and handing back responsibility to host authorities and communities. The site closure should be accompanied by an environmental assessment/screening and a mapping of environmental risks and rehabilitation needs, which will in turn inform environmental rehabilitation programming and the waste management plan. The environmental and infrastructure aspects of the closure and phase-out should be incorporated across the programming tools and taken into consideration from the design phase of the settlement.

An environmentally sustainable settlement decommissioning plan includes a rehabilitation programme that aims to:

- remove immediate and obvious hazards from the area and ensure proper disposal of waste present on the site and adjacent areas;
- repair to the extent possible any serious level of environmental degradation that may have taken place, including natural habitat restoration, tree plantation and reforestation;
- leave the site in a state that allows local people to make independent choices about its use;
- ensure restoration efforts look beyond the immediate settlement site and include the remediation of impacts on watersheds and surrounding lands.

** For detailed information regarding the expected outputs of the environmental screening/assessment, refer to the Environmental screening/assessment and planning section of the Shelter and Settlements chapter.*

Community-based environmental management plan

The environmental aspects of the site and its surrounding areas can be managed through a community-based environmental management plan that identifies critical environmental and related livelihood and social issues. Community environmental management is a method for improving the sustainable and equitable governance and management of the existing natural resources at the local level, within the site and in the surrounding areas. The method can be implemented through Community Environmental Action Plans (CEAPS), which are focusing on:

- the assessment of needs,
- the strengthening of the overall community management of natural resources,
- the mitigation of risks linked with environmental degradation of the site and that negatively affect the host communities,
- the identification of ecosystems and specific natural resources, such as forests or groundwater, that might be at risk and that need to be protected throughout the life of the settlement,
- alternative technologies and practices such as more efficient use of fuel and improved cooking practices.

They can also serve as a baseline for future monitoring exercises. Environmental issues can trigger disputes between host and displaced communities as the natural resources of the area may represent livelihood opportunities, culturally or spiritually significant sites. Therefore, host communities should be involved in key decision-making that relates to environmental aspects and benefit from some environmental support activities.

Forest management and tree planting schemes in and around settlements

Natural ecosystems provide a wealth of benefits. They are rich in biodiversity and critical to water conservation. They store carbon, improve health and nutrition, provide key resources that contribute to people's livelihoods, and can protect communities from the impacts of climate change. As such, their preservation offers several opportunities to make humanitarian responses more environmentally sustainable.

Through community plant nurseries and tree plantations, the local population has access to the many goods and services these can provide. They can provide food through fruit forests and agroforestry and help address shortages of firewood or construction materials, if properly managed. However, the responsibilities and ownership over these resources need to be established and agreed from the project onset, through collaborative processes to ensure they do not trigger conflicts. Community engagement is important to build trust and support and ensure long-term impact. Moreover, it is important to ensure these types of projects are risk-informed and reflect the required needs of people living in the area now, and in the future under the most likely climate change scenarios. Sustainable land use planning and management is crucial and can be achieved through designation of zones for farming, woodlots, agroforestry and protection (wetlands, shorelines, greenbelts) to ensure that trees, once planted, shall not be cut down. Detailed mapping of existing and planned interventions should be also considered to track progress and avoid losses if the same land is targeted for multiple uses.

Awareness campaigns and capacity building on environmental considerations

Awareness and training activities should include a wide range of participatory approaches to encourage the direct involvement of the target audience (displaced as well as host communities, or other persons of concern, local authorities, community leaders or camp committees, etc.) and focus on the links between environment and protection of the population. Special attention is needed to identify groups at risk, especially women and children, who face protection risks directly linked to the collection and provision of natural resources (when collecting fuel, wood, water or performing other functions). The settlement residents as well as the host community should be effectively informed about the environmental impacts of settlements. This can be done by raising awareness and planning community-wide events where environment and conservation activities can be highlighted in a meaningful, practical and educational manner.

** For more information regarding the Mainstreaming of environmental and climate change awareness refer to the cross-cutting chapter on Nexus.*
*** For greening activities linked to the build environment aspects of settlements, refer to the Shelter and Settlements and Water, Sanitation, and Hygiene chapters.*

USEFUL ENVIRONMENTAL CHECKLISTS AND SCREENING/ASSESSMENT TOOLS:

Community environmental action planning toolkit: The toolkit contains 37 participatory tools that have been selected as a starting point for use in a CEAP process

Camp management toolkit: The toolkit provides relevant and constructive reference and practical support for national and international humanitarian staff, community leaders as well as authorities and affected communities involved in camp management and camp operations

Assessing woodfuel supply and demand in displacement settings: A methodology that assesses the fuel demand and the associated challenges; the fuel supply, including woody biomass availability, land cover classification, and changes; and identifies intervention options to address issues related to energy access, NRM, and livelihood opportunities

USEFUL LINKS AND RESOURCES:

UNEP, 2013, Community Environmental Action Planning: Getting Organised - A Facilitator's Guide: This Facilitator's Guide provides essential tips for facilitation, provides guidance on identifying communities with whom to engage and guides us through a process of setting objectives for a CEAP session, identifying topics to explore and suggesting what tools might be used

UNEP, 2017, Community Environmental Action Planning: A Handbook for Practitioners in Sudan: The handbook provides an overview of tools and approaches that could be used by individuals, groups or organisations to plan, carry out and evaluate environmental management activities on a participatory and sustained basis, either on their own initiative or with outside facilitation and assistance

UNHCR, 2009, Environmental perspectives of camp phase-out and closure: This compendium of best practices provides an overview of possible actions to undertake under the CCCM umbrella in order to properly address environmental concerns from the beginning of site selection through to decommissioning

UNHCR/FAO, 2018, Managing forests in displacement settings: Guidance on the use of planted and natural forests to supply forest products and build resilience in displaced and host communities

LIVELIHOODS

Women farmers shaping landscape restoration and improving livelihoods in Rwanda through Farmer Managed Natural Regeneration. Photo credit: World Vision Rwanda, 2022

The over-arching requirements from the chapter on the HDP Nexus, i.e., projects having to be conceived with a longer-term vision and with linkages with development and peace actors, is particularly relevant for this section. It should be applied across the different requirements and recommendations. DG ECHO will advocate with humanitarian and development actors to ensure this is the case taking into account that in conflict and fragile settings, there can be limited longer-term programmes.

REQUIREMENTS:

- Enhance the enabling environment for the economic inclusion of affected persons, rather than developing parallel systems that may generate waste, damage ecosystems and have a limited impact on livelihoods.
- Promote livelihoods and income-generating activities that are resource-efficient. Ensure that environmental criteria are considered as part of sector selection when conducting value chain analysis and identifying viable income generating activities. Assess whether items distributed to support livelihoods will lead to overexploitation or pollution of natural resources and assess whether more climate friendly alternatives exist.
- In agricultural programmes, ensure inputs are sustainable and efficiently managed, including efficient water management and limit water trucking to emergency livestock management and new tree planting.
- Avoid charcoal making as a livelihood or income generation activity as much as possible. Instead, favour alternative and more sustainable solutions that are context relevant and disaster risk and conflict sensitive.

- Avoid giving trainings that can lead to the over-extraction of natural resources or are harmful to the environment. Instead, promote trainings focussing on environmentally positive activities or ones that diminish environmental impacts.

- Livelihoods and income-generating programmes that involve use of natural resources (wood, water, soil, sand, etc.) should include monitoring, also by the affected people, to ensure the renewal capacity of the natural resources, to avoid contributing to shortages and over-exploitation of resources.

- Promote environmentally sustainable job opportunities ('green jobs') in livelihoods programmes. If green jobs were not prioritised in livelihoods or income-generation projects, explain why other types of income-generating activities were opted for. Ensure ongoing market assessment in order to map the potential for environmentally friendly businesses and economy.

RECOMMENDATIONS:

- Support the setup of savings and loan associations as a means towards organisational strengthening and contributing to their empowerment through environmentally sustainable economic activities, coupled with training / information of the benefits of using the savings on environmentally sustainable solutions.

- Provide renewable energy for businesses and support market-based long-term recovery energy interventions, in cooperation with development actors and the private sector.

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE ENVIRONMENTAL SUSTAINABILITY OF LIVELIHOODS ACTIVITIES

Economic inclusion

First and foremost, providing sustainable livelihoods interventions in general, and/or cash transfers where possible, can be a buffer to avoid negative coping mechanisms that are damaging to the environment, such as cutting wood for sale, illegal hunting, wildlife trafficking, informal oil refining. Such negative coping mechanisms can also lead to protection risks, so livelihoods programmes should be coordinated with protection actors.

When setting up livelihoods programmes, prioritise the economic inclusion of affected persons into the local economy and national systems as much as possible. Developing parallel systems may generate unnecessary waste, damage ecosystems and have a limited impact on livelihoods support, as well as their longer-term continuity.

Resource efficient livelihoods interventions

Promote livelihoods and income-generating activities that are sustainable and resource-efficient. Livelihood programmes should not include labour in environmentally harmful livelihood activities, as these can also lead to protection risks (e.g. mining, oil refining). This can be facilitated by including environmental criteria as part of sector selection when designing livelihoods interventions. Include environmental criteria especially when conducting value chain analysis, or labour and business market assessment, and identifying viable and sustainable income generating activities. Special consideration should be given to the potential for over-extraction of:

- wood
- non-timber forest products
- fish or seafood
- water (surface and groundwater)
- soil, sand and land
- areas of special scientific interest - areas of land and water considered to represent natural heritage in terms of their: flora, fauna, animals, geology, and geomorphology.

This will help identify whether the planned livelihoods or income-generation activities would have unintended impacts on the environment, especially in terms of over-extraction of natural resources beyond the sustainable yield. Ensure that all value chain processes and activities adequately address environmental concerns and include resource efficient management considerations, while maintaining profit.

Especially avoid charcoal making as a livelihood or income generation activity as much as possible given the potential to lead to over-extraction of wood, air pollution and serious health risks associated to it. Instead, favour alternative and more sustainable solutions that are relevant for the context, and disaster risk and conflict sensitive. In some cases, where the production of charcoal is a fundamental and unavoidable part of the local economy, there may be value in providing education and awareness on improved, more efficient methods for charcoal production to help reduce the environmental impact. For example, using invasive species to make the charcoal, such as typha or *Prosopis juliflora*, where available, or monitoring the impact of wood harvesting for firewood and charcoal production to see if wood is being harvested faster than it can regenerate (see section below on monitoring). If that is the case, add complementary activities on reforestation.

Assess whether items distributed to support livelihoods will lead to overexploitation or pollution of natural resources. For example, an improper use of chemical fertilisers can lead to unsustainable yields or water table pollution, or over-distribution of fishing boats or fishing nets can lead to overexploitation of fish stock or distribution of livestock can lead to overgrazing of pasture areas. Assess whether more climate friendly alternatives exist. Ideally, coordinate with other humanitarian, development and local organisations present in the area regarding their livelihoods and local development programmes (see also the monitoring section of this chapter below). Together, identify nature-based livelihood approaches that are complementary and collaborative for more cyclical, effective and sustainable use of available natural resources.

All of the above can be facilitated by also collaborating with local organisations and institutions that have knowledge and experience in environment conservation and sustainable livelihoods, including development actors (see cross-cutting chapter on the Nexus), and leveraging traditional and nature-based knowledge of the local community (see section on use of traditional ecological knowledge in the Protection Mainstreaming chapter). As mentioned above, livelihoods interventions especially should be conceived with longer-term solutions in mind, that contribute to reduce root causes of risks and vulnerabilities, so that development actors can then build on what humanitarian organisations kick-started. Empower local communities to sustainably manage the ecosystems they depend upon. This can be facilitated by community participation in the design and implementation, capacity development, etc. (see the Protection Mainstreaming chapter).

Efficient water management in agricultural activities

To limit carbon emissions in agricultural programmes, limit water trucking to new tree planting, or for emergency livestock management only. Rely instead on traditional rain-fed agricultural systems and rainwater harvest and improved planting technologies (mulching, Zai-holes).

** For additional details on sustainable agricultural practices, refer to the Food Assistance chapter.*

Trainings

Trainings that are given as part of livelihood interventions to build up skills and economic autonomy should not promote activities that can lead to the over-extraction of natural resources. For example, agriculture that requires new land to be cleared or extractive industries and that dependant on imported materials, but also keep in mind the potential environmental impacts of activities undertaken by individuals or households on small plots and kitchen gardens.

Instead, promote trainings focussing on environmentally positive activities or ones that diminish environmental impacts. Good examples include, but are not limited to:

- sustainable management of natural resources
- efficient use of fertilisers and agrichemicals, safe storage and disposal, Integrated Pest Management
- regenerative agriculture and focus on soil conservation and soil health
- use of organic fertilisers and biopesticides
- efficient use of water and water recycling/rainwater collection where possible
- climate change-informed agricultural decision making

For more examples, see the Green jobs section of this chapter, below.

Monitoring

Livelihoods and income-generating programmes that involve use of natural resources should include monitoring to ensure the renewal capacity of the natural resources, to avoid contributing to shortages and over-exploitation of resources. Promote self-monitoring by people to promote more participation and ownership by the people. Particular attention should be paid in the cases where the following resources are used in livelihood or income-generating activities:

- wood
- non-timber forest products
- fish or seafood
- water (surface and groundwater)
- soil, sand and land
- important habitats

Monitoring activities should also cover the efficient use of inputs (e.g. fertilisers), to make sure that losses, pollution and waste are at its minimum.

Monitoring should include coordination with other humanitarian and development organisations regarding their livelihoods and local development programmes to prevent all organisations focussing on one or few types of livelihoods or income-generating activities that cumulatively might put too much pressure on the natural environment.

Green jobs

Livelihoods programmes and income-generating activities have a huge potential for positive environmental outcome, beyond just avoiding harm. As such, environmentally sustainable job opportunities (i.e. 'green jobs') should be prioritised as livelihoods or income-generating options where feasible, appropriate and fair. Examples of green jobs that can be prioritised, depending on the context, include:

- waste collection/management activities (excluding medical or other hazardous waste and hazardous substances)
- waste valorisation schemes (reuse and recycling systems) including repair and reuse businesses, focusing on electrical components and appliances, especially of those distributed during humanitarian programmes such as solar lamps and solar home systems
- fabrication and use of recycled bricks in construction
- clean energy production (e.g. set up and maintenance of renewable energy systems, production of more cooking energy alternatives like eco-briquettes, pallets);
- water conservation and management activities
- forest management and monitoring; including reforestation and afforestation, fire management
- reforestation and afforestation
- land and ecosystem management, restoration, including soil restoration and conservation
- in agricultural programmes: agroecology[41], agroforestry (including Farmer Managed Natural Regeneration[42]), climate smart agriculture[43], organic farming and conservation agriculture; including production of organic fertiliser, composting, beekeeping (for pollination and honey production), nursery business
- constructing disaster risk reduction infrastructure, including the employment of nature-based solutions[44] (eco-DRR) prioritised by communities

[41] The 10 Elements of Agroecology. Guiding the Transition to Sustainable Food and Agricultural Systems. Rome, 2018. http://www.fao.org/3/i9037en/i9037en.pdf

[42] https://fmnrhub.com.au/

[43] https://www.fao.org/3/ca2189en/CA2189EN.pdf

[44] https://www.iucn.org/theme/nature-based-solutions/resources/iucn-global-standard-nbs

Work closely with development actors to promote green jobs as income generating activities. Prioritisation of green jobs can be done for example through support to skill-building activities in these sectors.

An ongoing market assessment should be included as part of those projects in order to map the potential for setting up environmentally friendly businesses to enhance local markets, kilometre Zero initiatives that connect producers and consumers avoiding middle-men. Additionally, this can be linked to the market analysis done for cash assistance (see the Market Analysis section in the chapter on Cash). In cases where the market analysis shows gaps in the markets (or heavy reliance on unsustainable produce), livelihood activities can be supported that can fill this gap.

Energy for livelihoods

To strengthen business development especially in rural settlement settings, DG ECHO recommends supporting market-based renewable energy interventions, in cooperation with development actors and the private sector, to provide renewable energy for businesses present in the affected communities. This should be seen in the wider context of providing community energy.

** For details on sustainable energy supply, refer to the Shelter and Settlements chapter*

USEFUL ENVIRONMENTAL CHECKLISTS AND SCREENING/ASSESSMENT TOOLS:

Environmental integration tool approach: The tool has been designed to bring a structured attention to environmental issues linked to a production programme or economic activity (agricultural or non-agricultural).

USEFUL LINKS AND RESOURCES:

FAO, 2018, Climate-smart agriculture training manual: This manual is designed for a four-day training course on climate-smart agriculture that would take the learner from the basics of climate science to the impacts of climate change and the linkages among climate, agriculture and food security.

FAO, 2019, Ten principles of agro-ecology: These elements emanated from FAO's global and regional dialogues and were developed based on scientific literature.

European Commission, 2020, Quick tips - Integrating climate change and the environment in the agriculture and food systems: This note provides quick practical tips to support the programming and design of EU support for sustainable agricultural and food systems that can contribute to food and nutrition security and sustainable development.

EHA Connect, Food Security, Nutrition and Livelihoods: Key environmental issues linked to food security, nutrition and livelihoods programming.

EDUCATION IN EMERGENCIES

Mali: supporting schools for children fleeing violence. Photo credit: Save the Children

In line with the Communication on on Education in Emergencies and Protracted Crises[45], DG ECHO supports education projects in both emergencies and protracted humanitarian contexts. They should be delivered in a nexus approach as Education in Emergencies and protracted crises requires both humanitarian and development instruments, working together and in complementary ways.

REQUIREMENTS:

- Include environmental and climate change awareness, through a gender, age and disability inclusion lens, as modules in education lesson plans where this is under the control of the organisation.
- Integrate environmental and climate-friendly activities in day-to-day running of schools, where this is under the control of the organisation.

RECOMMENDATION:

- Enhance the sustainability of educational facilities. Invest in renewable sources and manage power consumption. Support water conservation and water harvesting/greywater reuse systems.

[45] COM(2018) 304 final

EXPLANATION OF KEY CONCEPTS AND PROCESSES COVERED IN THE REQUIREMENTS AND RECOMMENDATIONS AIMED AT IMPROVING THE SUSTAINABILITY OF CASH AND VOUCHER ASSISTANCE

Education curriculum

Early education about environmental hazards, the need for environmental protection and how individuals can contribute to protecting their environment can help protect children and young people and can develop sustainable habits for life. It also sets the foundations for young people to seek green jobs.

Where a partner can control or influence the school and lesson modules and sensitisation sessions under an Education in Emergencies programme, environmental and climate change awareness should be included therein. This should be developed through a gender, age and disability inclusion lens, meaning taking into account how environmental degradation affects various population groups differently. For more details on this, see the cross-cutting chapter on Protection and gender and age mainstreaming and disability inclusion.

Children, youth and teachers can have an amplifying effect in terms of spreading environmental awareness, by passing on these good practices to parents and their communities. This complements the requirement from the cross-cutting chapter on Nexus on integrating environmental and climate awareness into the regular activities that support project implementation, for both organisation staff and the affected populations. Therefore, the messages passed to children and to adults should be aligned. They can cover:

- waste management and waste related environmental hazards
- water conservation
- land management
- energy efficiency
- management of common household chemicals
- locally specific climate change adaptation

Inclusion of environmental and climate change awareness into school programmes can take the form of:

- dedicated trainings
- modules incorporated into lesson plans

Messages can be both on why preserving the environment is beneficial, also for people (see chapter on Protection mainstreaming), as well as how individual behaviours (both of affected people and organisations' staff) can contribute to environmental protection. It should also be linked to environmental activities undertaken in the day-to-day running of schools (see below). Where environmental education programmes are being planned or implemented in camps, consider establishing programmes for neighbouring and hosting populations and/or conducting joint educational activities. It is recommended that environmental education is designed in close cooperation with environmental specialists.

** For education projects with NFI distribution (e.g. school kits), refer to cross-cutting chapter on Sustainable Supply Chains.*

Day-to-day running of schools

Integration of environmental and climate-friendly activities in day-to-day running of schools can also reinforce the environmental and climate awareness raising efforts outlined above. It should complement, rather than replace teaching of essential subject matters, PSS, recreation.

Where a partner can control or influence the day-to-day running of schools, it should thus be part of the educational activities funded. Where the partner does not have full control over this, they should advocate towards national authorities/ the Ministry of Education to include the below-mentioned examples in the day-to-day running of schools.

The activities will depend on the context. Some examples of such activities include:

- waste revalorisation and management (including up-cycling and down-cycling)
- tree planting initiatives, or investing in school vegetable gardens, which can promote environmental education, development of livelihood skills and improving children's nutrition and eating habits. If greywater is collected in the area, it can be reused for watering the school gardens.

Such initiatives can be integrated as part of the school lessons modules and plans, where that is under the control of the partner (see above), or done as extra-curricular activities or non-formal educational activities.

In case DG ECHO is supporting school feeding programmes/initiatives, environmental considerations should be mainstreamed therein. *For the food and nutrition aspects, refer to the requirements under the Food Assistance and Nutrition chapters of this document, respectively.*

** For more information about waste management options, refer to the Waste Management chapter.*

Enhancing the sustainability of education facilities

Education facilities can respond to the growing climate emergency and environmental degradation by not only building resilience to extreme weather events and long-term stresses, but also through reduction and eventual elimination of environmental contaminants released by their facilities. DG ECHO thus recommends to improve the environmental sustainability of education facilities. An environmentally sustainable facility uses scarce resources more efficiently, thereby generating cost savings, reducing carbon emissions and pollution but also coping better with future hazards and climate change.

** For information about energy efficient systems, water reduction actions and sustainable facility design, refer to the Enhancing the sustainability of communal facilities and shelters section of the Shelter and Settlements chapter.*

USEFUL LINKS AND RESOURCES:

European Commission, 2020, Integrating climate change and environment in the education sector: The note teaches how to raise awareness about environmental issues and the impact of climate change and build key competences, skills and knowledge, enabling young people to grasp new job opportunities in the transformation towards a green economy.

UNESCO, Education for climate action: Through its Education for Sustainable Development programme, UNESCO has been working to make education a more central and visible part of the international response to climate change.

IIEP-UNESCO, Education 4 Resilience: Climate change and natural hazards.

USAID, 2015, Sector environmental guideline - Primary and secondary day schools: The purpose of this document and the Sector Environmental Guidelines overall is to support environmentally sound design and management (ESDM) of common USAID sectoral development activities.

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