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ENVIRONMENTAL FOOTPRINT OF HUMANITARIAN ASSISTANCE-SCOPING REVIEW

GROUPE URD

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Founded in 1993, Groupe URD is an independent think tank that specialises in analysing practices and developing policies for the humanitarian sector. Our multi-disciplinary expertise, based on continual field visits to crisis and post-crisis contexts, provides us with insight into the functioning of the sector as a whole. We believe in sharing knowledge and collective learning, and we help aid actors to improve the quality of their programmes.

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LIST OF ACRONYMS

AL: Atlas Logistique

CCCM: Camp Coordination Camp Management

DAC: Disaster Aid Committee

DG CLIMA: European Commission's Directorate-General for Climate Action

DG: Directorate General

DG DEVCO: European Commission's Directorate-General for International Cooperation and Development

DG ECHO: European Commission's Directorate-General for European Civil Protection and Humanitarian Aid Operations

DG ENV: European Commission's Directorate-General for Environment

DFAT: Australia's Department of Foreign Affairs and Trade

DFID: UK's Department for International Development

ECoP: Environment Community of Practice

EHAN: Environment in Humanitarian Action Network

EMAS: Eco Management Audit Scheme

ERC: Enhanced Response Capacity

FPA: Framework Partnership Agreement

GAC: Global Affairs Canada

GHD: Good Humanitarian Donorship

GHG: Green House Gas

HIP: Humanitarian Implementation Plan

HIPTA: HIP Technical Annex

ICRC: International Committee of the Red Cross and Crescent

ICT: Information and Communications Technology

IFRC: International Federation of the Red Cross

IO: International Organisation

IOM: International Office for Migration

INGO: International Non-Governmental Organisations

JEU: UN Environment/OCHA Joint Environment Unit

LSE: London School of Economics

LPG: Liquefied petroleum gas

MSB: Swedish Civil Protection

OCHA: United Nations Office for the Coordination of Humanitarian Affairs

PAHO: Pan America Health Organisation

PPP: Pilot Programmatic Partnership

RLH: Réseau Logistique Humanitaire

RUTF: Ready-to-Use Therapeutic Food

SDC: Swiss Development Cooperation

SF: Single Form

SIDA: Swedish International Development Cooperation

TA: Technical Advisor

UCPM: Union Civil Protection Mechanism

UNICEF: United Nations Children's' Fund

USAID: United States Agency for International Development

WFP: World Food Programme

WHO: World Health Organisation

"Big organisations, big responsibilities"

Chatham House, *The cost of fuelling humanitarian aid*, 2018

EXECUTIVE SUMMARY

Humanitarian assistance, by its very definition focuses its attention on people affected by conflict and disasters, looking in particular at their needs related to health, food, shelter and education (JEU, 2014). Subsequently, impacts on the environment - either related to the disaster itself, or to the ensuing humanitarian activity – are often viewed as secondary to the humanitarian imperative. This has led to the repeated occurrence of environmental degradation and destruction, which can impede the recovery of affected and vulnerable populations and host communities who depend on natural resources for their livelihoods, with negative and long-term impacts on their lives, and on ecological systems as a whole (ibid.).

There is growing recognition and awareness of the importance of addressing the environmental impacts of humanitarian aid, as well as the need for environmental protection and sustainability to be considered in humanitarian responses. Donors have a critical role to play to make change happen (JEU, 2014.). Recognising this, DG ECHO commissioned this study to take stock of the organisation's position and practices on this issue, with a view to identifying areas where it can change its own ways of working towards a greater alignment with environmental protection, and at the same time, influencing its partners to do the same. Such environmental mainstreaming within DG ECHO is also very timely, given the European Commission's priority to deliver on the European Green Deal in both EU internal and external policies and actions.

The subject of environmental protection and reducing the sector's environmental footprint, so-called "greening", is extremely broad, with many key elements to consider. There are both operational and programmatic approaches; discussions range from the greening of offices (e.g. banning of single-use plastics, recycling of assets etc.) to what types of seeds to distribute in livelihoods programmes. The issues involved are multi-dimensional, ranging from the global (e.g CO2 emissions) to the local (e.g. water table depletion), with impacts that can be direct or indirect (e.g. suppliers' standards), and short- or long-term. Environmental issues can be cross-sector, as is the case for logistics, the supply chain and cash transfer programmes, or they can be sector-specific (Shelter, WASH, Health, etc.). As such, it is important to acknowledge this breadth, and adopt a multi-pronged approach to addressing environmental protection, whilst also giving both the research and its recommendations certain parameters and priorities.

Another important consideration (and risk) is the frequent conflation of environmental protection and/or sustainable development with climate change adaptation/climate resilience. Whilst it is essential to consider these concepts in relation to each other, given how inextricably linked they are, climate resilience is only one element of environmental protection, which should also include thinking around biodiversity protection, regeneration and nature-based solutions. There is a tendency for organisations to use the term 'climate change' as a synonym for environmental issues (LSE, 2020)[1], and to focus mainly on resilience building and adaptation to climate change.

[1] *LSE DEC Study – preliminary findings, EHAN Network meeting, Geneva, 2020*

Reflecting this emphasis, many INGOs have staff tasked with working on climate change. It is often harder to find job descriptions and roles that include environmental protection (ibid.). An important role for DG ECHO could be to encourage more holistic, systems-thinking, which recognises the links between environmental degradation, the humanitarian sector's environmental footprint, climate change and sustainable development.

DG ECHO can also take a greater lead in requiring humanitarian actors to integrate prevention, preparedness and disaster risk reduction into their responses and linking relief to rehabilitation and sustainable development. This can be achieved by working more closely with other EC Services, particularly DG DEVCO, DG ENV, DG CLIMA and DG RTD. A great deal of knowledge and expertise, and a large number of systems and tools, could be harnessed by creating platforms and forums for cross- DG learning.

The systems and processes used by DG ECHO to manage its partner relationships and grants also offer significant entry points to bring about greater environmental consideration in partner programmes. The Humanitarian Implementation Plan (HIP) and its technical annexes (HIPTAs) would also be good entry points to support DG ECHO's partners' internal reflexion on how to take environmental issues into consideration, which has already begun with the 2020 HIPs and HIPTAs. The Framework Partnership Agreement and the Single Form are both under review in 2020, providing an opportunity for both to include environmental criteria or some kind of 'green' audit. In the case of the Single Form, recommendations from partners and DG ECHO staff included the possibility of embedding the use of a screening tool such as the NEAT+[2], which allows humanitarian actors to quickly identify issues of environmental concern before designing longer-term emergency or recovery interventions. A decision needs to be reached as to whether DG ECHO should add another marker – an environmental marker – to its requirements. An alternative would be to revise the Resilience Marker, currently included in the Single Form, to better reflect preparedness in humanitarian actions as well as measuring the environmental dimension of ECHO-funded humanitarian actions. This proposal would also support the more holistic approach discussed above, by bringing together preparedness and adaptive programmatic aims (present in resilience work), as well operational elements of environmental mainstreaming.

Following a recent trend amongst humanitarian organisations to put in place environmental policies, DG ECHO could both develop a stand-alone environmental policy/guidelines and green existing thematic policies (e.g. relating to Shelter, WASH, Health, Cash etc.). This would provide the DG with the necessary statement and commitment to environmental protection that it is currently lacking. Greening thematic policies was also widely supported, and a major opportunity lies in greening the forthcoming logistics policy (already under discussion and agreement within the Capacities and Operational Support division in Brussels), since the humanitarian logistics and supply chain represent such a cross-cutting entry point for reducing the environmental footprint of humanitarian aid.

Putting in place a focal point/environmental expert in Brussels, whose sole focus is the intersection of humanitarian aid and environmental protection, was also seen by partners and experts as an essential first step. Similarly to other cross-cutting issues, an internal task force/community of practice could also be established to enhance mainstreaming of environmental issues across policies/operations, coordinated by the appointed focal point. Though it could be argued that including environmental activities in all job descriptions would be preferable to

[2] *Nexus Environment Assessment Tool*

having a focal point, as one interviewee put it, 'If it is everyone's job, then it is nobody's job'. For both DG ECHO and its partners, the question of resources and investment is a central concern in terms of moving towards greater environmental awareness and more sustainable programming. Although there are some instances where costs may in fact be reduced (e.g. moving to more online training and video conferencing instead of staff travel), environmental mainstreaming will require initial investments.

Another crucial process in working towards a greener sector and a reduced environmental footprint is to undertake office-level greening, both in the field and in headquarters, for example, through banning single use plastics, reducing the number of international flights and using renewable energy. Taking steps to adapt internal day to day activities and ways of working can offer quick wins, whilst ensuring coherence with the rolling-out of environmental activities in humanitarian programmes. For DG ECHO such steps would help maintain credibility if environmental requirements are placed on their partners; there are already bold plans underway to carry out a more systematic greening of DG ECHO's field offices. This process also offers an opportunity to bring about the necessary shift in mind-set that needs to take place for each individual in order for there to be both awareness and then action related to environmental safe-guarding.

Perhaps the greatest opportunity in terms of reducing negative environmental impacts lies in the way in which greening activities frequently dovetail with the cost efficiency agenda driven by the Grand Bargain - principally concerning logistics and the supply chain. This agenda has seen the development of key strategies to optimise the supply chain for better, smarter, and more efficient aid delivery. These include greater disaster preparedness, pre-positioning of stock, pooling of resources, localisation and reverse logistics, all of which can also have environmental benefits. A "greened" logistics policy, where this synergy is made explicit, as well as support to the development of a "greened" logistics standard[3], are two key ways in which DG ECHO can have a major impact in reducing its environmental footprint.

Integrating environmental issues across sectors is another effective way of addressing environmental concerns and there are multiple technical adaptations possible and many considerations to take into account. To give an example from the Cash sector, multi-purpose cash modalities present interesting complexities, challenges and opportunities in addressing environmental impacts (LSE, 2018). Since cash has been championed by the humanitarian community in recent years, efforts should be made to ensure this form of assistance is used in a way that takes into account any potential negative environmental impacts.

As a global leader in humanitarian funding, DG ECHO is in a position to make a hugely significant impact in terms of how its partners and its own staff uphold the 'Do No Harm' principle in relation to the environment and those whose lives depend on it. There is a willingness within the sector, as well as institutionally, to make the radical changes that are so urgently needed to reduce our environmental footprint, and it is the moment for DG ECHO and other humanitarian donors to harness this momentum Humanitarian donors have a key role to play in making this shift towards a greener sector.

[3] *Currently in development through the INSPIRE Network, supported by ECHO*

INTRODUCTION, METHODOLOGY AND DEFINITIONS

The increasing gravity of environmental challenges, including those that are climate-related, coupled with the dependency of affected people on natural resources, calls for a "collective responsibility" of humanitarian actors to reduce the environmental impacts of their actions, i.e. their environmental footprint. Donors have a critical role to play to make change happen[4].

Like other humanitarian donors, DG ECHO has leverage to ensure that the organisations it funds take into account environmental concerns in their aid programmes, in accordance with the Do No Harm principle, and in line with the principles of accountability towards affected populations, which are at the very heart of their work. For many actors, there is antagonism between "saving lives" in the short term versus "protecting the environment" in the long term. This equation needs to be revisited.

Reducing the environmental footprint of humanitarian assistance is of utmost importance. On the one hand, local environmental stresses can and will further hinder peoples' livelihoods and even lead to conflict, exacerbating humanitarian needs globally. On the other, neglecting the environmental impacts of a sector aiming to support people's livelihoods would send the wrong message. There is little doubt now that climate change and other environmental challenges will increase the number of disasters and humanitarian needs exponentially (IFRC, 2019). In addition, reducing the environmental impact of humanitarian action is also about bringing coherency between the overall aim of humanitarian assistance and its ways of working, since a large number of people in need are in countries where the environment is already very fragile and humanitarian aid should not exacerbate that. This requires a real shift in thinking, not only towards a greater awareness and sensitivity to environmental and climate issues, but also to the development of an operational strategy for implementing "environmentally friendly" humanitarian solutions.

The objective of this review was to take stock of DG ECHO's position and practices in relation to their environmental footprint (i.e. the actions funded plus own operations) with a view to identifying and recommending areas for progress. The study aimed to map out existing initiatives in the humanitarian sector that address environmental concerns (DG ECHO, other donors) as well as the practical tools (ex: guidelines, training etc.) used by the humanitarian community to this end. The study aims to help DG ECHO to identify how it can support its partners in the complex endeavour of reducing their environmental footprint and consequently, that of activities supported by the European Union.

The terms "environmental footprint" or "environmental impact" here are used to refer to all the impacts which humanitarian aid can have on the environment, including through its carbon footprint. When addressing these issues in the humanitarian sector, it is important to keep in mind the following categorisation of impacts:

- Impacts that are direct, linked to humanitarian operations (e.g. impacts from humanitarian actors' offices and programmes), and impacts that are indirect, coming from suppliers, service providers, and are linked to the consequences of the operation.

[4] *"Increasing Effectiveness, Sustainability and Accountability" 2014 JEU, Pro Act, Groupe URD* http://www.urd.org/wp-content/uploads/2018/09/EHA_Study_web_version1-1.pdf

- Impacts that are **local**, occurring at the place of the humanitarian operation (e.g. deforestation to make space for a settlement), and those that are **global** (e.g. CO2 emissions, deforestation linked with unsustainable agricultural practices).
- Impacts that can be observed in the **short term** (during the timeframe of the project) and those which can be observed in the **medium/long term** (after the end of the crisis or the departure of humanitarian actors).

This categorisation is useful as it helps humanitarian organisations think about the different levels at which their work has an impact. It can also help illustrate the wide range of impacts and the potential difficulty of addressing all of these fully, particularly considering trade-offs between different priorities.

1.CONTEXT

1.1 The role of humanitarian donors

There is little doubt of the influence that donors have on humanitarian practices, as was seen in the rapid increase in cash interventions. In a study carried out in 2014, JEU stated that a "business as usual" approach to planning and managing the environment in humanitarian action was no longer acceptable and that "donors have a key role in making change happen"[5]. In this section, we will explore some of the lessons learnt from other humanitarian donors on these issues.

Humanitarian donors address environmental issues at different levels and have different approaches. A table summarising the environmental approaches of some of the main humanitarian donors can be found in Annex 1. Some donors have opted to introduce environmental criteria at the partner selection phase. Both Swedish International Development Cooperation (SIDA) and Global Affairs Canada (GAC) require that their partners develop an organisation-wide environmental policy and set up an internal environmental management system. This has had significant implications for some organisations such as ACTED for instance, which has embarked on an interesting environmental journey since its partnership renewal with GAC[6]. This has included the development of an environmental action plan, the assessment of the organisation-wide carbon footprint and an internal sensitisation program.

Selecting partners according to environmental criteria (although they are never the sole criteria), is an interesting strategy as it encourages partners to have an organisational approach to environmental mainstreaming, which then influences the ways in which the organisation operates and delivers its programmes. One challenge that this approach brings however, is the difficulty for donors to follow up on the implementation of the environmental commitments made by the partners. Some donors (e.g. Australia's Department of Foreign Affairs and Trade – DFAT) monitor the implementation of environmental measures stipulated in their environmental safe-guarding policy through a review of all safeguard documentation, partner monitoring reports and monitoring of emerging and existing safeguard risks, updated through the partner's risk register at least every quarter.

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[5] *Joint Environment Unit 2014 « Increasing effectiveness, Sustainability and Accountability"* https://www.unocha.org/sites/unocha/files/EHA%20Study%20webfinal_1.pdf

[6] *The organisation has invested 25 000 EUR of private funds in an organisation-wide carbon footprint analysis*

Another approach, adopted by DFID for instance, has been to link environmental requirements with logistics and supplies. In 2019, the new version of DFID's Supply Partner Handbook included a full chapter on environmental issues, which includes a demand for environmental safeguarding policies to be put in place for suppliers (DFID, 2019)[7]. DFID has also been talking about integrating environmental concerns into their approach to value for money[8]. Currently this approach has a "3Es Framework", which details how economy, efficiency and effectiveness should be addressed by their partners (DFID, 2011)[9]. They mentioned how discussions are under way to add a fourth 'E' for environment to this framework, which would place this issue at the heart of DFID's work.
SDC, USAID and SIDA have opted for a project-based environmental approach and require (or encourage) the projects to go through an environmental assessment. SDC's CEDRIG[10] is a tool which allows partners to anticipate a large number of environmental impacts that projects can bring, as well as ways to mitigate them. However, exemptions apply for some humanitarian projects. SIDA have also set up a "Green Tool Box"[11] which aims to support practitioners in greening their projects. It includes a list of environmental indicators applied to humanitarian interventions.

One common feature amongst most humanitarian donors is the existence of internal environmental policies as well as the presence of in-house experts/departments who are able to provide support internally and to partners[12] both in the field and in HQ. Indeed, it is crucial to have dedicated staff working on environmental issues, particularly in the early stages of adopting an environmental policy or guidance, and it is also important to invest resources in conducting internal training.

Most of the humanitarian donors that were interviewed as part of this research expressed their desire to work collectively as a donor community and adopt a common approach to present to implementing partners. A good entry point would be to address environmental issues at the Good Humanitarian Donorship Initiative level, revising its principles to include minimizing the environmental impacts of humanitarian aid. Since 2018, the OECD's DAC committee has been undertaking a peer review exercise on environmental mainstreaming in humanitarian funding, which could be interesting for DG ECHO to take part in.

1.2. Current enabling conditions

The evaluation of DG ECHO's humanitarian assistance (2012-2016)[13] flagged up the need for more consideration of environmental and climate change issues in its work. Though the present study has found that DG ECHO has not yet integrated environmental issues in a systematic way, it seems clear that the timing is right for the institution to reconsider its commitment and review its approach. In this section we will explore some of the internal and external opportunities that will help encourage this momentum.

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[7] *Supply Partner Handbook, DFID, 2019,* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/816646/Supplier-Partner-Handbook-12July2019.pdf

[8] *EHAN meeting, 6th February, 2020, Geneva*

[9] *DFID's Approach to Value for Money, DFID, 2011*

[10] *Climate environment Disaster Risk Reduction Integration Guidance* (www.cedrig.org)

[11] https://www.sida.se/English/partners/methods-materials/green-tool-box/

[12] *SIDA – 4 environmental advisors in the humanitarian unit, USAID- 3 environmental specialists*

[13] *Comprehensive evaluation of the European Union humanitarian aid, 2012-2016, Final report, Jan 2018.*

Most pressing is the fact that climate change and environmental degradation are leading to escalating disasters and vulnerability, calling for radical change across all sectors and systems. For the humanitarian sector, mandated with saving lives and reducing suffering, examining and mitigating its own footprint on the environment should be a clear priority. The general momentum driven by the European Green Deal, launched by the European Commission in December 2019, represents a significant opportunity for DG ECHO to align its strategy with that of the Commission as a whole. The Green Deal's commitments[14] on transport, energy, biodiversity protection, pollution reduction etc. aim to make Europe a carbon neutral, climate resilient and environmentally sustainable continent by 2050. All parts of the European Commission are expected to align their activities with these principles. In order to comply with these commitments, DG ECHO will have to adapt many aspects of its work.

There are signs that a real shift in awareness is currently taking place. At the 2019 Partner Conference, DG ECHO's new Director made a strong commitment to more environmentally- and climate-sound humanitarian action. What is more, the majority of DG ECHO staff interviewed for this review agreed that environmental challenges will further increase humanitarian needs. It therefore seems that the time is ripe for DG ECHO to look at its environmental footprint in a serious and committed way.

Since the beginning of 2019, there has also been a visible shift in the way the humanitarian sector as a whole is addressing and positioning itself towards environmental issues. The dichotomy which opposes the "humanitarian imperative'" and "environmental protection" is increasingly seen as outdated. DG ECHO's partners are progressively addressing these issues whether at programme or organisational level and are looking for guidance. Some partners are quite advanced and could act as leaders/champions. One of the key findings of this review has also been that a lot of tools, guidance, training and initiatives are currently being rolled out and that there is no need to reinvent the wheel (see annex 2 for more details)

1.4 Challenges

To drive change, there is a need to get some insight into the real obstacles that prevent the sector from addressing environmental issues more effectively despite growing recognition of the need for it to play its part. In this section, we will explore some of the challenges faced by partners and DG ECHO in adopting an environmental approach.

The duration and level of humanitarian funding was put forward as being one of the main challenges in taking environmental issues into account in their operations. Partners felt that they had generally no resources to invest in green solutions. This is linked with the generalised pre-conceived idea that environmental mainstreaming is essentially about investing in green technologies. Indeed, some solutions such as the introduction of energy efficient cook stoves do take time to implement in an efficient manner. However, taking environmental issues into consideration is often more about anticipating environmental risks and therefore making environmentally sound decisions, while using tools that have already been developed, e.g. the NEAT+.

[14] https://ec.europa.eu/info/sites/info/files/european-green-deal-communication-annex-roadmap_en.pdf

Although this review has shown that a lot can be done without investment, we need to accept that environmental mainstreaming will not happen on its own and that there is an inevitable initial cost whether it is investment in human resources, time or financial resources, although savings may result further down the line due to more efficient operations. Linked to this, environmental mainstreaming can affect the balance between support and programme costs, especially when it comes to the greening of logistics or offices.

Another significant obstacle is the lack of technical expertise, among both partners and DG ECHO, particularly regarding the introduction of new environmentally beneficial solutions in humanitarian programmes such as solar energy, eco-sanitation solutions or environmental assessment tools. Hydrogeology has also been identified as a significant gap in humanitarian expertise (Groupe URD, 2019). This expertise would for instance enable humanitarian workers working in WASH interventions to better understand the nature of soils and aquifers as well as the implications of their actions on the local environment. This will be developed in the WASH section.

Another challenge is the replication of humanitarian aid projects from one crisis to another, maintaining business as usual. This results in a failure to design humanitarian projects differently, in a way which anticipates, reduces and mitigates their environmental impacts. The lack of awareness of how humanitarian projects can impact the environment as well as the lack of environmental sensitivity of many staff within DG ECHO and their partner organisations constitute a significant barrier to designing projects differently. As shown in the study report on humanitarian practices (Groupe URD, 2019), environmental mainstreaming is highly dependent on the environmental awareness of individuals.

In addition, there is a tendency among some humanitarian donors and large agencies to link environmental mainstreaming with technological innovation. Investing in green solutions/innovations (e.g. solar pumping, distributions of blankets made of recycled materials), is essential to support the process towards a green humanitarian sector. Having said that, more research on the relative cost/benefits (ratio between the financial cost and the environmental gain) of different green innovations could be beneficial for DG ECHO, to help make financial decisions s. Nevertheless, it is important to keep in mind that this type of approach may overshadow the roll-out of simpler and cheaper initiatives that are equally effective (such as reduced energy consumption, banning single use plastic, better planning, preparedness etc), and that a lot can be done without investment.

Having said that, the pressure for more efficiency coupled with increased humanitarian needs is a reality. This could result in programme quality being side-lined in order to reach the largest number of people. If meeting certain environmental criteria is made mandatory but not accompanied by the necessary additional financial resources, it could place a disproportionate burden on partners.

In the past, the Enhanced Response Capacity (ERC) Humanitarian Implementation Plan (HIP)enabled DG ECHO to fund some large, sector-wide pilot projects that had environmental safeguarding as a main objective. Two examples of such projects were: the Set4Food Initiative[15] implemented by Coopi, which aimed at reinforcing the use of sustainable energy solutions in humanitarian settings notably through training and the roll out of an online platform,

[15] *Sustainable Energy Technologies for Food Utilization in Humanitarian Settings, ECHO/ERC/BUD/2014/91006 and ECHO/ERC/BUD/2016/91004 (1/06/15-30/04/2018)*

and; the Global Solar Initiative, implemented by IOM, which aimed at mainstreaming efficient use of solar technology in water projects[16].

Lastly, one should note that mainstreaming environmental issues in the response phase of acute emergencies or conflict situations (e.g. Yemen) can be challenging, although these challenges may be overcome if addressed at the preparedness stage. DG ECHO is already engaged in the environmental dimension of sudden-onset crises through the UN Environment-OCHA Joint Environmental Unit (JEU) by providing European environmental experts through the Union Civil Protection Mechanism (UCPM). Since 2014, the UCPM provided environmental expertise to the JEU 21 times, a total of 29 experts. DG ECHO is also a member of the Strategic Advisory Group on Environment and Emergencies (SAGEE) which serves as a principal advisory group to OCHA and UN Environment, informing the development of policies related to environment and emergencies. There is therefore already a solid basis for cooperation with the JEU, which should be extended to working on mainstreaming environmental considerations in humanitarian operations.

2. Sector-based impacts and mitigation measures

In this section we will be presenting some of the negative impacts that humanitarian action can have on the environment. Being aware of environmental risks linked to humanitarian operations is an important step in the adoption of an environmental approach as it can inform planning, although solutions might not become apparent immediately. We will also present some of the mitigation measures which could or have been implemented by actors to help reduce these risks. While opportunities for greening may vary from one context to another, they might need to be applied on a case-by-case basis according to the nature and the stage of the humanitarian crisis.

2. 1. Food and Livelihoods sectors

Food assistance is one of DG ECHO's largest sectors of intervention. In 2018, it provided about €336 million for humanitarian food assistance[17], 55% of which was channelled through in-kind distributions. In this section we will first explore some of the environmental challenges linked with in-kind food assistance.

IMPACTS

Below is a list of some of the impacts which can be attributed to food and livelihoods assistance (other than cash):

- Generation of waste linked with food packaging (most often plastic and/or not recyclable) - *local impact*
- Co2 emissions linked with transportation of food - *global impact*.
- Over-exploitation of natural resources linked to programmes aimed at income-generating activities[18]-*local impact*.

[16] *Reducing Medium- and Long-Term Recurrent Costs: mainstreaming the use of Solar Energy to ensure water supply in local communities, refugee and IDP Camps CHO/ERC/BUD/2016/91009 (2016-2018)*

[17] *DG ECHO Food assistance factsheet*

[18] *Groupe URD's study in Minawao camp showed for instance that an income-generating activity which had been developed by the refugee community was to sell firewood.*

- Deforestation linked to types of dry food distributed to beneficiaries that require significant amounts of fuel for cooking-*local impact*.
- Deforestation, CO2 emissions and soil contamination linked to the distribution of unsustainably produced food items-*global impact*.

> *Unmilled maize distributed to Rwandan refugees in Tanzania led to deforestation, since greater quantities of wood were needed for cooking as the hard maize took longer to cook (Pottier, Johan, Disasters Vol 20, No.4, 1996).*

> *47 tons of wood being cut on a daily basis in Minawao camp due to dry food being distributed and the lack of energy efficient solutions being provided by the aid sector (Brangeon, Environmental implications of refugee settings, 2017)*

> *Ruined livelihoods from an over-provision of fishing boats and consequent fishing stock depletion in humanitarian recovery operations in post-tsunami Sri Lanka (Alexander, 2006);*

MITIGATION MEASURES

Systematic consideration of energy efficient solutions in food assistance programmes:

Energy is undoubtedly the missing link in most food assistance operations. Energy and Food/Livelihood programmes are too often considered to be separate sectors of humanitarian interventions, despite the fact that they are strongly intertwined: wood is used to cook and preserve dry food and for water purification, and is sometimes sold as an income-generating activity (Groupe URD, 2017). Where natural resources are scarce, a poor energy supply can lead to further food insecurity, thus hindering the positive impacts of food and livelihoods projects: "Without access to a predictable energy supply, communities that are not food insecure may become so and those who are already food-insecure may become even more vulnerable" (Barberi, 2018).

The lack of systematic consideration of energy efficient solutions by humanitarian actors often leads to an overreliance on wood as an energy source, leading to local deforestation and consequently soil erosion. Considering energy solutions in food aid programmes is about offering alternatives to the 3-stone systems and promoting energy efficient cooking solutions (see box below). It is also about choosing food items that require less energy to cook, particularly in countries with high pressure on wood.

> *In Tanzania refugee camps, beans were distributed, which need four hours for cooking, putting extreme pressure on wood around the camp. Encouraging beneficiaries to pre-soak beans can help reduce the duration of cooking (JEU-sector tip). The distribution of fresh vegetables, although challenging from a logistics point of view, is also an alternative which can bring many nutritional benefits. Fresh foods also require less time to cook.*

Nevertheless, implementing energy projects is complex and requires significant time, competencies and dedicated funding. Various energy efficient cooking techniques exist and could be used by aid actors depending on the context (solar cookers, improved cookstoves, LPG etc.). Groupe URD and BISS[19] have developed a technical factsheet to

[19] *Bolivia Inti Sud Soleil & Groupe URD 2017* https://www.urd.org/wp-content/uploads/2019/06/Factsheet_EcologicalCooker_2017.pdf

help understand the advantages and inconveniences of some of these solutions. Energy experts recommend using a combination of different energy solutions in a complementary way because of the challenges (mainly cultural) linked with moving away from 3-stone systems and the variety of cooking needs in a community. LPG solutions are considered by some as being a good transition option as they are easy to quickly deploy on a large scale. However, there are issues of sustainability where beneficiaries might not have the purchasing power to buy refills at the end of the programme.

The Set4Food Initiative funded by DG ECHO (ERC budget) from June 2014 to April 2018 aimed to address these challenges by setting up online tools to promote energy efficient solutions and support humanitarian actors in their decision-making. However, the impacts of this project on the use of energy efficient solutions by humanitarian actors (including DG ECHO's partners) are not clear as energy issues are still not mainstreamed in ECHO-funded responses.

The humanitarian sector is still ill-equipped to address energy issues in its responses. Challenges include technological barriers but they are mostly institutional, operational, and political as numerous energy efficient solutions now exist. There is a "severe shortage of energy expertise in the humanitarian system and no systematic approach to planning for and managing energy provision" (Lahn and Grafham 2015). Another significant challenge in deploying energy efficient solutions for crisis affected populations is the fact that there is no 'one-size-fits-all' solution. Proper analysis of needs and context is required in order to ensure sustainability (many examples have shown that distributed energy efficient cooking stoves end up being sold in the local market). The success of these projects therefore depends a great deal on the ability of humanitarian actors to carry out specific assessments and to take the time to understand and address the specific cooking needs and habits of the people, including the size of their households.

There is a need to "formally recognize sustainable energy access as a priority within the humanitarian system"[20]. DG ECHO has a role to play to support and expect more from its partners in terms of mainstreaming sustainable energy solutions in humanitarian projects. It could also continue allocating specific funds for energy projects, and support capacity building. As one of the main humanitarian aid donors, DG ECHO could also be strongly promoting existing solutions and initiatives such as the Moving Energy Initiative led by Chatham House[21] or the Global Plan of Action led by UNITAR[22], and would benefit in being part of discussions which are being held in the SAFE (Safe Fuel and Energy) working groups[23]. An interesting programme which DG ECHO could be part of is the Energy Development Partnership funded by 6 donor countries[24], which aims at improving the energy expertise of the humanitarian sector and reinforcing links between development and humanitarian actors. It has, for instance, resulted in a partnership between UNHCR and GIZ to better implement energy projects in Uganda, Ethiopia and Kenya[25].

> *In Cox's Bazar, where the camps are located in a natural park, 90% of refugees were given LPG cookers early on in the response. These are regularly recharged by IOM and Total (through DG ECHO funding).*

[20] *Global Plan of Action – Framework:* https://unitar.org/sites/default/files/media/file/gpa_framework_final-compressed.pdf
[21] https://mei.chathamhouse.org/
[22] https://unitar.org/sustainable-development-goals/peace/our-portfolio/global-plan-action-gpa-sustainable-energy-solutions-situations-displacement
[23] https://www.safefuelandenergy.org/about/working-group.cfm
[24] *The Netherlands, Germany, Norway, United Kingdom, Switzerland and Sweden*
[25] https://endev.info/content/Main_Page

Promotion of locally purchased food:

As mentioned above, one significant way to reduce the GHG emissions of aid is to promote locally-purchased food to avoid shipping food assistance from far away. In accordance with DG ECHO's thematic policy on food assistance[26], local purchasing is promoted when possible by its main food partners[27]. However, local purchasing is not always possible due to 1) the availability of food supplies, and 2) pressure for cost-efficiency, which remains one of the main criteria in the choice of suppliers.

> *"As part of its support to smallholder farmers and agricultural markets, WFP is increasing its local purchases of food and encouraging greater efforts to reduce food losses along the value chain. Depending on the context of WFP operations, locally procured food can reduce the need for and cost of transport, thus benefiting the environment. Prevention of post-harvest losses can increase the availability of food worldwide without consuming additional natural resources".*

Promotion of sustainably produced food:

As mentioned above, humanitarian food aid programmes can have significant environmental impacts globally when distributed food items are produced in an unsustainable way: in terms of quantities of water used, use of chemicals and pesticides, intensive agricultural practices, CO2 emissions linked with agricultural production and deforestation etc. The drive for greater cost efficiency can lead to partners buying the cheapest produce, which often does not coincide with environmental sustainability.

Some of DG ECHO's partners are already promoting sustainable agriculture and giving priority to sustainable procurement of food. These principles are, for instance, embedded in WFP's environmental policies and purchasing guidelines (Doing business with WFP[28]). ICRC have also been working on the sustainability of the items which they distribute.

> *ICRC have carried out extensive life cycle assessments of the main food items distributed by the organization. This analysis has shown that rice is the item with the most significant impact on global warming from the emissions of methane (CH4) and nitrous oxide (N2O) by rice paddies.*
> *This analysis has shown that rice production does not have the same impact according to the countries of production. Rice produced in USA has a higher global warming impact than that in China (ICRC documents).*

The case of GMOs:

The issue of the use of GMO produce (food, processed food and seeds) in the humanitarian sector is a complex and controversial one, which would require additional in-depth research. Here are nevertheless some findings which could help contribute to further reflection on the subject.

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[26] *DG ECHO's thematic policy on Food Assistance: from food aid to food assistance, November 2013:* https://ec.europa.eu/echo/files/policies/food_assistance/them_policy_doc_foodassistance_en.pdf

[27] https://www.wfp.org/publications/2017-wfp-environment-policy: *"As part of its support to smallholder farmers and agricultural markets, WFP is increasing its local purchases of food and encouraging greater efforts to reduce food losses along the value chain. Depending on the context of WFP operations, locally procured food can reduce the need for and cost of transport, thus benefiting the environment. Prevention of post-harvest losses can increase the availability of food worldwide without consuming additional natural resources".*

[28] https://www.wfp.org/do-business-with-wfp

First, it is important to mention that this issue is a particularly complex one, given the difficulty of tracing whether a product is GMO or not (specifically for processed food), as many products have a mix of GMO and non-GMO components. Second, though it has been at the centre of numerous debates and media attention, the long-term environmental impacts and the impacts on human health of GMOs are not clear.

Finally, international legislation on the use of GMO varies from one county to another which makes it complicated for the humanitarian sector to have a harmonised approach. Indeed, while the USA (where large quantities of WFP food produce come from[29]) and Brazil have more flexible approaches with respect to GMOs, the EU and some recipient countries are sometimes more restrictive on the use and imports of GMOs. In addition, not all nations require that GMOs are labelled as genetically modified[30].

While it is difficult to put forward recommendations with regards to this, it is important to highlight some of the risks which the use of GMO represents for DG ECHO and its partners. GMOs are often associated with intensive agriculture and the use of pesticides.. In the specific case of livelihood support programmes, if GMOs were distributed, another risk is that of "outcrossing", a process by which genes of GMO plants are mixed with local plants, therefore modifying local biodiversity, and creating problems of invasive or mutated species[31]. DG ECHO recognises these risks to some extent, and encourages partners to be careful about using GMOs in humanitarian programmes. However, how this translates operationally is unclear:

> *"Regarding GMOs (Genetically Modified Organisms), and in support of the "do no harm" principle, humanitarian food assistance partners are expected to safeguard the interests of their beneficiaries in the selection of food commodities and agricultural inputs (concerning safety, appropriateness and effectiveness), whilst also conforming with the relevant national policies and legislation in the country of operation" DG ECHO's food assistance policy.*

As such, DG ECHO's partners have different approaches with regards to GMOs. ICRC applies the precautionary principle and currently bans the use of all GMO seeds and food distributions. With regards to donations, ICRC carries out tests on samples by certified laboratories following ISO norms.

Understandably, WFP is in a more difficult position given for instance the donations that it receives from the USA and Brazil. While there is no mention of GMOs in its environmental policies, the technical specifications of certain items address this issue, e.g. the super cereals technical specification: "Super Cereals should come from non-GMO if the contract requires and for Maize (if required by the country)"(WFP's Super Cereals specificities).

It should be noted that the policies of some agencies, like WFP and UNICEF, which encourage local procurement of food, might be a factor which reduces the risk of the use of GMOs in their programmes. Indeed, recipient countries are increasingly banning the use of GMOs and are imposing restrictions on the distribution of non-GMO produce in their countries. Further research might be useful on this issue in order to make sure DG ECHO applies the precautionary principle with respect to the environmental risks which GMO food and seeds present, and in order

29 WFP receives a large amount of food as donation, while purchasing from everywhere and promoting local purchase when possible.

30 Environment –Question of the World Food Programme (WFP)'S Use of Genetically Modified Organisms to aid populations in need http://asp-edu.net/pamun/pamun2013/wp-content/uploads/2014/09/WFP-GMO.pdf

31 Environment –Question of the World Food Programme (WFP)'S Use of Genetically Modified Organisms to aid populations in need http://asp-edu.net/pamun/pamun2013/wp-content/uploads/2014/09/WFP-GMO.pdf

to be in line with the European Commission's policies on GMOs. At this stage, it is not clear whether GMO seeds and food distributed as part of DG ECHO's programmes are the same as the ones which are allowed for use in the EU.

> *"Because of the high demand for non-genetically modified white maize, Southern African countries – particularly Zambia – became an important source of food for WFP's activities in East Africa." Extract from WFP's annual board meeting 2018*

The case of Palm Oil

Palm oil is the most commonly used oil distributed in food aid programmes given its low cost and availability in large quantities. The purchase and distribution of palm oil represents a significant environmental challenge for DG ECHO, as most of the palm oil produced internationally and distributed by DG ECHO's partners comes from Indonesia and Malaysia where palm oil production, despite efforts to reduce its social and environmental impacts, has resulted in massive deforestation since the 90's[32] In addition to biodiversity loss and impacts on community and indigenous rights, there is little doubt that the uncertified palm oil industry is a significant contributor to climate change. Large quantities of GHG are released when forests are cleared and peatland drained to establish oil palm plantations[33]. Greenpeace estimates that 1.1 million hectares of forest per year is lost every year in Indonesia and it is estimated that the production of 1 ton of Palm Oil represents between 10 to 30 t of CO2 emissions (peatland decomposition alone, this does not take into consideration the production and the transportation of palm oil)[34]. Although palm and sunflower oil represent only 6% of the total food purchased by WFP in 2018[35], WFP purchased 207 000 metric tons of palm oil and sunflower oil in 2018[36], which represents between 2 and 6 million Mt of CO2 per year.

The majority (74%) of WFP's palm oil is purchased either in Indonesia or Malaysia via a single company which has been targeted by various environmental groups for massively contributing to deforestation. Besides, the carbon footprint of transporting oil from Indonesia to Africa or the Middle East - where a large proportion of DG ECHO funded programmes are run - is substantial.

While there have been significant efforts to purchase palm oil from sustainable sources, only 7% of the palm oil purchased by WFP currently is sustainable and in keeping with RSPO (Roundtable of Sustainable Palm Oil) standards[37]. This constitutes a real challenge as: 1) there are not sufficient quantities of sustainable palm oil[38] while the price of conventional palm oil is decreasing, and; 2) some environmental specialists are highly critical of the mechanisms in place to certify the sustainability of palm oil for RSPO producers. "Auditing firms are fundamentally

32 European Parliamentary Research Service Blog: https://epthinktank.eu/2018/02/19/palm-oil-economic-and-environmental-impacts/

33 Frying the forest "how India's use of palm oil is having a devastating impact on Indonesia's rainforest, tigers and global climate Greenpeace India 2012.

34 Frying the forest "how India's use of palm pol is having a devastating impact on Indonesia's rainforest, tigers and global climate Greenpeace India 2012.

35 « Doing Buisiness with WFP » Internal Food Procurement August 2018. https://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp236434.pdf?_ga=2.98530527.1310085889.1571993008-720077442.1570800932

36 Update on Food Procurement, WFP June 2019 Executive Board Annual session.

37 37 https://www.rspo.org/

38 19% of palm oil production is certified by RSPO

failing to identify and mitigate unsustainable practices by oil palm firms"[39] and accuse the RSPO roundtable of "not being able to break the link between deforestation and palm oil production"[40].

Indeed, RSPO has been criticised for having different levels of certification with different environmental standards . These standards are all encompassed in the RSPO certification systems, but they do not all provide the same level of sustainability (interview with Greenpeace):
1) sustainable practices are implemented in separate plantations from conventional ones. This is referred to as best practice and it is called "segregated plantation";
2) sustainable practices and conventional practices are used in the same plantations. This is called the "mixed" standard,
3) there is no traceability of sustainable palm oil. This is called the "green certificate".

Therefore, according to Greenpeace, the RSPO certification cannot qualify as sustainable. Greenpeace encourages Palm Oil purchasers to follow POIG standards,[41] which are more demanding than RSPO standards. It should be noted here that others (such as WWF) are less critical, stating that RSPO standards have recently been strengthened[42] and that efforts to purchase sustainable palm oil should be maintained.

At the same time, proposing an alternative to palm oil is very tricky as palm oil production has the highest yield (up to 8 times higher than soy) and therefore requires significantly less land for production[58] (see Figure 3). Encouraging the purchase of other oils might create additional risks of deforestation globally:

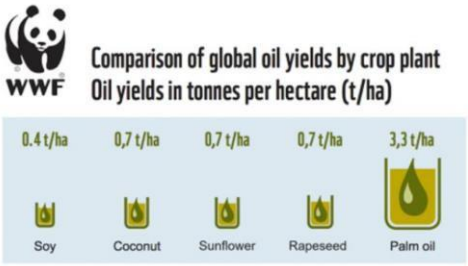

Figure 1: Oil yields

Nevertheless, where local alternatives exist, these should be explored according to the cultural habits of beneficiaries and available local productions which would limit the CO2 footprint linked to transport. Such as:

- Local groundnut production - West Africa has a lot of traditional groundnut plantations and these could be distributed and transformed in camps as a livelihood activity. Local groundnut oil producers could also be supported to improve the quality.
- Sesame oil can be a complementary alternative, although existing productions in Africa are usually small scale and cannot cover needs globally.

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[39] Environmental investigation agency & Grassroots "Who watches the watchmen: auditors and the breakdown in the oversight of RSPO" 2015.
[40] Frying the forest "how India's use of palm oil is having a devastating impact on Indonesia's rainforest, tigers and global climate Greenpeace India 2012.
[41] Palm Oil Innovation Group- http://poig.org/
[42] https://www.wwf.org.uk/updates/8-things-know-about-palm-oil

- Examples of growing soya in camps in Uganda have shown that local distribution network solutions can be explored.

2.2. Shelter and settlements sectors

Historically, the links between shelter/settlements activities and the environment have been better documented than for the other humanitarian sectors and more specifically by the Global Shelter Cluster's environment community of practice[43], and more recently the new version of the Sphere Handbook (2018). DG ECHO's humanitarian shelter and settlements guidelines, published in 2017, include many of these considerations and flag up the various issues to consider at each stage of the project cycle. Some of these elements will be discussed in this section.

IMPACTS

- Deforestation/desertification linked to the construction of shelter (if wood is purchased locally or from unsustainable sources)-*local and global impacts*
- CO2 emissions linked to international transport of wood and other NFI items in shelter programmes-*global impact*
- Soil deterioration/excavation for brick making for shelter construction[44].[45]- *local impact*
- Over-exploitation of wood/deforestation linked to tarp or plastic sheeting distribution – if tarps are distributed, it can be expected that beneficiaries cut tress to install them- *local impact*
- Plastic waste being generated by low quality tarps-*local impact*
- Plastic waste being generated by non-recyclable packaging in kit distribution- *local impact*.
- Soil erosion linked to unsustainable sand and gravel extraction from rivers for shelter construction-*local impact*
- Deforestation/desertification linked to the presence of settlements and the need for cooking and heating fuel for refugees-*local impact*
- Soil erosion and irreversibility of land use as a result of the presence of settlements- *local impact*
- Cutting down trees to set up camps- *local impact*
- Improper location of settlements (e.g. in nature reserves or along animal migratory routes)- *local impact*

UNEP reported the destruction of livelihoods and deforestation as a result of brick production for humanitarian operations in Darfur (2008).

Wood-fired brick kilns consume over 52.000 trees per year. Fired bricks need 27 trees (1 hectare of forest) to burn 1 clamp of bricks (JEU sector tipsheet Darfur 2008).

Cox's Bazar refugee camps have been set up inside a nature reserve and along an elephant migratory route which not only endangers the animals but also the refugees in the camp

[43] https://www.sheltercluster.org/community-of-practice/environment

44 This also represents a potential health risk (flooded pits which become a vector breeding ground)

[45] *JEU- environnemental sector tipsheet Sudan 2008.*

MITIGATION MEASURES

Promoting sustainable construction materials

Various solutions exist and have been tested by humanitarian actors to reduce the pressure on local forests linked to shelter programmes. These need to be analysed according to the context of intervention and available resources. Some examples include:

- The reuse and recycling of materials for shelter construction, including debris
- Replacing the use of fired bricks with Stabilized Soil Blocks (SSB) needed for shelter construction. The production of SSB does not require any wood and reduces the use of water by 30-60% (JEU -environmental sector tip Darfur 2008).
- Promoting the use of sustainable timber in humanitarian programmes which is commonly used in shelter activities[46].
- Distributing plastic sheeting only when necessary and making the choice of quality plastic sheeting which have a longer life span to limit plastic waste

> *We need to avoid situations where sustainability and durability of items is dismissed because of this emergency mindset. For £20 dollars more per shelter kit, we can have shelters which can last for 20 years, instead of 2 years (interviewee).*

Mainstreaming energy issues in shelter/settlement programming

Promoting energy-efficient cooking solutions as well as solar solutions for lighting could be systematically encouraged by DG ECHO. Where people settle down, it is to be expected that they will need firewood for cooking and for lighting. As described above in the food and livelihood section, the lack of systematic consideration of energy issues in humanitarian interventions often leads to local deforestation and soil erosion. While reducing the costs that wood represents in a household's budget, these also help reduce the environmental impacts (Sphere manual 2018).

> *The QRC (Qatari Red Cross) has supported the construction of insulated shelters for Syrian Refugees in Lebanon to help reduce the pressure on wood which drastically increased during winter months.*

> *IOM's Global Solar Lantern Initiative has helped more than 50 000 families across Africa; Latin America and Asia.*

Greening refugee operations from the start

The impact of refugee settlements on the environment and more specifically on tree cover depletion has been widely documented for decades now (since the DRC Rwanda crisis). It is a reality that refugee operations put "additional" pressure on natural forests around camps: depletion of agricultural land, fuel wood consumption, as well as refugees' livelihoods activities (e.g. charcoal production, selling wood to host communities etc.). In Northern

[46] *IFRC, UN OCHA and CARE international released a book on sustainable timber in 2008 which aims to support aid actors in their decision making when it comes to purchasing timber. A list of all eco-certification related to timber is presented. In Thailand for instance, ACTED used bamboo to build shelters given the pressure on local wood.*
https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/Timber%20Guidelines.pdf

Uganda, 60% of the tree cover was depleted in and around settlements from 2005 to 2008. In Kenya the degradation of biomass is significant (20km around the camp)[47]. Trees provide many functions: soil protection, preventing soil erosion and limit the risk of landslides, but also have social functions, such as providing shade and a place where people can meet.

As early as 2005, UNHCR published "Environmental Guidelines"[48] to support its partners in identifying and mitigating environmental impacts associated with specific refugee or returnee situations. Yet, the greening of refugee operations is not systematic. The humanitarian system is often late in responding to the environmental damages caused by camps and is unable to restore the natural environment to its pre-crisis state. It is well known that refugee camps have a life span on average of 15 years[49] - there is therefore no excuse for humanitarians not to dedicate sufficient time and resources to mitigate environmental impacts from the beginning of a refugee crisis, especially since environmental assessment tools are readily available.

In addition to providing energy-efficient cooking solutions for refugees and promoting livelihoods and shelter activities that reduce pressure on wood, tree planting activities should be an integral part of refugee operations. However, reforestation activities need to be well thought-through and lessons could be drawn from development actors:

- Implication of local authorities and host communities to identify types of plants required, for which purpose, for who etc. "It is easy to start a reforestation project, but the issue is to sustain it"[50].
- Accompanied by rainwater harvesting initiatives.
- Strong participation of beneficiaries - individual families or a group of families who will make sure that the trees are protected. There are examples of tree planting activities that failed because it was unclear who was responsible for maintaining the resource (Groupe URD, 2017)[51].

"Let's not pretend that a humanitarian crisis ends after 6 months or a year" interviewee.

From 2018, in Minawao camp in Northern Cameroon, UNHCR introduced a "cocoon tree-planting technology", a project to plant 200,000 trees in the desert of Cameroon's Far North Region.

2.3. WASH

Both DG ECHO's WASH policy and the EU Guidelines on Rights to Water and Sanitation[52], aim for water and sanitation activities financed by the European Union to be conscious of climate change and environmental issues. Awareness in the sector is therefore already high. However, the issue of environmental responsibility is

[47] *Phosiso Sola (World Agroforestry ICRAF) HNPW Feb 2020.*

[48] https://www.unhcr.org/protection/environment/3b03b2a04/unhcr-environmental-guidelines.html

[49] *UNHCR website.*

[50] *Phosiso Sola (World Agroforestry ICRAF) HNPW Feb 2020.*

[51] *Groupe URD Brangeon, S (2017) "Study on the environmental impact of forced migration" (Cameroon and Lebanon).*

[52] *"Water and sanitation must be provided in a way that respects the environment and, in this perspective, EU interventions should be conscious of the vulnerability of the water sector to climate change and of its potential in terms of human resilience" EU Guidelines on Rights to Water and Sanitation.*

particularly complex in WASH interventions. This is due to the fact that WASH interventions, such as water trucking, faecal sludge and waste management, and borehole- construction are often sub-contracted to the local private sector, which might put profit before environmental concerns. The consequences of contractors' activity should be addressed by aid actors who are ultimately accountable for the environmental damage that is done. Other types of impacts are linked with improper planning (despite the SPHERE standards) or coordination and lack of technical expertise (particularly in hydrogeology) within the humanitarian sector[53].

IMPACTS

- CO2 emissions linked with water trucking (e.g: transport of water) and pumping (e.g. using generators)-*global impact*
- Generation of plastic packaging waste linked to Hygiene Kit distributions-*local impact*
- Ground and surface water contamination linked to sanitation activities (ex: where latrines are inappropriately located-too close to a water point, or inappropriate sludge management).-*local impact*
- Ground water contamination and salinization linked with the construction of boreholes (risk of cross-aquifer contamination and contamination of the aquifer from surface water pollution from borehole construction)-*local impact*
- Water table depletion linked with unregulated pumping[54] (water trucking), defective infrastructure, inappropriate analysis of the aquifer or lack of coordination between WASH actors pumping from the same aquifer. Water outtakes sometimes exceed the replenishment of water sources-*local impact*

> *"In response to Bilalh floods in India, the required distances between the latrine pits and the wells, all settled on sandy soil and shallow aquifers, were not respected. This resulted in the pollution of the groundwater, with significantly elevated numbers of coliform bacteria in the aquifer verified by systematic water tests for many villages " DG ECHO Wash policy 2014.*

MITIGATION MEASURES

Increased monitoring of contractors

Contractors operating on behalf of humanitarian actors in the construction of boreholes, water trucking or de-sludging activities should be closely monitored in order to make sure that their practices are environmentally sound: checking that the site where the de-sludging is carried out is legal, that boreholes are built with respect to the quantity of water in the aquifer and in a way that does not create contamination etc. This should be included as an activity in the log frame (and not just specified in the contracts with contractors) and organisations should have the internal competencies (e.g. hydrogeological expertise) to be able to monitor their contractors' activities. Alternatively, when possible, humanitarian interventions could include activities such as the management of faecal sludge or the management of waste and waste water, although this might be a challenge as it is not currently compatible with humanitarian funding cycles.

[53] *Groupe URD « Analysis of the capacity of the wash sector" 2019:* https://www.urd.org/en/publication/analysis-of-the-capacity-of-the-wash-sector-june-2019/

[54] JEU's environmental marker tipsheet.

Increased monitoring of water tables

As mentioned in the JEU environmental marker tip sheet, it is essential to ensure that water outtake does not exceed the replenishment of water sources, as this can have long-term effects for the local population (once the aquifer is depleted and is no longer connected to the other aquifers, it cannot recharge itself). To address this, some organisations such as UNHCR and Oxfam have used piezometers to monitor the water table[55] and have also trained the local population to use these (e.g. Oxfam Haiti). "Groundwater monitoring is essential, and in case the demand for water exceeds available resources there may be a need to cap wells and develop alternative sources" JEU 2013 Sudan.

Monitoring of water tables should also take into account the impact of climate change on water availability in crisis affected countries. Indeed, if changes in water availability (e.g. seasonality and predictability) are not taken into account in humanitarian programming, this could negatively affect the quality of the response.

Operationalising the Humanitarian-development nexus

One significant way to mitigate environmental impact of Wash interventions, and that is linked with the above mentioned, is for humanitarian wash actors to adopt a holistic approach to WASH services, along the lines of the Integrated Water Resource Management framework, which aims at developing resilient wash systems. Through this approach, the entire water ecosystem is taken into consideration (from water supply protection, to recycling of waste water) and more specifically so, in the light of challenges brought with climate change.

This requires reinforcing wash staff expertise and supporting learning and collaboration between development and humanitarian actors.

> The SDC has made this approach central to its wash strategy "The SDC takes a holistic view of the water cycle, which is also a valid framework for the humanitarian domain: Not just focusing on water supply, but including the integrity of the ecosystem, life in water and on land, and climate change, which means to close the water cycle through recycling of wastewater, or to keep nutrient cycles and water cycles separate, to reduce consumption and losses, and protect water resources from pollution or overuse. It extends into the terrestrial ecosystem: only intact catchment areas can retain and filter water resource" https://www.shareweb.ch/site/Water/resources/Documents/SDC-HA%20Operational%20Concept%202017-2020%20-%20WASH.pdf

Increase use of solar in WASH programmes

Humanitarian WASH infrastructure increasingly uses solar energy; over 100 organisations in over 50 countries are now using solar[56]. Significant savings have been made as there has been a decrease in diesel use (and therefore CO2 emissions). The ERC-DG ECHO funded "Global Solar Initiative" (now funded by OFDA), along with increasingly affordable solar prices, has played a significant role in promoting solar energy use in WASH programmes. This project, which aimed at reinforcing the humanitarian sector's competencies in solar energy, has allowed a "change in paradigm on how the humanitarian community views, designs and funds water pumping schemes, particularly in East Africa" (IOM, 2019). On the basis of this experience, DG ECHO should start encouraging its partners to use

[55] *This needs to be done over a period of a year.*
[56] *IOM- Global Solar Initiative.*

energy efficient/alternative energy technologies in WASH interventions and support the development of technical capacities in partner organisations. The risk of over-exploitation of water sources is also a concern with solar energy and should be monitored (in some cases, water pumps can be programmed so that they stop after a certain level of pumping, which reduces the risk of over-pumping). In addition, it is important to keep in mind that solar energy projects generate waste. This is mostly produced by batteries, which have a lifespan of around 6 years on average, depending on the quality and the usage, but it also comes from solar panels. This should be kept in mind when designing a solar WASH project. Implementing partners should anticipate these risks and plan for adequate collection, disposal and, if possible, recycling of materials and components.

It should also be kept in mind that solar solutions in WASH programmes are not always the adequate solution (for instance in countries where the climate does not allow it), and that other renewable energy sources such as wind power can sometimes be explored.

Solar capital cost is on average 20 000 USD higher per water point, but the average breakeven point for solar investment is only 1.1 years (IOM).

In Bidi Bidi refugee camp in Uganda, 150 out of 158 water supply systems in the camps have been solarized (hybrid and stand-alone), leading to an estimated saving of 17.6 million USD over time (IOM). IOM is currently launching a research project to identify recycling opportunities of electronic waste in various refugee camps in the region.

Roll out of eco- sanitation solutions

Eco-sanitation solutions reduce the risk of contamination of water tables and can help restore the quality of the soil through the reuse of urine and faecal matter. Oxfam has been one of the leading agencies testing these solutions in humanitarian contexts (e.g. Cox's Bazar with the Tigerworm toilet). NRC have also tested a project aimed at recycling faecal waste for the construction of briquettes.

2.4. Health

The European Commission provides around €200 million every year to support humanitarian health programmes. Recent examples funded by DG ECHO include improving access to primary healthcare, preventing and responding to disease outbreaks (such as cholera, measles, and Ebola) in West Africa, providing mental health and psychosocial support in Afghanistan, Libya, and Syria, and supporting adapted and culturally sensitive healthcare services to refugees and migrants in Turkey (DG ECHO, 2019). The environmental impacts of health projects can often be overlooked, given the prominence of the life-saving imperative in this sector. However, given the rigour with which many health projects and programmes are conducted, there are opportunities for environmental considerations to become part of these carefully managed and monitored processes.

IMPACTS

Perhaps the most obvious and pervasive environmental impact linked to humanitarian health efforts is the clinical waste generated by hospitals, healthcare facilities and mobile clinics. Waste includes both hazardous types, e.g. certain pharmaceuticals, radioactive materials and chemicals, and offensive types such as swabs, syringes, dressings, diagnostic samples, blood, all of which may pose a risk of infection. Medical devices and equipment are also a form of medical waste. The World Health Organization estimates that 16 billion injections are administered worldwide across the globe, but many of the used syringes are not disposed of correctly (Fullerton, 2017).

The disposal and dumping of medical waste are major issues in terms of environmental degradation, leading to soil, water and air contamination, which ultimately cause harm to people and the ecosystems to which they belong. Due both to a lack of funding and knowledge, in many healthcare clinics, all medical and non-medical waste can often be mixed together and then burned in open pits or in dangerous incinerators that do not meet desired standards (e.g. are not hot enough). This results in carbon dioxide and other poisonous toxins being released into the air, causing problems at both local and global levels (Fullerton, 2017). If not incinerated, many medical waste products are buried in concrete or in the soil. If landfills are not properly constructed, this can also result in drinking- water sources becoming contaminated, as poisonous toxins leak out of the site (ibid.). Likewise, wastewater from hospitals and clinics can also pose an environmental hazard if not treated or disposed of properly, and again, many clinics do not have the necessary systems in place.

Another impact is the ecological damage caused by the widespread use of insecticides and spraying used in vector control. Despite its widespread use, a recent study (Bowman et al, 2016) raises concerns regarding the efficacy of spraying to reduce the incidence of dengue fever. Dengue has increased dramatically and is now the most widespread mosquito-borne arboviral disease, affecting nearly half the world's population. Until the arrival of a vaccine, control of its *Aedes* vectors has been the only method to prevent dengue infection (Bowman et al., 2016).

With increasingly fragile ecosystems and environmental degradation taking place at an alarming rate, it is vital that vector control should only be used where it is absolutely necessary and with good evidence of its effectiveness.

MITIGATION MEASURES

In order to manage clinical waste, making better use of pre-existing hospital safety assessment tools, based on WHO standards, is a priority. In a DG ECHO-funded project with Pan America Health Organisation (PAHO) in Guatemala, Honduras and El Salvador, staff use a tool comprising a checklist of different components (structural and non- structural) of the health facility to make a diagnosis of how hospital safety measures can be improved. Waste management is one of the non-structural components assessed, and includes both toxic and non-toxic waste. PAHO accompanies the beneficiary health facility in conducting the assessment. After beneficiary staff are trained on the proper application of the tool, they will then carry out the second assessment on their own. The assessment can then be used to advise key actors in health facilities on how to manage their waste better. Training is also provided. Since 2017, over 30 hospitals and primary health facilities have been assessed in this way. Six months after the initial assessment, the tool is applied again to carry out a second evaluation. Applying the same tool in exactly the same way a second time ensures no bias.

MSF is amongst others to have clear guidelines on how to implement high standards of waste management. Included in these are instructions on how to construct what is known as the De Monfort incinerator, a small-scale, low-cost model. Raising awareness and sharing guidelines on incinerator standards and construction as well as supporting partners with funding to allow them to implement higher standards of waste management could go a long way to reducing environmental (and human) risk in relation to clinical waste management. In terms of wastewater management, one interviewee offered the example of a health centre in Afghanistan where a wastewater system has been built whereby the water is filtered through different concrete chambers containing sand and charcoal. The whole hospital is run to a very high standard in terms of hygiene and staff practices. Again, sharing these examples and potentially producing accompanying guidelines that alert partners and TAs to these practices could have a beneficial impact.

2.5. Nutrition

Funding from the EU allocated to Nutrition programming has increased significantly in the past decade, reaching €140 million in 2018. This money supports the placement of in-house Nutrition experts in regional support offices to assist partners and specialised food products used for the treatment of severe acute malnutrition (EC, 2019)[57]. When looking at environmental impacts related to nutrition, the study stayed within the parameters of therapeutic food distribution, rather than a broader view including food and livelihoods, which is covered in section 2.1 above. Impacts are therefore primarily linked to the packaging of food products and its disposal and the transport involved in ensuring it reaches those in critical need.

IMPACTS

Packaging

Nutrition interventions produce a lot of packaging waste and currently there is no real solution given the different trade-offs. Packaging is specified and imposed by international standards (WHO), and this is very specific due to the need to conserve the nutritional value of the (life-saving) product for up to two years. The current packaging also ensures that the product requires no water, preparation, or refrigeration. There is a need for research into greener packaging, but this is currently not a priority where funding is concerned. However, the (non-emergency) food industry has made substantial progress with sustainable packaging, which could be transferred to these specialised products. Some studies are currently ongoing and could be looked at by Nutriset, a French company that has a monopoly on the Ready-to-Use Therapeutic Food (RUTF) market.

Transport and logistics

Whilst transportation of relief items is a wider issue discussed in more detail in the cross-cutting section on humanitarian logistics (3.1), it also has specific dimensions unique to therapeutic food programmes and to DG ECHO's partners in this area. Plumpy Nut is a patented product manufactured by Nutriset. It is distributed from manufacturers based in Niger, Burkina Faso, Guinea, Nigeria, Ethiopia, Sudan, Madagascar, Haiti, India and the

[57] https://ec.europa.eu/echo/what/humanitarian-aid/nutrition_en

Unites States (Nutriset, 2018)[58] and is the product most used by DG ECHO's partners to treat severe and acute malnutrition. This means that production can be fairly local, and use local products (such as peanuts). Perhaps more of a problem is the long-term conceptual division that exists between the treatment of severe, acute and moderate malnutrition, whereby the former (severe and acute) is managed by UNICEF and the latter (moderate) by WFP. This division of tasks is a challenge, requiring INGOs working in nutrition to contact two different agencies for products and, what is more, necessitating two separate supply chains and leading to an increased environmental footprint. Such a division of tasks is both artificial and inefficient, but due to the power and funding at stake in this arrangement, it is unlikely that any kind of merging of these two strands of nutrition work will take place.

MITIGATION MEASURES

Mitigation measures centre around RUTF's production, packaging, and waste. Because of its precise composition and lifesaving properties for children on the brink of severe and acute malnutrition, caution should be taken in altering the recipe or packaging in the name of greening (i.e. to reduce waste or the carbon footprint of ingredients). When so many other elements of the humanitarian supply chain require attention, to target RUTF may seem inadvisable. Interviewees felt that a less risky way of addressing greening in this area would be to look at recycling options for empty sachets e.g. reverse logistics. Within the humanitarian sector this currently has only ever taken place in small scale initiatives, where women's groups refashion packaging materials into products for sale on local markets (bags etc.) as part of an income-generating project. UNICEF also had an initiative which turned cardboard packaging used for RUTF into toys. However, this of course only manages the waste rather than reducing it. There is ongoing private sector research underway into recyclable unit dose packaging for solid pharmaceutical products (Kent, 2020), which offers a clear avenue to explore for RUTF.

The greatest result in reducing the environmental footprint of Nutrition projects using RUTFs has been in supporting local production and opening factories e.g. in West Africa. DG ECHO is the main donor supporting Nutrition in this region and has done much to support local production. Whilst the initial driver for this was cost-efficiencies, it has had big impacts on reducing the carbon footprint of transport and freight. DG ECHO staff acknowledge that currently no assessment is made of the manufacturer's standards in relation to the environment and labour conditions, pointing toward an area for possible improvement. There is also a lot of work taking place to find alternative recipes for RUTF (e.g. alternatives to peanuts), since currently in some countries, peanuts are being imported. Whilst this could have significant positive environmental impacts, again, any risk of error in the formula that could cost lives makes this a tricky area of work. A final approach links to the theme of preparedness and pre-positioning. As discussed, ensuring that stocks of RUTFs are strategically purchased and stored or agreements made with suppliers in advance of a crisis can ensure that less environmentally damaging forms of transport are used. In addition to this, WFP is currently working with its suppliers to find an alternative to the light metallic packaging currently used for RUSF (Ready to use supplementary food). However, this is very much at its initial stage.

[58] https://www.nutriset.fr/en/plumpyfield *Plumpyfield: a unique network in the field; Retrieved 4th February 2020.*

3. Cross-cutting issues

3.1. Logistics and the supply chain

Many of the environmental and carbon impacts of the humanitarian sector can be linked to the logistical operations involved in reaching those affected by disasters with essential relief items. Negative impacts include carbon emissions linked to the transport of goods and personnel, the manufacturing of disaster relief items and the waste generated through their packaging, with some of these impacts somewhat hidden, occurring long before a response and long after (e.g. suppliers' impacts, impacts from crop production). It therefore equates that in addressing and adapting the way in which these operational components are carried out, significant reductions can be made to the environmental footprint of humanitarian aid. Logistics and the supply chain (procurement, transport, storage and delivery of humanitarian supplies) therefore presents multiple and crucial entry points for greening.

One very apparent finding of this research - and perhaps the greatest opportunity in terms of reducing negative environmental impacts lies in the way in which greening activities frequently dovetail with the cost efficiency agenda driven by the Grand Bargain. Some 35% to 40% of DG ECHO-funded project costs go into procuring, transporting, storing and delivering humanitarian supplies, with costs reaching up to 80% in some projects (Landell Mills Int., 2018). Greater efficiency in logistics is therefore a priority for both DG ECHO and the humanitarian sector more generally, which has led to the development of key strategies to optimise the supply chain for better and smarter, more efficient aid delivery. These include greater disaster preparedness, pre-positioning of stock, pooling of resources, localisation and reverse logistics, all of which can also have environmental benefits and impacts (see below). Furthermore, due to the cross-cutting nature of the supply chain, applying a logistics lens to humanitarian aid is a useful and efficient way to address the environmental footprint across sectors, which is helpful in enabling a holistic view of aid in all its complexity.

Here are some entry points:

Preparedness

By anticipating the likely impacts of disasters and putting in place early warning systems, pre-positioned stock, infrastructure and expertise to respond quickly and effectively to people's needs, humanitarian organisations, national authorities and donors can make a major difference in saving lives and reducing suffering (OCHA, n.d.)[59]. Research has also shown that the return on investment generated through emergency preparedness activities is significant, with much of this due to developing logistics capacity in advance (Landell Mills Int., 2018). In terms of environmental benefits, with attention to transportation routes, storage locations and capacities, as well as expected time of utilisation of the goods, substantial emission reductions can also be unlocked (IFRC, 2018).

[59] https://www.humanitarianresponse.info/en/coordination/preparedness/what-preparedness

Case study- In South Sudan, pre-positioning of stock has been used to save perhaps more than $100 million (interview with WFP). This was achieved by carrying out basic repairs on roads in collaboration with S.Sudan peacekeeping forces, and using riverways so that supplies could be trucked and shipped to warehouses in strategic areas during the dry season. This then meant that WFP was able to avoid the use of helicopters and planes to transport relief items during the rainy season, when they are urgently needed. WFP underlined the importance of getting donors on board, so that funding is released in good time. Though providing funding before an emergency requires donors to be less risk-averse, the benefits are there to be seen.

Localisation

As mentioned above, a key strategy to reduce the carbon footprint of assistance is a shift towards more local delivery. Currently, systems of surge support involve international staff flying to and between disaster areas to bring skills and expertise to support response efforts. Moreover, a reliance on shipping supplies from overseas, such as food and non-food items, often using carbon intensive transportation (older aircraft with poor emission standards – See Flight and Fleet, below), rather than using local products where available, are some of the main culprits in increasing the environmental footprint of humanitarian organisations. Localisation therefore includes both a greater reliance on local skills and expertise, and supporting local production and markets (linking to multi-purpose cash programming - see section below). It also links to the Charter for Change commitments[60], calling for the Global North to relinquish power and thus enable national and local actors to play an increased and more prominent role in humanitarian response. One possible avenue for advancing this agenda would be to sign special conditional contracts with local suppliers/producers in non-emergency times that would be activated when an emergency takes place

WFP is active in favoring local and regional procurement and recently approved a new policy whereby 20% of its food purchases should be procured either locally or regionally (versus cheaper international procurement). This highlights a move towards reducing the carbon footprint of emergency relief, despite the increased investment that this implies. ICRC emphasised the environmental and protection gains that can be had from purchasing from local manufacturers, where checks can then be carried out on both environmental and labour standards and manufacturers can be helped to improve their standards. .

Pooled resources

The private sector has long been leading the way in outsourcing and pooling logistics services, sometimes even between competing companies (RLH, 2019). The objective of this is to reduce operational costs, but the gains are also environmental: by using pooling practices, duplication could be avoided and last mile logistics - often the most carbon (and financially) intensive - optimised by aid agencies through pooled transport and storage as well as shared human resources (ibid.) Further to this, by working together, aid agencies would also gain negotiating power with suppliers, driving down costs, and - in terms of environmental impact – demanding greener practices and even developing new markets for greener products. One example of where pooling is already taking place is in the Humanitarian Procurement Centres, which have been recognised and supported by DG ECHO. These centres present a huge opportunity for environmental objectives to be addressed, through adopting a system or even a policy to monitor the origins and environmental impact of the products stored in the centres.

[60] *The Charter for Change (C4C) is an initiative, launched at the World Humanitarian Summit in May 2016, signed by 35 international non-governmental organisations (INGOs) which commits them to change the way they work with and relate to national actors. C4C has been endorsed by over 252 national non-governmental organisations (NNGOs) from 45 countries across the world.*

Procurement/life-cycle approach

A significant component in emergency aid is providing disaster-affected people with essential household items such as mattresses, blankets, plastic sheets, containers for water, cooking utensils and hygiene kits. Whilst the need for these supplies is uncontested, many of these are made from or contain plastic and other non-biodegradable materials, which, in the long-term, have clear environmental impacts (e.g toxicity leading to air, water and land pollution and damage to plant and animal life), particularly when the communities receiving these items do not have the capacity to deal with waste. These impacts may seem unavoidable, given the emergency context and life-saving objectives, but they can also be greatly worsened by the provision of poor-quality items. ICRC found that a lack of quality controls existed between their buyers and manufacturers and traders, meaning that a sample would be approved but the quality of the item would then decrease (see case study below). Since those receiving the items (disaster-affected people) did not know what standard the quality of the item they were supposed to receive should be, they could not hold the organisation to account in the same way that customers are able to in the private sector. This would then lead to items breaking and being discarded and polluting the environment (e.g. bad quality tarpaulins ending up in the sea). Ensuring items are of an appropriate quality (e.g. in the case of plastics, ensuring they are 'clever' or durable) is therefore an important step in reducing the environmental footprint of relief programmes, both at the local and global levels.

Having insight into the environmental impact of relief items over their entire lifecycle is another important method to inform decision making about what products to select and use. This is especially true with regard to the materials and the source of energy used in the production of goods, which can have a drastic impact on their carbon footprint. For example, in some cases, the footprint of an item produced through the use of renewable energy is only a third of that of a similar item manufactured using fossil fuels. In addition, the promotion of renewable and recyclable materials can have a major impact on the lifetime emissions of a single item (IFRC, 2018).

DG ENV has been working to integrate life-cycle assessments (LCAs) into EC processes. The Product Environmental Footprint (PEF) and Organisation Environmental Footprint (OEF) projects are developing methods to quantify the environmental impacts of products (goods or services) and organisations (including companies, public administrative entities and other bodies). Their overarching purpose is to reduce the environmental impacts of goods and services taking into account supply chain activities (from the extraction of raw materials, via production and use, to final waste management)[61].

Whilst this type of scrutiny might seem impractical in emergency operations, the scale at which products are sourced and used, the frequency with which the same ones are used from one emergency to the next, and particularly throughout a chronic emergency, make a persuasive case for applying this sort of assessment to some products ex-ante or choosing products which have already been assessed. Agencies working together by pooling resources, as mentioned above, could exert the necessary pressure on manufacturers to conduct LCAs of their products and change their manufacturing practices or build up a market for products with low environmental footprints. LCA could also be used to analyze green innovations applied to the humanitarian sector. As a result, if

[61] *This purpose is achieved through the provision of detailed requirements for modelling the environmental impacts of the flows of material/energy and the emissions and waste streams associated with a product throughout its life cycle (Zampori & Pant, 2019).*

green innovations have a very good LCA , this would allow decision makers to assess whether additional investment linked to these innovations can be justified.

In terms of organisational environmental assessments, many of the organisations interviewed are already trying to establish this for themselves, by calculating their carbon footprint (see Calculating a Carbon Footprint, below). As far as DG ECHO (HQ office) is concerned, the EU Eco-Management and Audit Scheme (EMAS) have been mandated to incorporate the OEF into each DG. This scheme implies offices to respect and monitor compliance to standards related to energy consumption of buildings, CO2 emissions (building and fleet), waste management and water use etc. (this will be developed further in section 4..2)

Packaging and waste management

Closely linked to the quality, procurement, and life-cycle of relief items is the issue of packaging and waste. Whilst waste can be linked to poor quality items discarded due to damage and disintegration, it is also much to do with the packaging in which they are transported. With each disaster, the humanitarian system leaves behind tons of plastic and packaging waste in countries that often do not have the local waste management systems to deal with it. For example, in post-earthquake Haiti, large volumes of plastic containers were brought in as part of relief goods without proper opportunities for recycling or disposal (USAID et al, 2019). Moreover, the fact that recipient countries are increasingly banning plastic pushes humanitarians to rethink the packaging they send along with lifesaving items.

> *In 2018, the total amount of items distributed by WFP represented 80 000 tons of packaging (WFP Packaging manager). The reality is that most packaging becomes waste.*

In 2018, USAID was approached by the Logistics Cluster, WFP and IOM who requested funding to research plastic and packaging waste management. The objective of the study is to evaluate existing humanitarian aid delivery systems and processes, identify pragmatic, cost-effective approaches to reducing packaging waste without compromising humanitarian aid delivery, and seek opportunities for harmonisation amongst agencies in how they address this issue. Ideas being explored include reducing and recycling, the circular economy, and "take back" or "return to sender"[62] policies (reverse logistics) (Logistics Cluster, n.d) on packaging and surplus, where a responsibility exists for the supplier and the buyer to recover and recycle or effectively dispose of packaging waste (Logistics Cluster, n.d).

Tackling this issue was seen as a quick win by some interviewees. But at the time of writing, according to interviewees, only a few of the solutions identified have been translated into action, although IFRC has worked with their main suppliers to develop kitchen sets without plastic packaging, with an estimated reduction of around 250,000-300,000 plastic bags annually. Two-thirds of suppliers have already replaced plastic with paper packaging. Work to remove plastic packaging from IFRC household items will continue. Similarly, ICRC and WFP will be replacing boxes made out of white cardboard (usually non-recycled and white bleached) with brown (recycled and recyclable). In line with these initiatives, the Global Shelter Cluster has called on organisations involved in providing shelter in humanitarian settings to take all necessary steps to eliminate the use of all but essential plastic packaging in relief items by the end of 2020 (GSC, 2019). There is also a need to rethink some of the packaging that is used, as some

[62] *This approach presents some challenges however in terms of responsibility and cost (Charles Kelly).*

mixed plastic packaging is extremely difficult to recycle given the multiplicity of types of plastic that it contains (e.g. the packaging for Plumpy Nut a mix PET, PP, PS etc. plastics). WFP has also released a document on the pitfalls of bioplastics illustrating the situations where it cannot be used. It is important to remember that the number of times plastics can be recycled is limited (3 to 4 times maximum).

In the Education sector, most of the school kits distributed worldwide, are distributed in plastic bags or plastic rucksacks (of bad quality), and these can quickly become waste. A way to limit this impact, as suggested by one of DG ECHO's TA, is to support the local production of material bags, or to support activities whereby material bags are packed locally -this could be done in the framework of the Cluster Pre-positioning.

The circular economy

All of the ideas above regarding waste management, recycling and thinking through the life-cycle of products used in humanitarian assistance fit into the concept of a circular economy. This concept helps orientate approaches towards sustainably meeting people's needs whilst simultaneously aiming to relieve pressure on natural resources and ecosystems. Much of these pressures have been driven by linear economic models which follow a "make-use-dispose" pattern where raw materials are extracted from the natural environment and used to manufacture a product that are then sold to a consumer, who then finally discards it when it is no longer used (Aguasan, 2017). Circular economic models are cost-recovering as well as resource and energy efficient. Resources in waste streams are reused as valuable inputs for creating the desired products rather than extracting new raw materials.

One example where such thinking can be applied is waste management in refugee and IDP camps. One interviewee spoke about how much more could be done in this area without high-tech and at low cost, such as bio-gas solutions[63], composting and re-purposing waste metals in camps, which could also have economic benefits, when linked to income generation and livelihoods projects.

In Kakuma refugee camp, NRC has led a livelihoods recycling project of plastic jerricans where these are shredded and sold to local recycling companies.

In Kenya and Ethiopia's refugee camps, UNHCR is working currently with engineers to recycle plastic waste into building materials (slabs, bricks) or items such as chairs, bowls, basins and buckets (https://www.ngi.no/eng/News/NGI-News/Plastic-waste-in-refugee-camps-may-turn-into-building-materials)

Carbon footprint of organisations

Many of DG ECHO's partners have been working to both calculate and reduce their carbon footprint. One way to reduce carbon footprint is by offsetting it - carbon offsetting is the process of buying carbon credits equivalent to the carbon emitted of an organization. This requires organizations to first calculate their yearly emissions, to reduce their Co2 (and other gases) as much as possible (through reducing flights for instance) and then compensation their "residual" emissions by financially contributing to projects which have a positive carbon impact (ex: reforestation, promotion of renewable energy etc.)

63 There are experiences in the world where low cost/low tech solutions for bio-gas have proven to be successful, although more research would be required to determine the costs related to this.

WFP have been calculating their carbon footprint since 2008 and publishing a yearly report detailing their results and efforts to reduce emissions. UNHCR has been reporting on their footprint since 2016 but have not been able to consistently include all offices. In 2019, for the first time, they succeeded in collecting the carbon footprint of each office and offsetting this, enabling them to become 'carbon neutral'. The offsetting process is undertaken through UN procurement processes which include an open call for proposals.

Whilst offsetting is practiced within the UN (and by other aid agencies), there is an awareness of both its limitations and dangers, which were also voiced by DG ECHO staff[64]. UN Environment has stated that whilst it supports carbon offsets as a temporary measure leading up to 2030, and a tool for speeding up climate action, it recognises that it is not a silver bullet, and that offsetting can lead to complacency or, at worst, it can allow the largest polluters to exceed permitted emissions by essentially balancing out their emissions equation (UNEP, 2019). Other offsetting risks are linked to issues of land scarcity and food. Land is already scarce in many parts of the world, and it is the most marginalised who lose their land – which they depend on for subsistence farming - when it comes to using it for profitable carbon offsetting projects, or bio-fuel growth (Millican, 2019). Moreover, as clearly stated in the 2018 IPCC report, hope of curbing global warming requires a transition away from carbon for good, for example by embracing renewable energy, eating less meat and wasting less food (ibid). Care needs to be taken that the transition to carbon neutral is not done so in a crude way that does not take into account other environmental considerations (e.g. protecting the natural environment) and at the expense of vulnerable and marginalised people.

When interviewed, UNHCR said that eventually their dream was to carry out 'in-setting', a system whereby they would be able to offset emissions through other programmes (e.g. tree planting in camps). The challenge with this is that it would require a costly process of certification, which they are unlikely to be able to afford, and therefore a simplified process needs to be developed.

IO and INGO partners are also doing a lot in the area of carbon emissions reduction. Mercy Corps has developed a comprehensive plan to drastically reduce its carbon footprint, involving a cultural shift taking place in the way their staff think about how they work and their day to day impact on the environment. This will start in African countries where their use of solar energy is more advanced. ICRC is putting in place a tool for each mission to track their carbon emissions on a yearly basis. In 2017, ICRC carried out an environmental mapping of their programmes to understand their impact. They found that 50% of carbon emissions are linked to their supply chain and 15% to travel. Acknowledging how difficult it will be to reduce these, they are questioning whether or not carbon emissions are the most useful variable upon which to focus their efforts.

Flight and fleet

As major contributors to carbon emissions for the humanitarian sector, aviation and fleet are under scrutiny in many operational and donor organisations. UNHAS stressed the need for flights to be a last mile resort and, when used, measures should be taken to ensure aircraft are always full. DG ECHO has not yet taken any measures to counter-balance carbon emissions and likewise, the 4-yearly tender process used by ECHO Flight does not specify anything on environmental impact. This is partly due to the fact that DG ECHO has specific requirements only met

[64] *INSPIRE workshop, 14th January 2020.*

by "old generation" 'combi' aircraft, which cater for specific requirements including transporting cargo and people simultaneously and using shorter runways. Since these types of aircraft are not used commercially, there is less market benefit for manufacturers to improve the environmental performance of these. Whilst, as discussed above, off-setting as a strategy can be problematic, rather than do nothing at all, it could make sense to require the operator to find ways of off-setting emissions (e.g. through setting aside funds for green projects or planting trees). However, there might be more creative solutions: DFID is carrying out an interesting project where they are attempting to minimise aircraft impacts through changing an airport's capacity to handle newer, greener aircraft. Many airports are not equipped to use newer models, since these are generally positioned higher off the ground than the low-lying, combi IL76, frequently the go-to cargo plane for humanitarian supplies. DFID have therefore been bringing in the equipment necessary to handle greener craft.

In terms of fleets, there are strong arguments and evidence to replace older fleets with newer greener ones, as laid out in the Strength in Numbers report (RLH, 2019). Atlas Logistique also talked about combining elements of preparedness with greener transportation, using the example of Haiti where a database of transporters was trained to maintain vehicles so that they are less polluting, enabling them to respond quickly to a crisis with less environmental impact. ICRC are undertaking a project to develop and research the option of having an electrical fleet, and trying to find a model suitable for city use. IFRC are piloting Green Fleet (an updated reporting software) to improve its fleet management system in regards to fuel consumption through carbon emission calculations and key performance indicators relating to environmental management. In 2020, IFRC will integrate Green Fleet into its existing fleet management system globally (Green Response 2019 Report). A Green Logistics chapter has also been developed in the Logistics Cluster's Operational Guide (Logistics Cluster, n.d.), which includes key steps for minimising environmental impacts for vehicles. These include: 1) selecting fuel efficient vehicles and ensuring right-sizing of fleets; 2) driver training to reduce accidents and improve fuel consumption; 3) monitoring fuel consumption; 4) monitoring vehicle utilisation; 5) conducting preventative maintenance, as poorly serviced vehicles use more fuel, and; 6) disposing of used type casings, batteries, motor oil and other vehicle wastes responsibly.

Environmental Management Systems

As greening logistics processes and the supply chain is such a comprehensive and cross-cutting means of addressing the environmental footprint of humanitarian operations, it is useful to put in place a mechanism that supports this approach. One method put forward by the Logistics Cluster in their Green Logistics guidelines (Logistics Cluster, n.d.), is through the development of an environmental management system (EMS). This offers a systematic approach to help organisations to understand all their impacts and address them in some sort of priority order. The best-known approach to EMS is laid out by the International Organisation of Standards (ISO) 14000 series of standards, with ISO 14001 providing the requirements for an EMS, and ISO 14004 giving general EMS guidelines (ibid.). The other standards and guidelines in the family address specific environmental aspects, including: labelling, performance evaluation, life cycle analysis, communication and auditing.

The ISO 14000 has been adopted by more than 300,000 organisations worldwide. The process starts with a senior management commitment and the creation of an environmental policy (Logistics Cluster, n.d). Whilst the ISO approach may feel unattainable or difficult to adapt to either DG ECHO's internal or partner processes, adopting or developing an EMS model could be a useful step towards a more strategic role for logistics in the humanitarian

sector. Another environmental certification scheme is EMAS (see section 4.2). EMAS is already implemented by the European Commission and DG ECHO and could be extended to DG ECHO's partners.

Support the development of a logistics standard

A study is also underway, conducted by the Inspire Consortium to facilitate a global consultation process to investigate the usefulness of common principles and guidance to support good practices in logistics and develop these if a clear case for their use is identified. Linkages have been established between the two research projects to ensure that a logistics standard would also draw out the ways in which best practice in logistics and the supply chain can also lead to a reduced environmental footprint, in line with the various topics covered above.

3.2. Multi-purpose cash transfers

DG ECHO is one of the leading advocates of multi-purpose cash transfers in humanitarian programmes (Landell Mills Int., 2018), and increasingly humanitarian organisations are choosing to implement cash-based modalities during emergency responses either alongside or instead of traditional in-kind assistance (Guerro-Garcia et al., 2016). There is evidence that cash transfer programmes can be very effective in providing affected people with the means and flexibility to decide and prioritise their recovery (ibid.), all the while supporting themes of greater localisation by injecting cash into local markets and production. However, there has been little research to date into the impacts cash transfer programmes may have on the environment, although there is a common assumption that cash is the greener option in a response (e.g. "while WFP selects the most appropriate transfer modality based on context and effectiveness, the increasing use of cash-based transfers is reducing its environmental footprint while also improving efficiency", WFP, 2017).

This assumption is linked to the rationale that providing cash results in a reduction of the carbon and environmental footprint created by transporting relief items, plus the expectation that items bought on local markets will also be locally produced and therefore more sustainable. While this might be the case in some instances, this equation may not always be that simple. As the environmental implications of cash transfers (both positive and negative) are not directly linked to humanitarian organisations, but are indirect (via the beneficiaries), and as it is an increasingly used operational modality, this issue requires high scrutiny.

In this section, we will explore some of the opportunities and challenges that cash programming entails focusing on unconditional cash, conditional cash and cash for work programmes. One should mention that little evidence has been gathered so far on this subject. Groupe URD is currently carrying out a specific piece of research on this subject which will be released towards the end of 2020. UNHCR is also working on a study that will compare the environmental and GHG footprint of cash-based interventions with in-kind assistance in 3 target countries.

Unconditional cash

As mentioned above, cash programming can offer clear reductions in CO2 emissions for humanitarian actors when compared to transporting goods internationally and regionally. Instead of purchasing and transporting goods,

which, in the case of food, can also come from unsustainable sources, cash is transferred to beneficiaries for them to purchase what they desire.

Regarding the carbon footprint of transportation, it should nevertheless be noted that if cash transfers are made physically (and to some extent when it is via e-cards), there are still physical distributions, which means that the carbon footprint is not neutral.

Opportunities

With regards to the food sector, it can be argued that local markets in disaster-affected countries mostly offer locally produced commodities (with the exception of countries such as Somalia where everything is imported). When compared with in-kind food programmes, where food is often purchased/donated from countries where production is unsustainable (see section 2.1 on food), unconditional cash programming can offer real opportunities for humanitarians to reduce their CO2 emissions as well as to contribute to local, more sustainable food production.

From an organisational perspective, it has also been argued that cash programmes are more efficient and can therefore present good opportunities for a humanitarian actor to invest in green solutions elsewhere whether in their offices or in other programmes (LSE 2018). Indeed, as this study has shown, by being more efficient, cash programming allows for financial resources to be redirected and invested in greener practices.

Challenges

Perhaps due to the increased scrutiny encouraged by the Build Back Better concept, there has been a focus on the environmental impact of cash grants in relation to reconstruction (e.g. purchase of materials). This has highlighted how multi-purpose cash grants for shelter construction give people control over how they spend funds and build their shelter regardless of environmental implications, such as the sustainable sourcing of materials (Harvey, 2007; Gentilini, 2016).

The Shelter Cluster has been central in flagging up this risk, emphasising that when the amount of cash transferred is insufficient to cover all elements of shelter reconstruction, people may opt to purchase cheaper materials that are often lower quality and less environmentally sustainable, or they may resort to sourcing their own materials directly from their local environment (Ashmore et al., 2008). There is an increasing amount of guidance available linking cash and the environment on the Shelter Cluster's environment community of practice website[65].

Generally speaking, and this is the case for all sectors, cash can work well in some countries where quality items can be found on the markets, but in others, it can encourage people to buy poor quality produce, such as grains that have been rejected by other countries, or poor quality materials that do not last. In these countries, ICRC prefers to import directly from manufacturers to ensure a better quality and price. In terms of the environmental footprint, this also allows direct transport in full shipments rather than a commodity being passed through the hands of many traders from country to country, increasing the carbon footprint.

[65] https://www.sheltercluster.org/community-practice/environment-community-practice/documents

As such, all cash programmes cannot be labelled as environmentally neutral, as beneficiaries may prioritise the purchase of cheaper and unsustainable items in certain contexts.

Market assessments

Market assessments, and more specifically the calculation of the minimum expenditure basket, could be good entry points for considering environmental issues in cash programmes. Market assessments – which are the norm for most humanitarian actors implementing cash programmes, and are included in DG ECHO's thematic policy for cash and vouchers - can help to determine the impact cash programmes will have on local markets. At this stage, these tend to focus on elements such as market capacity, risk of inflation and access. Including an environmental component would be very useful. An example of this would be for instance to analyze whether available products are imported or locally produced, if products have been produced in a sustainable way, if energy efficient cooking stoves are available etc.

With regard to calculating the minimum expenditure basket, integrating an environment component (and more specifically an energy one), can help to reduce negative practices in relation to the environment. As an example, in 2018, the Uganda Cash Working Group developed a guidance tool to help practitioners determine the minimum expenditure basket. As part of this work, there was recognition that energy costs needed to be integrated into the calculations. By doing so, the Cash Working Group acknowledged beneficiaries' energy needs, which they were going to fulfil either by purchasing energy (with cash donations), or by resorting to practices which could be harmful to the environment (e.g. cutting down trees)[66]. This could also be applied to the shelter sector: minimum expenditure basket calculations could also include understanding the price of better quality shelter materials depending on the contexts.

Conditional cash programming

In addition to the above-mentioned concerns, conditional cash programming also presents some specific issues in relation to the environment. With regards to the food sector, and similarly to what has been described above, where food vouchers alone are distributed without considering peoples' need for energy, there is a strong risk that people are likely to resort to negative practices such as cutting down trees.

> *UNEP in Colombia have developed a guidance note for the humanitarian community working with Venezuelan refugees, aimed at supporting better consideration of environmental issues. As part of this work, UNEP encourages actors to "Consider providing dedicated fuel vouchers where populations are relatively static or camping stoves and fuel vouchers where people are on the move".*

That is to say, conditional programming can provide opportunities to reduce the above-mentioned impacts relating to poor quality items. When negotiating with local shops, humanitarian actors can adopt quality standards and procedures during the tendering process. This can be the case for instance in "cash for shelter" programmes where sustainability components can be included in the design of the BoQ (bill of quantities).

[66] *Minimum Expenditure Basket Harmonization Guidance Cash Based Interventions National Technical Working Group Refugee Response, 2018, UNHCR, WFP with technical support from CashCap and Norcap*

Cash for work

Cash-for-work projects can provide great opportunities for humanitarian actors to address underlying environmental problems, as well as restoring environments, which has proven to be the case in numerous countries (LSE 2018). Activities in which disaster-affected populations are involved include street waste collection (Haiti), reforesting unstable slopes and rehabilitating land for agriculture (Colombia), and recycling cardboard in refugee camps (Jordan).

A study carried out by LSE into cash and the environment underlined the need to systematically consider environmental implications in cash programming given the clear linkages between existing modality selection criteria and the environment, namely local contexts, local markets, and beneficiary protection. These linkages present a path and an opportunity to embed environmental evaluation in current humanitarian practice (ibid.). Bringing this additional dimension to modality diagnosis as well as to market assessments, helps reveal more nuanced, sector-specific scenarios where modality hybrids might be more appropriate (e.g. where some programme inputs are suitable for cash, and others are not), (Bessant, 2015; Blanco Ocha et al., 2018).

Integrating environmental impacts into cash policy presents a great opportunity for DG ECHO to lead the way in linking cash more explicitly with environmental concerns.

The Global Shelter Cluster is keen to coordinate efforts to standardise environmental considerations in the modality selection process (Blanco Ocha et al., 2018). They stressed the need for environmental considerations to not only be taken into account in the programme design phase, but to be integrated into monitoring systems to allow for changes in modality over the course of a programme, as contexts and the sourcing of inputs also change. CaLP also recommended that more environmental experts join the Cash Working Group, in particular, at the national level, e.g. representatives from the Ministry of Environment. Environmental concerns were not yet being considered as a high priority by CaLP who is focusing instead on other pressing themes such as protection and conflict. This current lack of prioritisation may in some regards be seen as a blind spot, since neglecting to consider the environment can lead to protection issues and even infringe on the 'do no harm' principle, or, in the case of reconstruction, the idea of 'build back better' (Blanco Ocha et al., 2018).

The links between cash programming and environmental and carbon impacts are complex and should be further explored, given the increasing importance of cash programmes. One thing to keep in mind, however, is that some cash-based programmes may just be shifting the environmental footprint from humanitarian organisations onto the market or the disaster-affected population.

Cash and preparedness:

Adaptative social protection or shock responsive social safety nets is a recent work stream in the humanitarian sector in which DG ECHO has been particularly involved in. This approach relies on adaptative cash provision to those in need, through national social safety net systems, and that across sectors (food and livelihoods, basic needs, health care etc.). It is used as preparedness tool to help crisis affected people in contexts of fragility and forced

displacement. It holds many advantages, including that of reinforcing national assistance mechanisms and illustrates a good way to put the humanitarian-development nexus into practice as development funds can be redirected to quickly respond to emergency situations.

A number of interviewees also spoke about the opportunity to link cash programming more strongly to preparedness. The British Red Cross mentioned how they are shifting away from emergency stocks and pre-positioning towards cash-based programming to enhance emergency preparedness, with clear reductions possible in their environmental footprint, due to the smaller footprint of e-cash payments when compared to the transportation of stock between regional, national and local warehouses[67].

4. Approaching a greener DG ECHO

4.1. DG ECHO Processes and Tools

Taking a systematic approach to reducing the environmental footprint of humanitarian aid by looking for ways to integrate environmental considerations throughout the DG's existing policies and processes offers an efficient and comprehensive way to address its environmental shortcomings.

A number of interviewees suggested that the Humanitarian Implementation Plans (HIP) and their respective Technical Annexes (HIPTA) would be a good entry point for encouraging greater consideration for the environment in project plans. The HIP and HIPTA are key documents for partners, one that all implementers are sure to read. These operational documents are a communication tool that define the expected humanitarian response in countries and regions. The 2020 HIP has already been issued, and for the first time it includes a sentence concerning the need to climate-proof humanitarian assistance ("DG ECHO will give particular attention to climate-proofing humanitarian assistance", DG ECHO, 2020, p11). Though climate proofing is not the same as environmental stewardship, this inclusion still represents a step in the right direction towards greater awareness of and regard for environmental issues. The HIP for 2021 could aim to be much more ambitious and explicit. This idea is supported by staff at DG ECHO, who saw the technical annex of the HIP as an entry point for greening.[68]

> *OCHA developed an environmental marker in 2013 and it has been used in country-based pool funds in certain contexts e.g. Myanmar and Sudan. The marker is used in work plans and funding proposals to identify the potential positive and negative impacts of humanitarian projects on the environment and to act on these considerations. The tool can also be used by donors to screen projects for potential environmental impacts. Through simple coding A, B and C, with a plus sign (+) for adequate enhancement or mitigation measures, the Environment Marker helps to track a project's environmental impacts, and whether recommended actions have been undertaken. Application of the marker in Sudan was seen to be critical for strengthening environmental monitoring and encouraging the integration of environmental issues within humanitarian work (UNEP, 2013). In its first year of use, more than 380 projects were assessed using the marker with 59% of projects maintaining a strong positive environmental component (ibid.).*

[67] *It should be noted that e-cash is not possible everywhere, and some countries are not yet equipped for e-cash programmes.*

[68] *This was feedback during the Brussels-based workshop with the researchers in January 2020.*

4.2. Office Greening

When interviewing many of the organisations contacted through this study, there was a sense that a key first step to reducing their overall environmental footprint required getting their own agency's house in order. This is logical since office-level greening can offer some quick wins and is arguably easier to manage than emergency-based programme work. The process of greening also offers an opportunity to bring about the necessary and essential shift in mind-set that needs to take place for each individual in order for there to be both awareness and then action related to environmental safe-guarding. Focusing on the donor's direct environmental footprint first also then avoids any hypocrisy when requiring environmental compliance from partners in humanitarian programmes.

Until now, any greening that has taken place at DG ECHO offices globally has been dependent on the individual attitudes and practices of staff, many of whom have taken the initiative to put in place measures to recycle materials and equipment and put in place actions to reduce energy consumption in offices (e.g. regulating the use of air conditioning, recycling). Interviewees commented that while some of these efforts can offer quick wins and lead to reduced energy costs, others can be hard to carry out due to limited time, resources and available services (e.g. recycling companies).

DG ECHO are very much at in the early stages of discussions about office greening and are exploring what kind of awareness-raising activities there could be. One idea is to have a baseline for all offices whereby each office could carry out a self-assessment using quantifiable indicators, followed by a context-based action plan. As DG ECHO embarks on this timely and crucial plan for field office level greening, they can draw on lessons, tools and examples from some of their partners who have already made great progress in this area. Here are some examples:

Since 2007, UN agencies have been implementing the Greening the Blue Initiative[69], in an effort to measure, reduce and offset the GHG of operations and offices, to reduce waste and mitigate other environmental impacts where possible. Under the UN Sustainability Framework led by EMG[70], it recently developed a checklist to support agencies to reduce their impact in their office. WFP first laid out its environmental commitments in 1998 (Glada and Owen, 2018), and is one of the first UN agencies to have released an environmental policy. The revised version published in 2017 outlines commitments and concrete ways to reduce its environmental footprint in offices and projects. The organisation has a corporate indicator on environmental risk and management approved for office-based elements. Country offices know that they have to report on indicators so this helps support and drive these actions. There is also now a willingness within the organisation to look at the life-time running costs of equipment such as air conditioning units, so that it is not just the price that is considered, but also environmental aspects. As part of a UN-wide challenge, UNHCR's offices worldwide have been reporting on GHG emissions since 2016. The organisation has been carbon neutral since 2018 (although this may, in great part, be linked to their offsetting program).

ICRC have a policy (validated in July 2019) which is applied at HQ, regional and country offices. However, Movement members can adopt this or may also have their own contextualised policy fitted to their country requirements (similar to the way a procurement policy is adopted). The policy covers energy, waste management, water, paper,

[69] www.greeningtheblue.org
[70] *Environment Management Group*

travel. There are nominated champions for policy roll-out at HQ level, one at regional level, and soon at field level. These are not full-time positions but objectives and activities are sometimes included in job descriptions (it is estimated that approximately half a day a month is spent on the roll out of this policy).

As for INGOs, many organisations have embarked on developing an environmental strategy. CARE International has set up a monitoring of annual GHG per office and has a carbon budget per office which allows them to keep track and prioritize actions. ACTED has carried out an organisation-wide footprint analysis. Each country office has identified key areas of progress to reduce its footprint. In Jordan, for instance, ACTED has purchased hybrid vehicles for moving around the capital.

Greening offices is not only the first key step of an environmental strategy, it also represents a way to make significant savings, especially since presence in a country is also prolonged as crises are. In its "The cost of Fuelling Humanitarian Aid" report, Chatham House provides interesting insight into the potential financial savings linked to energy provision in organisations' offices and travel practices which could constitute quick wins for DG ECHO. As an example, total spending on diesel and petrol for the seven agencies surveyed in Kenya was nearly $4 million per year equivalent to over $5,000 per staff member. "High costs per se do not constitute a problem. The question is whether energy is being used wastefully, and whether the same or higher demand for energy services can be met with lower costs and lower environmental impact"..."Costs such as those outlined above not only represent an unnecessarily large expenditure item in the budgets of humanitarian organisations; they also imply an opportunity for using renewable technologies to save money, reduce carbon dioxide emissions and create new energy infrastructure in very poorly electrified countries" . To conclude, the estimated savings in generator and vehicle fuel use, at 2017 prices, are just over $517 million per year (Glada, Owen, 2018).

4.3. Staff and Resources

Thinking through the necessary investment in both staff and other resources is a key concern of DG ECHO and its partners. However, there were strong advocates amongst interviewees outside of DG ECHO for the creation of a focal point, whose only job is to focus on the environment and help create the systems to support mainstreaming, ("If its everyone's job then it is nobody's job".) Experience seemed to show that, without staff at a senior level, mainstreaming would not succeed. In addition to having an in-house expert based in Brussels, having focal points in the field could help to promote the environmental agenda more efficiently. Experience from ICRC shows that having strategic points of contact within each unit has proven to be very successful.

In terms of DG ECHO's partners' resources and expertise, the need for capacity building to address any additional environmental requirements is a concern, particularly at field level. The use of pooled expertise - as is sometimes used for security (e.g. safety and security advisers) - could be a solution. This mechanism already exists within the Swedish Civil Defence, which has surge capacity and environmental advisers to carry out assessments on how to build camps. They are able to provide advisers for up to a year with funding from SIDA or through IFRC. Therefore, the mechanism for providing common support is already there: "we have all the pieces, [we] just need people to do it" (ibid.).

This review has also shown that a lot can be done without additional investment. As described above, considering environmental issues in humanitarian programming is as much about shifting the mind-set to anticipate the environmental impacts of an action (ex: water depletion, CO2 emissions, pressure on wood and on existing agricultural land etc.). One issue that came out strongly is that efforts could be made in terms of better management and planning in order to reduce the amount of resources that are wasted. Some quick wins would be: to reduce energy consumption in offices (e.g. air conditioning, switching off lights, banning single use plastic, unplugging computers at night, etc.), reduce international travel, use less packaging, and improve planning. This not only limits an organisations' footprint, but can also help save money.

Dadaab refugee camp 2019: 10 000 latrine slabs built and left un-used because of poor planning representing a waste of 60 000 USD.

Uganda- reception center where hundreds of plastic sheets, timber poles, etc. are left unused because of poor planning.

Nevertheless, this review has also shown that a shift towards a reduced environmental footprint of humanitarian aid is unlikely to happen without some investment, whether it is in terms of HR, capacity building, time or financial resources. A question that was asked repeatedly by DG ECHO partners was whether or not the DG is prepared to support greener, more environmentally-aware humanitarian action.

CONCLUSION

The current environmental and climate crisis challenges us all and encourages us to reconsider our ecological footprint, whether it is in the private or in the professional domain. It is now time for the humanitarian sector, to be accountable for the environmental externalities of its actions.

In this critical time humanitarian donors have a real opportunity to make a change and influence the whole sector in reducing its environmental footprint while protecting the livelihoods of people in need. There is no time to spare and the approach that will have most impact will be a top down one, informed by pre-existing evidence of what works from the ground.

Nonetheless, this environmental journey is a complex one, given the extent of humanitarian impacts and the diversity of green options. Priorities will need to be set, according to what is the most impactful and according to each actors' room for manoeuvre and capacity. A lot of guidance is out there, and needs to be better disseminated.

While a lot of quick wins exist, which do not require huge investments, significant changes in our ways of working need to happen and this will require both investment and political will.

Environment is at the crossroads of humanitarian and development work, which now is symbolized by the nexus. It is time to operationalise the concept and walk the talk.

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ANNEX 1: DONOR MAPPING

	Environmental policy for humanitarian aid	Available technical tools for environmental mainstreaming
USAID (US)	As a governmental body US AID abides to the *National Environmental Policy Act of 1970 (NEPA)* . Article 22 CFR 216 *Agency Environmental Procedures* states the environmental procedures applicable to projets and programmes. Chapitre 204 *Environmental Procedures* de l'*Automated Directives System* (ADS) defines USAID's environmetnal policy and the associated directives. . It is nevertheless specified that in an emergency context, some of the activities funded by the *International Disaster Assistance* (IDA) or not financed by IDA may be exempted from these procedures as to not delay operations. Any programme, project or activtiy, either development or humanitarian will be subjected to a strict monitoring with regards to the use of pesticides and will have to comply with specific procedures. While USAID clearly demonstrates its commitment to integrating environmental protection into all its activities, projects and programmes, regardless of the scale of intervention, and partners are encouraged to conduct environmental assessments throughout the project cycle, it nevertheless appears that the majority of humanitarian projects funded by USAID are exempt from any procedures.	USAID has developped the *Environmental Impact Assessment process* (EIA) . Unless exempted, the EIA is required for all USAID-funded projects. (link: https://www.usaid.gov/environmental-procedures/environmental-compliance-esdm-program-cycle/principles-eia) Projects funded by the USAID are submitted to the Initial Environmental Examination (IEE) . While humanitarian projects are exempted from IEE due to their urgent nature, USAID has developed other tools, such as field guides or checklists, adapted to the humanitarian context in order to raise awareness of environmental issues among operational actors. USAID has also developed a database and a website on climate change risk management. (link: https://www.climatelinks.org/) In partnership with the United Nations, other donors and NGOs, USAID helped develop the Nexus Environmental Assessment Tool (NEAT +), which enables humanitarian actors to quickly identify the environmental impacts of emergency responses. (link : https://ehaconnect.org/resource/neat/)
GAC (Canada)	GAC-funded initiatives must comply with the Canadian Environmental Assessment Act. The Act was revised in 2012 and repealed in 2019. In 2014, GAC adopted a new Environmental Integration Process (EIP) that applies to development and emergency assistance initiatives. The EIP streamlines the old process by consolidating all of the Department's environmental policies and legal requirements. All of GAC's development and emergency assistance initiatives require an environmental screening. Initiatives are then classified into four categories. Category D refers to emergency situations. Emergencies are defined by the Canadian Environmental Assessment Act (2012) as a situation where "it is important for the protection of property or the environment or the health or safety of persons that the project be carried out without delay. Emergency initiatives are not subject to any environmental analysis other than screening. However, maximum consideration of environmental risks is encouraged. Post-emergency initiatives do not fall under Category D and must undergo an environmental assessment if required. (link: https://www.international.gc.ca/world-monde/funding-financement/screening_tool-outil_examen_prealable.aspx?lang=fra)	EIP provides guidance to partners on environmental risk management. A, "Environmental Handbook for Community Development Initiatives" is also available for partners and lists environmental requirements and procedures and tools, namely : • Environmental assessments, • Strategic Environmental Assessments, • Environmental management systems, (link: https://www.international.gc.ca/world-monde/funding-financement/environment_handbook-manuel_environnement.aspx?lang=fra#a5)
Irishaid (Ireland)	Irish aid's environmental policy is organized around 2 main strategies: 1) Taking into account the environment as an essential element of sustainable development and the integration of environmental considerations into all programmes, projects and activities funded. 2) The development of national and international partnerships to contribute to sustainable development. (link: https://www.irishaid.ie/media/irishaid/allwebsitemedia/20newsandpublications/publicationpdfs/english/irish-aid-environmental-policy.pdf). Section 8.5 of Irish aid's environmental policy relates to humanitarian aid. Irish aid advocates for more environmental integration in humanitarian aid funding policies; requiring environmental impact assessments in the funding guidelines and promoting environmental awareness. While Irish aid's humanitarian aid policy does refer to environmental integration by partners, the funding application and its eligibility criteria does not refer to it. link: https://www.irishaid.ie/media/irishaid/allwebsitemedia/20newsandpublications/eligibility-criteria-for-general-er-funding-may-2014.pdf).	With a view to raising its partners' awareness of environmental integration and supporting its environmental policy, Irish aid is helping to develop and disseminate several key documents. 13 keysheets have been developed - each of them focuses on the relationship between a domain/theme and the environment. keysheet 12, Environment and humanitarian assistance, provides an overview of environmental considerations in humanitarian assistance. (link: https://www.irishaid.ie/media/irishaid/allwebsitemedia/20newsandpublications/publicationpdfs/english/environment-keysheet-12-humanitarian-assistance.pdf)
SDC (Switzerland)	Environmental protection is enshrined in Article 54 of the Swiss Constitution. Switzerland's International Cooperation Report 2017 - 2020 underlines the link between sustainable development and climate change and stresses the need to strengthen the environmental dimension within the Swiss Agency for Development and Cooperation (SDC). To this end, the SDC has set up the Global Programme Climate Change and Environment (GPCCE). In the GPCCE strategy for 2017-2020, it is stated, as a cross-cutting theme, that programmes, projects and activities financed by the SDC must integrate climate change and environmental considerations, regardless of the area of intervention. To this end, the SDC encourages the sharing of information and experiences, and develops monitoring and support tools. The integration of environmental issues is increasingly taken into account in SDC policies. However, no procedures are required for either development aid or humanitarian assistance. SDC is positioning itself as an environmental support/advisory structure to the partners which they fund	The SDC has created a tool called the Climate, Environment and Disaster Risk Reduction Integration Guidance (CEDRIG). This tool, based on an integrated approach, enables any operational actor to take into account the risks related to natural hazards, climate change and environmental degradation in the design and monitoring of projects and activities in order to develop strategies to reduce them. CEDRIG is available on the internet, free of charge and open to all. The SDC also offers training to present the tool and give the keys to its use. (link: https://www.cedrig.org/) SDC has also developed 12 thematic networks, including the Disaster Risk Reduction (DRR) and Climate Change (CC) networks. The aim of these networks is to capitalize on operational experiences and projects by theme so that this knowledge can be shared and reused later.
SIDA (Sweden)	SIDA has developed a new environmental policy in 2017. SIDA is committed to protecting the environment and promoting a transformation towards sustainable development by systematically integrating environmental issues into all its programmes, projects and activities, whether in development aid or humanitarian assistance. This policy is organized around four main areas: (1) Adaptation and mitigation of climate change; (2) Sustainable use of natural resources; (3) Reduction of air, water and soil pollution; and (4) Promotion of a circular economy. In the context of humanitarian assistance, SIDA specifies: "In striving to reduce the negative impact of humanitarian activities on the environment and climate, SIDA must ensure that humanitarian assistance is conducted in the most environmentally sustainable manner possible, without compromising the fundamental objective of saving lives and alleviating suffering". Strategy for Sweden's humanitarian aid provided through the Swedish International Development Cooperation Agency (Sida) 2017-2020	Sida has developed a Green ToolBox. This online platform brings together a set of key documents that support the integration of environmental issues and climate change in order to inform and accompany partners and operations led by SIDA, all sectors combined (link: https://www.sida.se/English/partners/methods-materials/green-tool-box/). Sida has developed its own Environmental Impact Assessment (EIA) for all its partners. In order to best support them, a set of documents (guidelines) explaining the EIA process is available in the Green ToolBox.

	Environmental policy for humanitarian aid	Available technical tools for environmental mainstreaming
DFID (UK)	As shown in the Environment Guide (2003), as early as 1997, in its first White Paper for International Development, the British government indicated its willingness to support environmentally sensitive sustainable international development. The Environment Guide (2003) provides all DFID partners with advice and guidance on planning and environmental risk management. The section on conflict and humanitarian assistance (pp. 49 - 51). It describes the possible risks encountered and the strategies to be put in place to deal with them. (link: https://ec.europa.eu/europeaid/sites/devco/files/methodology-dfid-guide-to-environmental-screening-200306_en_2.pdf). As a follow-up to the Environmental Guide, DFID published a report in 2019 entitled Smart Rules - Better Programme Delivery. This document presents the operational framework (technical advice, principles, standards) for the design and implementation of programmes, projects and activities funded by DFID. It clearly states the need to reduce the environmental impacts of interventions. While DFID is involved in the development and reflection of policies to reduce environmental impacts, the study did not identify strict procedures related to humanitarian aid.	DFID has developed several tools and technical supports to encourage the integration of environmental issues into its partners' programmes, projects and activities. Many guides and studies have been produced (or commissioned) by DFID and are available on their website. For example, DFID provides its partners with a set of Topic Guides whose aim is to share knowledge and raise awareness of a given theme. One of these is entitled Mainstreaming environment and climate change into humanitarian action. (link: https://assets.publishing.service.gov.uk/media/57a0897fed915d3cfd00028a/EoD_TG_Humanitarian_Environ_Conflict_June2015.pdf) In terms of evaluation, DFID has created the Environmental Screening Note (ESN) which is used from the design stage of the project and which must define the degree of risk to the environment.
DFAT aid (Australia)	As stated in the Environment Protection Policy (2014), DFAT has the obligation to implement Australia's legal requirements under the Environment Protection and Biodiversity Act, 1999 (EPBC Act) to ensure that funded programs, projects and activities will not cause significant environmental impacts and, where appropriate, that measures will be taken to mitigate them. For better integration of environmental issues, DFAT aid has established the Environmental and Social Safeguard Policy (2018) to set out procedures and guidelines relating (in part) to environmental protection. In theory these policies and procedures apply to humanitarian aid. (link: https://dfat.gov.au/aid/topics/aid-risk-management/Pages/environmental-and-social-safeguards.aspx) In order to implement these procedures and guidelines, DFAT aid has also created the Environment and Social Safeguard Operational Procedures (2019). This document provides partners with the keys to comply with DFAT aid's environmental policy in each stage of the project cycle. However, it is specified that in emergency situations, DFAT aid does not require impact assessments or management plans.	DFAT aid has developed several tools and technical supports to support partners in the integration of environmental issues and risk management. Environmental and Social Impact Assessment (ESIA), which allows to identify and evaluate the potential impacts of an activity and the strategies to be put in place to mitigate them. Environmental and Social Management Plans (ESMPs), which are derived from the ESIA. This tool provides a better understanding of impact management by identifying resources, roles and responsibilities. (link: https://dfat.gov.au/about-us/publications/Pages/environmental-and-social-safeguard-operational-procedures.aspx) However, ESIA and ESMP are used relatively little in humanitarian aid.

ANNEX 2: GUIDELINES, TOOLS AND INITIATIVES

The following tools range from overarching guidelines for cross sector programming, to sector or context specific assessments. This list is not exhaustive and presents only some of the main ones.

- SPHERE Thematic sheet on environment published in 2019, which includes key actions by programme cycle phase, which complements standard 7 within the shelter and settlement section on environmental sustainability.

- The NEAT + - The Nexus Environmental Assessment tool[71] was developed in 2019 by the Joint Environment Unit (an updated version of the NEAT tool first developed by NRC). It helps humanitarian actors first to quickly identify issues of environmental concern in the project location, then helps to identify environmental risks linked to the project itself (wash, livelihoods and shelter) and suggests mitigation measures. It can be conducted on Kobo or Excel. This tool is starting to be increasing used by UN agencies and INGOs, it can be used by non-environmental experts and is very easy and quick to use.

- EHA connect (https://ehaconnect.org/) is an online library of tools, guidelines, research papers, articles etc. linking the environment and the humanitarian sectors. It was developed by the JEU with funding from USAID.

- MOOC: CARE international have launched an online MOOC called "becoming a climate smart organisation" which lasts approximately 1h30 and helps aid organisations understand what they can do to reduce their carbon footprint (https://careclimatechange.org/academy/courses/becoming-a-climate-smart-organisation/). Free

- MOOC: ICRC have launched in 2019 an online training module called "Sustainable Development in Humanitarian Action (4 modules: Sustainable development in a humanitarian context; Sustainable supply chain: Applying the life-cycle perspective; Sustainability in field operations: Water, energy and waste; Setting up a sustainability program;)": Free https://www.icrc.org/en/document/icrc-develops-its-first-massive-open-online-course-mooc-sustainability-humanitarian-action

- Groupe URD « Online Learning Platform": Groupe URD has resealed four online modules on the links between environment and humanitarian work. These modules are in French and each last between 1 or 2 hours and free. 1) Introduction 2) Environment in the project cycle 3) greening and organisation 4) waste management in an humanitarian context https://learning.urd.org/#frontblockregion

- The JEU has developed two 1h30 long training module on "Environmental in Humanitarian Action" and "Disaster Waste Management" which can help for increasing awareness in partner organizations and in ECHO. https://www.eecentre.org/training/

- Environment Marker – this was developed by UNEP and adapted by OCHA in 2014 in an attempt to integrate key environmental considerations into project design for consolidated humanitarian appeals. Through simple coding the Environment Marker tracks a project's expected impact on the environment, and whether recommended actions have been undertaken. The tool is to be seen as a possibility to ensure that any negative impact on the local environment of a humanitarian project is reduced as much as possible. (JEU, 2014). The Marker has been implemented in Afghanistan, South Sudan and Sudan, coordinated by UNEP and OCHA

- Guidelines for Environmental Emergencies – Developed by JEU in 2009 these guidelines are intended as a reference guide for countries wanting to improve their framework for preparedness in the event of an environmental emergency, and for international environmental emergency responders providing assistance (JEU, 2009).

71 https://www.eecentre.org/resources/neat/

- UNHCR Environmental Guidelines - In 1996 UNHCR produced Environmental Guidelines (later updated 2005 with CARE as FRAME (Framework for Assessing, Monitoring and Evaluating the Environmental Impacts of Refugee Operations) to introduce environmental considerations in a consistent and coordinated manner into all relevant sectoral activities relating to work with refugees and returnees. UNHCR has also produced a plethora of technical guidelines on different environmental issues related to camp management (Kelly, 2013).

- Green Recovery and Reconstruction Toolkit- Training toolkit for greening operations (sector specific, offices, logistics etc.) which was developed by the WWF and the American Red Cross in 2005. 10 modules available in English, Spanish and Indonesian: http://envirodm.org/green-recovery)

- Environmental Guidelines – Developed by DFID in 2003, and principally aimed at development activities the Environmental Guidelines demonstrates a positive move by a donor to consider the environment in the screening of the projects it funds. The guidelines provide all DFID staff, particularly project officers, with sufficient advice and guidance to enable them to undertake environmental screening.