

# ENVIRONMENT AND HUMANITARIAN ACTION

## Country Study

## Nepal



JOINT UNEP/OCHA ENVIRONMENT UNIT

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*Joint UNEP/OCHA Environment Unit*

*Palais des Nations*

*CH-1211 Geneva 10*

*Switzerland*

*Layout: Sandra Besson, Joint UNEP/OCHA Environment Unit*

*Cover photo: IDP camp in Nepal after the 2010 earthquake (Credit: UNEP/OCHA JEU)*

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*The Joint UNEP/OCHA Environment Unit (JEU) assists Member States in preparing for and responding to environmental emergencies by coordinating international efforts and mobilizing partners to aid affected countries requesting assistance. By pairing the environmental expertise of the United Nations Environment Programme (UNEP) and the humanitarian response network coordinated by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), the JEU ensures an integrated approach in responding to environmental emergencies. The Environmental Emergencies Centre (EEC) ([www.eecentre.org](http://www.eecentre.org)) is an online tool designed to build the capacity of national responders to environmental emergencies developed by the JEU.*

# Executive Summary

The Nepal Environment and Humanitarian Action (EHA) country-level study is one in a series of studies undertaken by the United Nations Environment Programme (UNEP) / UN Office for the Coordination of Humanitarian Affairs (OCHA) Joint Environment Unit (JEU) in 2015 that assesses the extent to which environmental concerns have been mainstreamed in humanitarian action. In July 2015, OCHA and UNEP undertook a ten day mission to Nepal to better understand environmental mainstreaming in a rapid onset emergency and provide guidance and advice to humanitarian actors on how to improve mainstreaming efforts.

The study indicates that while there is generally a high level of awareness of the need to support environmental mainstreaming, much more can be done to integrate environment into preparedness actions in high risk countries.

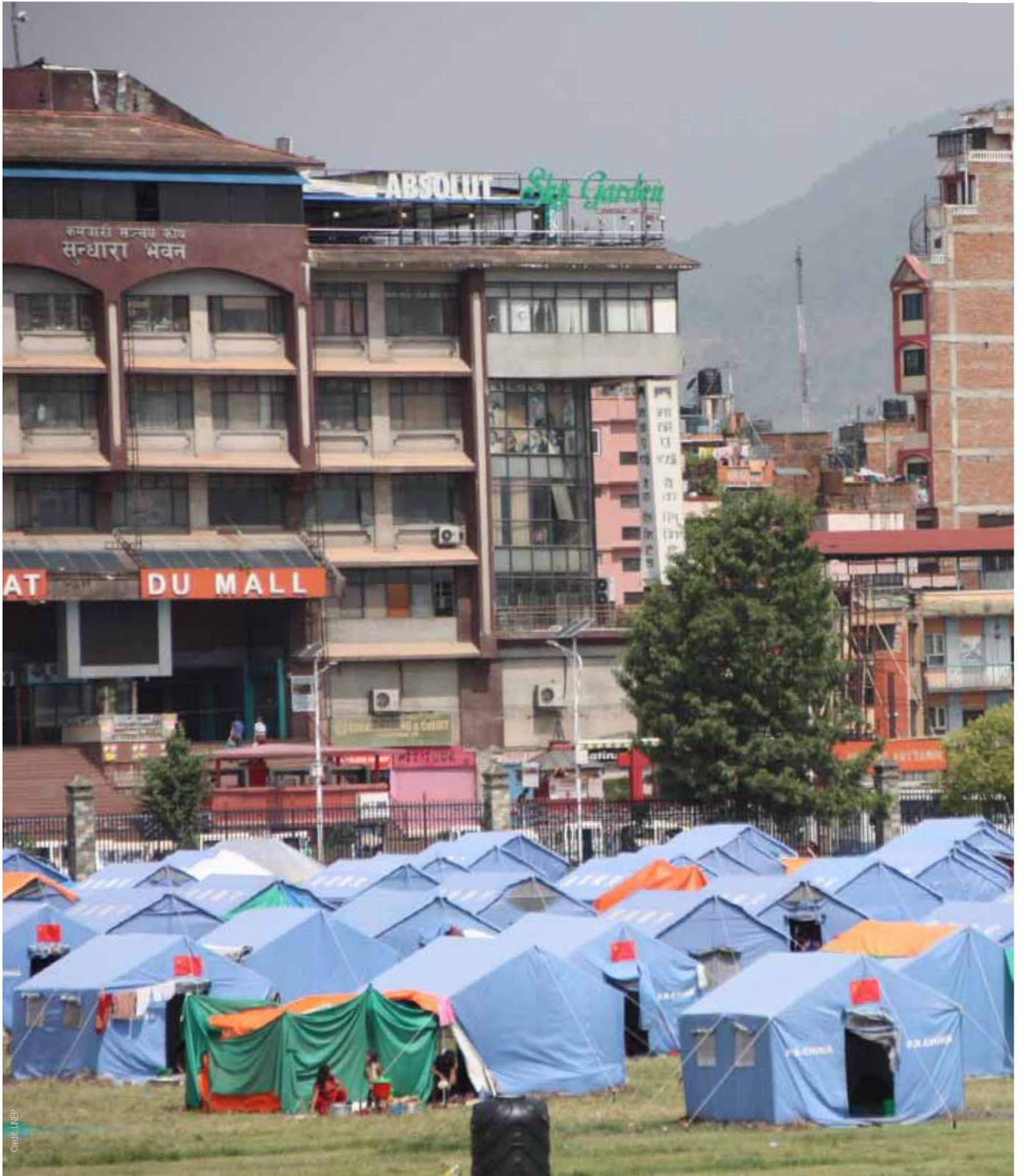
The mission managed to meet with a significant range of actors contributing to the response and participate in two field missions to IDP camps, relocation sites, and affected urban and rural areas near Kathmandu. There is a significant amount of good work taking place on EHA, however, given the scope and scale of the disaster and the short duration of the mission there was insufficient time to capture it all.

Five key factors to strengthen environmental mainstreaming in rapid onset emergencies were identified based on the Nepal study:

- **Environment in preparedness:** Include environmental considerations in all facets of preparedness for response, not overlooking areas that can contribute to minimising impact and, make positive contributions to livelihoods and natural resources in future response (e.g. debris waste management guidelines agreed and in place, GIS data on natural resources and protected areas accessible, Rapid Environmental Assessment (REA) tool template agreed amongst appropriate actors, local environment expertise identified).
- **Integrate local environmental expertise:** Engage local environmental expertise in humanitarian action. The participation of World Wildlife Fund (WWF) Nepal in the Inter Cluster Coordination Group (ICC) in late June was referred to by a number of partners as the first significant step to put environment on the response agenda. In follow-up, members of the Nepal Hariyo Ban Program supported the development and introduction of environmental tip sheets for WASH, Shelter, Food and Education clusters which were highlighted as an asset and key reference for humanitarian partners.
- **Improve application of environmental assessment tools:** In Nepal there was an attempt to integrate the Rapid Environmental Assessment

(REA) process and findings into the humanitarian response. However, more consistent and earlier application of the REA process in future emergencies is key to laying the foundation for an environmentally informed response. The sequence of environment related assessments that are likely following a new or escalating emergency should be more widely recognized (Flash Environmental Assessment Tool (FEAT) -> REA -> Environmental Needs Assessment (ENA)/ Post-Disaster Needs Assessment (PDNA)). In principle the REA should be considered a standard tool for use in humanitarian response operations. In a larger emergency where a set of assessment tools are likely to be applied, early and strategic agreement amongst key stakeholders should be reached to ensure: harmonization of environmental assessment efforts; strong linkages to humanitarian response and early recovery process; and adequate technical and financial resources are made available.

- **Integrate energy sector into humanitarian response architecture:** The importance of bringing the energy sector response into the national and international humanitarian architecture was highlighted in Nepal, where distribution of several thousand institutional and household solar energy units could have been better linked to cluster response priorities (eg. Health and Education clusters). In addition, the long-term renewable energy goals of Nepal and the significant reconstruction required after the earthquake warrants development of an energy strategy to improve access to household fuel and lighting using appropriate technologies and renewable energy in the humanitarian response.
- **Further enhance environmental interoperability of surge mechanisms:** A significant number of rapid response mechanisms were triggered in the aftermath of the quake (including UN Disaster Assessment and Coordination (UNDAC) teams, Humanitarian Civil-Military Coordination (UN-CMCoord) expertise, and Urban Search and Rescue (USAR) teams). These mechanisms facilitate or directly provide support capacity which could be utilised to augment and strengthen the environmental response. A successful example is UNDAC teams' increased application of the Flash Environmental Assessment Tool (FEAT) during response since the tool was integrated into the UNDAC induction course curriculum in 2013. However, deployed military assets and USAR teams have not been similarly tapped into. These networks may have additional capacity to complement environmental response efforts and partnerships with these and other response networks should be strengthened..



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# List of acronyms

ACAPS	The Assessment Capacities Project
AEPC	Alternative Energy Promotion Centre
CaLP	Cash and Learning Partnership
CCG	Cash Coordination Group
CHS	Core Humanitarian Standard on Quality and Accountability
DRR	Disaster Risk Reduction
DFID	UK Department for International Development
EFA	Environmental Field Advisor
EFLG	Environment Friendly Local Government
EHA	Environment and Humanitarian Action
EIA	Environmental Impact Assessment
ENA	Environmental Needs Assessment
ER	Early Recovery
ERM	Emergency Response Mechanism
ERP	Emergency Response Preparedness
ERR	Emergency Response Roster
FAO	Food and Agriculture Organization
FEAT	Flash Environmental Assessment Tool
FMT	Foreign Medical Teams
FRAME	Framework for Assessing, Monitoring and Evaluating the Environment in Refugee-Related Operations
GIS	Geographic Information Systems
GMO	Genetically Modified Organisms
GRRT	Green Recovery and Reconstruction Toolkit
HCT	Humanitarian Country Team
HPC	Humanitarian Programme Cycle
IASC	Inter-Agency Standing Committee
ICC	Inter Cluster Coordination
IDP	Internally Displaced Persons
IHP	International Humanitarian Partnership
IOM	International Organization for Migration
JEU	The Joint UNEP/OCHA Environment Unit
MIRA	Multi-cluster Initial Rapid Assessment
MoE	Ministry of Education
MoFALD	Ministry of Federal Affairs and Local Development
MoH	Ministry of Health
MoSTE	Ministry of Science, Technology and Environment
MoU	Memorandum of Understanding

MoUD	Ministry of Urban Development
MSFP	Multi Stakeholder Forestry Programme
NFI	Non Food Items
NGOs	Non-Governmental Organizations
OCHA	Office for the Coordination of Humanitarian Affairs
OFDA	Office of U.S. Foreign Disaster Assistance
PDNA	Post-Disaster Needs Assessment
RCO	Resident Coordinator's Office
REA	Rapid Environmental Assessment
ROAP	Regional Office for Asia and the Pacific
SAFE	Safe Access to Fuel and Energy
SFDRR	Sendai Framework for Disaster Risk Reduction
SWMTSC	Solid Waste Management Technical Support Center
UN-CMCoord	Humanitarian Civil-Military Coordination
UNDAC	United Nations Disaster Assessment and Coordination
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
USAR	Urban Search and Rescue
WASH	Water, Sanitation and Hygiene
WFP	World Food Programme
WHO	World Health Organisation
WWF	World Wildlife Fund

# 1. Background and context

The Core Humanitarian Standard on Quality and Accountability (CHS) sets out Nine Commitments for organisations and individuals involved in humanitarian response. The third commitment seeks to ensure that *“Communities and people affected by crisis are not negatively affected and are more prepared, resilient and less at-risk as a result of humanitarian action”* a key action listed under this commitment is to *“identify and act upon potential or actual unintended negative effects in a timely and systematic manner, including in the areas of..... the environment”*

Natural disasters can have a range of direct impacts on the environment (flooding, loss of tree cover, landslides, etc). In addition, relief and recovery operations will often cause unintended further environmental damage, exacerbating environmental degradation and jeopardising longer term recovery efforts and development goals. Environmental information and analysis of the context along with assessment of natural resource impacts are critical for more accountable humanitarian action. Introducing environmental resilience principles in the early phases of an emergency and sustaining them throughout the transition period can greatly contribute to mitigating potential conflict over resources, enhancing livelihoods and reducing vulnerabilities.

Since the 2005 humanitarian reform, “environment” should be considered a priority as a cross-cutting issue by humanitarian actors. The study “Environment and Humanitarian Action: Increasing Effectiveness, Sustainability and accountability” published in August 2014, identified the need for evidence-based advocacy. With financial support from the Government of Finland, the JEU responded to this call and has undertaken a number of country-level studies to explore the level of environment mainstreaming in selected humanitarian crisis.

## 1.1 Objectives and scope

The study overall objective is to provide an overview of the extent to which environmental considerations have been incorporated into humanitarian action. The study is based on a desk review and the findings of a JEU mission to Nepal in July 2015 with the following objectives:

1. Assess the extent to which environmental concerns have been taken into consideration throughout the HPC by clusters coordinators and partners, and assess the level of awareness of stakeholders of the environment and humanitarian action nexus; and

2. Identify best practices, lessons learned, and country specific measures to strengthen environmental mainstreaming in Nepal.

The scope of the study covers ongoing humanitarian response related to the 25 April earthquake and aftershocks that followed. Information was gathered through key stakeholder interviews and limited to Kathmandu.

## 1.2 Environment and humanitarian context of Nepal

On 25 April 2015, a 7.8 magnitude earthquake struck Nepal with an epicentre in Gorkha district, 81 km northwest of Kathmandu. This was followed by strong aftershocks, including one of 7.3 magnitude with an epicentre 18 km southeast of the town of Kodari in Dolakha district on 12 May, 2015. The earthquake and its aftershocks left nearly 8,700 people dead and over 100,000 injured. The earthquake destroyed over half a million houses and damaged over 200,000 more. A large number of people were displaced and living in IDP camps in Kathmandu and near district headquarters. By the end of May, it was estimated US\$ 422 million was required to reach 2.8 million people in need of humanitarian assistance.<sup>1</sup>

The earthquake had a significant impact on water and sanitation, energy, infrastructure, transport, social services (education and health), forests, agriculture, and the private sector. Reconstruction costs were estimated at US\$ 6.7 billion. The most severely affected districts are in the mid-hills and mountains of western and central regions. A large scale relief effort was launched by national authorities supported by international emergency response providers. Following search and rescue efforts emergency shelter, food, water and medical assistance were all prioritized.

Nepal is a highly disaster prone country, and is the eleventh most earthquake-prone country in the world. In addition, significant floods and landslides have become a seasonal occurrence. Outside of Kathmandu most Nepali families are dependent on arable land and local natural resources for their livelihoods.

There have been many cycles of preparedness for response measures in Nepal over the past several years and in particular following the end of the conflict in 2006.

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1. Nepal Flash Appeal Revision: Nepal Earthquake April – September 2015, 1 June 2015.

Humanitarian organisations responding to the humanitarian needs at the time subsequently shifted increasingly to implement preparedness activities at national and district levels (e.g. search and rescue exercises, IDP camp location pre-identification, logistics capacity assessments, civil military training exercises). These likely contributed to the Government of Nepal and international communities' robust response to the 2015 earthquakes, however, few preparedness initiatives took into strong consideration environmental considerations based on the findings of the Nepal study. This is hardly a surprise given the limited guidance available on environmental considerations in response preparedness.

### 1.3 Direct impacts on the environment

An estimated 2.2 percent forest cover was lost in six earthquake affected districts.<sup>2</sup> Over 2,500 landslides were identified, generating a large amount of debris which will increase the sediment load and risk of flooding along several rivers. Hydrologic changes were recorded in several districts as water flow in some springs decreased while at other water sources there were reported increases in water flow. A vital source of income for many rural communities are the 800,000 tourists visiting Nepal each year, of which a majority enter national parks. As a result, loss of natural resources and damage to ecosystems will threaten the livelihoods, food security, and health of many vulnerable communities.



*A street market in the middle of rubble and debris, Nepal*

2. FAO study of Rasuwa, Sindhupalchowk, Dolakha, Gorkha, Dhading and Nuwakot districts.

## 2. Key findings

### 2.1 Accountability

Local capacity in WWF and Hariyo Ban (a consortium of international and national NGOs working in the field of biodiversity conservation, climate change, and community livelihoods), managed to support priority environmental interventions such as the REA and provide environmental guidance to humanitarian clusters. Based on initial information OCHA Nepal did not request the deployment of an Environmental Field Advisor (EFA) which would have complemented the efforts of Hariyo Ban and provide additional technical and coordination support on environmental mainstreaming. In June, the WWF representative of Hariyo Ban was invited to present preliminary REA findings at the Nepal Inter Cluster Coordination Team (ICCT) meeting. This single occasion was significant in elevating the environmental awareness of many cluster lead agencies and had an impact on the response for weeks to come. After the ICCT meeting, WWF and Hariyo Ban members followed-up with communication material and cluster tip sheets for the WASH, Shelter, Food Security and Early Recovery clusters on ways to minimise environmental impacts.

#### 2.1.1 Cash modality

Within the first week of the response, a Cash Coordination Group (CCG) was established to provide standards and modalities for cash transfer programming. Efforts have been made to strengthen environmental consideration when applying the modality in Nepal. Some examples include: Early Recovery Cluster Cash for Work guidelines stipulate that cash for work programmes need to be environmentally friendly; and Food Security vouchers place requirements on seed suppliers and regulations on Genetically Modified Organisms (GMO).

In general, the potential environmental impact of cash programming in the Nepal Earthquake response does not appear significant given the scale of its use. However, depending on availability of quality items in local markets, beneficiaries may have purchased less durable items than would normally be offered through in-kind assistance packages potentially generating more waste as items are soon discarded.

Results of environmental mainstreaming often take time to manifest themselves, or have high capital costs (although full life cycle costs are often lower), which means one year cycles of humanitarian funding make it difficult to show benefits of investments in environment for humanitarian action. The Cash and Learning Partnership (CaLP) is looking at the

carbon footprint issue and cash to confirm (or not) the assumed benefit. Local procurement often lowers quality if not managed well and as a result less durable items which are quickly disposed of generate more waste. Cash assistance is only monitored up to usage and not after. So the implications of what is done with the items purchased or disposed of is unknown not clear which will have environmental consequences.

One opportunity for environmental mainstreaming that cash offers is the possibility to do awareness raising with vendors teaching them about environmentally friendly approaches. This could also be part of preparedness efforts. Environmental considerations could be standard part of vendor agreements. Environment should figure in all aspects of future Cash readiness programmes in Nepal or elsewhere (from the feasibility assessment to monitoring plans).

#### 2.1.2 Interoperability

A significant number of rapid response mechanisms were triggered in the aftermath of the quake including UNDAC, Humanitarian Civil-Military Coordination (UN-CMCoord), USAR teams, the International Humanitarian Partnership (IHP), Foreign Medical Teams (FMT), and Emergency Response Roster (ERR) surge support. Some of these mechanisms either directly or indirectly provide support capacity which could be used to augment the response to environmental issues. Already with deployment of UNDAC teams there is a strong chance that members have been trained and are able to apply the FEAT. This is in place following the introduction of FEAT in UNDAC training courses since 2013. However, the utilisation of capacities in other mechanisms should be more fully explored. For example, military assets often include engineers some of whom are environmental engineers and can be utilised to inform more environmentally sustainable approaches in response. Another example is the mobilization of USAR teams of which over 100 teams were deployed to the Nepal response and many stayed beyond the search and rescue period to support response efforts. In future, residual USAR capacity (eg. health and safety officers and structural engineers) could also be used to inform the debris waste management strategy early on or other aspects of the response related to environment.

In addition, ProCap and Gen Cap expertise surged into the Nepal response shared a common concern when it comes to safe access to natural resources such as water, fuelwood and other forest products.

Recognizing the common areas of concern should be taken as an opportunity to strengthen advocacy around protection and environment related issues.

### 2.1.3 Government

The Ministry of Science, Technology and Environment (MoSTE) is not a member of the National Emergency Response Mechanism (ERM) and does not formally participate in emergency response, neither at the national nor the district level. If MoSTE participates, it is only as a special invitee. This limits the role of the Ministry in actual emergency response, but also in terms of emergency response preparedness and planning as it does not typically interact with humanitarian actors. With support from United States Agency for International Development (USAID) and WWF, MoSTE took the lead on implementing the REA. In addition the Ministry of Forestry and Soil Conservation (MFSC) played an active role in the Post Disaster Needs Assessment (PDNA) covering most of the environmental issues as the responsible authority for the sectoral group Environment and Forestry sector group.

The REA information gathering process occurred from May through July 2015 and a first draft of the report was officially shared with external partners in September 2015, too late for the findings and recommendations to be taken into consideration for the initial and main wave of humanitarian response though still in a position to inform recovery efforts being planned.



UNEP mission discussing debris waste management and environmental issues in the response with local authorities, September 2015, Nepal

Prior training on rapid environmental assessments for the ministry and key stakeholders, as well as agreed roles and responsibilities for implementation and structure, could perhaps have sped up the process, allowing the assessment to be truly rapid and useful for the humanitarian and early recovery response.

### 2.1.4 Donors

USAID's environment section works on climate change adaptation, mitigation, biodiversity, and hydropower. It also works closely on mainstreaming environment into the Disaster Risk Reduction (DRR) sector. USAID in the past support the roll out of the Green Recovery and Reconstruction Toolkit (GRRT) in flood affected areas, and will continue to do so also post-earthquake. USAID, like most humanitarian donors, has an exclusion clause for Environmental Impact Assessment (EIA) for emergency programming, yet the mission tries to implement it when possible. A desk based environmental examination is still required for emergency programming, and findings here can trigger a full EIA. All of USAID's contracts and grants include reporting obligations on environment. USAID funded the REA post-earthquake and remains actively engaged on environment and humanitarian affairs.

DFID has provided significant funding to environment related development programmes in the past (eg. forest user groups, environmentally friendly local government). While environment remains a pillar of DFID's development support to Nepal following the earthquake, during the humanitarian response, DFID field staff were not yet in a position to take into consideration the recently released guidance, *Mainstreaming environment and climate change into humanitarian action*.<sup>3</sup> Unfortunately due to the limited duration of the mission additional donors were not met.

3. Topic Guide, Mainstreaming environment and climate change into humanitarian action, DFID, June 2015.

## 2.2 Cluster specific environmental considerations

### 2.2.1 WASH Cluster

Following the earthquake, water supplies were severely affected increasing public health risks including the spread of WASH related disease. It was estimated that about 1.1 million people lost access to protected water supplies and toilets. The monsoon rains then caused floods which further damaged water systems. The WASH cluster priority in the response was to provide essential WASH supplies and services for displaced persons.

Overall cluster partners expressed that they have experience in taking environmental concerns into consideration in assessments, implementation and monitoring. Furthermore, WASH assessment and monitoring tools included environmental considerations. Cluster partners stated that they have to follow the Environment Regulation Act which is monitored by the Environment Section of the Urban Development Department.

At the time of the mission, the WASH Cluster was already looking at the longer term response, and developing a quality strategy for this, which would include environmental issues. USAID is supporting this by funding initiatives that find innovative ways to programme climate resilient water projects. Reports of no significant increase in the outbreak of water borne disease following the earthquake, not even in heavily populated displacement areas, is a general reflection of the success of the WASH Cluster response. Experienced implementing partners, adherence to national rules and regulations, and awareness of potential risks, contributed to ensuring good environmental practice in humanitarian affairs for the WASH Cluster in the Nepal earthquake response.



*Following the earthquake, water supplies were severely affected in Nepal*

### 2.2.2 Health

Establishing temporary health care services, longer term reconstruction and ongoing medical waste management issues are some of the environmental concerns facing the Health Cluster. Health care infrastructure was severely damaged in 14 districts depriving access to regular health care to thousands of affected people, and putting them at risk of contaminated drinking water and soil due to improper management of medical waste.

The majority of healthcare facilities, including hospitals, do not have incineration and sterilisation facilities to treat waste. Medical waste may be sorted but is then often burned and/or buried in open pits near facilities or even mixed with municipal waste management operations. Both practices existed prior to the earthquake and raise serious health concerns. Medical waste was reportedly also generated through used equipment, instruments and chemicals which were left behind by temporary national and international medical teams.

Of concern to the Health Cluster was ensuring proper management of medical waste, especially by foreign medical teams which were left to use their own methods of disposal that were presumed to be in line with international standards. The cluster was not aware of, or applying, any specific environment guidelines related to emergency health response which may have helped ensure medical teams take appropriate action when disposing of medical waste. The World Health Organisation's (WHO) planned formalization of self-certified Emergency Medical Teams (EMT) in 2016 is a positive step to ensuring foreign teams work toward international standards, including those that will help minimize potential threats to the environment.

Health partners identified the construction of temporary health facilities as a potential environmental issue. The Ministry of Health (MoH) was able to establish a standard design for temporary structure six weeks into the crisis, however, by then some international teams had already initiated separate plans with district health staff and foreign engineers. It is not clear what will happen with some of the planned (non MoH agreed) pre-fabricated temporary structures when permanent health structures are built. In general reconstruction of public buildings including health facilities will result in resource demands which might be in direct competition in some districts where households also require materials for the reconstruction of homes. Building back better is a huge challenge when the pre-quake medical infrastructure was poor and now damage is so extensive.



*Debris in the Municipality of Lubhu remained untouched in many areas four months after the earthquake hampering repair and reconstruction efforts for many citizens.*

Significant in-kind donations of medication were provided in the early days of the response. The Health Cluster observed that large proportions were not used, as they were, for instance, out of date, not needed, lacking instructions in English/Nepali, or not stored properly, and thus ended up as waste instead. If not properly disposed of, some of this could become toxic and hazardous waste. The medications were shipped to Nepal despite the fact that they were not on the Government's official list of support needed. Better humanitarian donorship could have avoided the problem.

The medical response was robust and of significant scale given the number of medical teams and medical supplies which were flown in for the earthquake response. As with other clusters, environmental considerations could have been easily addressed if recognized in pre-quake preparedness efforts. Numerous ad hoc initiatives amongst health cluster partners could have been avoided by developing clearer guidelines for the:

- Practical and effective emergency medical waste disposal in Nepal (or applying global medical waste disposal standards);
- Demolition of damaged/destroyed health centers and associated laboratory facilities; and
- Design and construction of temporary health facilities.

### 2.2.3 Emergency Shelter and Non Food Items

Approximately 500,000 private homes were destroyed and over 250,000 damaged by the earthquake. In addition to houses, approximately 6,200 government buildings, over 1,200 health facilities, and 8,300 school buildings were destroyed or damaged. Traditional brick buildings as well as concrete construction in the Kathmandu valley was affected and in more rural areas stone, mud mortar and timber are common construction materials.

The Shelter Cluster has benefited from a history of integrating environmental considerations into shelter activities globally with institutional support from WWF. As a result, environmental concerns typically feature early in the shelter response. The Shelter Cluster received the draft environmental guidelines from Hariyo Ban but then worked to strengthen and operationalize them with cluster members and then seek the endorsement of the strategic advisory group for Shelter.

Questions about the environment reportedly come up in cluster discussion very often which has presented a challenge to cluster coordinators who often find they do not have sufficient contextual knowledge to answer appropriately. Shelter Cluster partners are aware of environmental concerns but lack the technical knowledge to consistently identify and address them. The cluster will complement the Government grants to home owners for reconstruction with renovation and reconstruction guidance which will include environmental considerations and messaging.

The initial seven-day Shelter technical training course reportedly did not include environmental issues even though there were ample opportunities particularly on winterization which included discussions on heating and cooking fuels and the use of firewood. This could have complemented the efforts of the Food Security Cluster and the messaging provided through well-established programmes such as Safe Access to Fuel and Energy (SAFE) which has a long standing presence in Nepal prior to the earthquake. While much building material is being reused the increased demand for traditional building material is significant. Following the earthquake there is an opportunity to introduce alternative/non-traditional building materials and designs that are safer and promote environmentally sound practices. It is clear from the efforts of the shelter cluster that additional environmental capacity is needed to support clusters identify and address environmental concerns.



*A woman cooking outside in Nepal after the earthquake devastated thousands of homes.*

#### 2.2.4 Food Security

The Food Security Cluster set up a programme quality working group at Kathmandu level, which initially focused on needs assessments but then broadened to include cross-cutting issues, including the environment and safe access to energy. The cluster consulted WWF on key environmental questions such as the restocking of livestock, including poultry and found the additional support very helpful.

The cluster was aware and concerned about the effects on biodiversity following large scale seed distribution as part of the response. In the early days, the importance of distributing the timely distribution of seeds within the planting season took precedence, and thus little environmental due diligence could be

done given urgency, scale and procurement issues. However, for the winter season the cluster did engage Food and Agriculture Organization (FAO) and the Government in the development of guidelines for distribution.

WFP has a long standing food for work programme building improving rural access through road and trail construction which includes an environmental impact assessment of every project. This environmentally sensitive approach to infrastructure programmes is continuing in the earthquake response. Swiss Agency for Development and Cooperation (SDC) to provide expertise on bio engineering for trail rehabilitation and slope stability, they can also provide advice on other environmental considerations. However, while reviewing recent early recovery proposals submitted by local partners WFP noted that they include very few environmental considerations. Additional guidance on screening proposals would support efforts to include environmental considerations in the grant applications.

#### 2.2.5 Education

Access for girls and boys to early childhood, primary and secondary education in safe and protective learning spaces was the priority of the Education Cluster in the earthquake response. Overall environmental considerations featured relatively frequently in cluster discussions and meetings, but the Cluster Lead and members did not feel they had sufficient technical knowledge and expertise to address environmental issues. Requests for guidance from headquarters at the global cluster level, or through the Network for Education in Emergencies also did not result in the provision of guidance material. Specific advice sought was on: Environmentally friendly material that could be used for construction of temporary learning centers (TLCs); Option for using green walls rather than concrete around schools (as walls collapsed during the earthquake and could have potentially been harmful to children had it not been Saturday and schools closed), Possibility of including rainwater harvesting in school facilities (including TLCs); and, Guidance on environmental aspects of WASH in schools.

The cluster did consider using the environment marker for the Flash Appeal, but again lack of capacity and technical knowledge prevented this.

The Cluster stated that WWF were very supportive of the request for support on environment issues, and the Cluster was aware of the REA and prepared to take its findings into consideration for future planning. The cluster took the initiative to develop a guidance note on Environment in the Emergency

Education Response outlining why environment is important as part of the emergency education response and providing practical tips for: safe debris waste management and recycling; site selection; sourcing of materials; replenishing material supplies; environmentally friendly WASH for schools; greening the school compound and; educating for environmental awareness and action.

Informed Cluster members, a pro-active Cluster Lead, support from a knowledgeable local environmental organization (WWF Nepal) meant the Education Cluster in Nepal was eventually able to factor environmental considerations into its humanitarian response. Having guidelines and partnerships in place in advance of the disaster (as a preparedness mechanism) would have allowed this to happen earlier.

## 2.2.6 Early Recovery - Debris waste management / Solid waste management

An estimated 4.0 million tons of debris were generated due to the earthquake which added a significant challenge to district authorities and municipalities which were often not well equipped to manage pre-quake solid waste management issues.<sup>4</sup>

The Early Recovery (ER) Cluster, co-lead by UNDP and MOFALD, adopted a three pillar approach focusing on debris management, reconstruction of community infrastructure and restoration of public service delivery.

MoFALD shared the Environmental Guidelines and Act with the Cluster members. The Cluster Lead indicated that there was generally a high level of awareness on environmental issues in the cluster, but

that there was a lack of technical experts (national and international) which the cluster and members could draw on in the response. For instance, in certain cases the Cluster did see the need for an EIA prior to project implementation, but did not know who to call on to undertake this.

At the time of the mission (July 2015) there was still no comprehensive plan for disaster waste management despite multiple organizations being involved. According to the Director of the Solid Waste Management Technical Support Center (SWMTSC) in the Ministry of Urban Development, Nepal had no existing policy on disaster waste prior to the earthquake, and this hampered the response. In 2014 MoFALD, together with International Organization for Migration (IOM) drafted a Kathmandu Valley Post-Earthquake Debris Management Strategy, funded by USAID/ Office of U.S. Foreign Disaster Assistance (OFDA), but this was not referenced by the Cluster. The strategy states that "...poorly managed disaster waste is a threat to health, safety and the environment, and can be a major impediment to post-disaster rescue operations..." but did not go on to elaborate on environmental considerations.

A debris waste management working group was formed under the ER Cluster and met relatively infrequently. At the time of the mission the Cluster was not aware of national environmental regulations. Given the volume of the debris much of the removal was undertaken in an ad hoc manner by private individuals. Recycling and reuse was taking place, as people naturally use what they can, but little attention was paid to toxic or hazardous material and health and safety issues.



*An estimated 4.0 million tons of debris were generated due to the earthquake.*

4. Solid Waste Management Technical Support Center

The cluster referenced some examples of poor site selection for waste dumps (close to rivers), but were unsure how to address this as the land had been selected by the Government. There is a need for better guidance and coordination structures (including with Government authorities), from the global level, on solid waste management in general, and debris waste management in particular, into which environmental considerations could be factored. In high risk countries such as Nepal, national Debris Waste Management guidelines should be developed as a preparedness measure to ensure to help expedite environmentally sound debris removal in future emergencies.

### 2.2.7 Energy sector response

There was damage to grid and off grid electricity generation facilities which will take months in some cases to repair and restore especially in rural areas. Renewable energy in rural areas were damaged or destroyed on a significant scale setting back development gains in biogas, improved cook stoves and household solar lighting systems. All of which help reduce demand for firewood, save time and work of women and children, and reduce negative health impacts of indoor air pollution.

The Government of Nepal's Alternative Energy Promotion Centre (AEPC) was the main body coordinating the response in the energy sector working across ministries, the private sector, donors, and NGOs. By June AEPC released procurement requests for cooking, lighting, and electrical power products, to be distributed at household level (eg 9,550 improved cook stoves, 10,000 solar lighting and solar PV mobile charging units). AEPC's aim is to make renewable energy mainstream resource through increased access, knowledge and adaptability contributing for the improved living conditions of people in Nepal and was instrumental in coordinating alternative energy solutions after the earthquake.

Coordination amongst national partners went well, however, the large number of international organisations suddenly interested in supporting alternative energy solutions in the response proved challenging as not all were aware of AEPC's role and the agreed government strategy and priorities for alternative energy in the response. In addition, the

energy sector was not linked to the international or national coordination structures in Nepal (e.g. 10,000 solar water purifiers available which would be suitable for schools but AEPC project staff were unable to link with Ministry of Education (MoE) and Education cluster for distribution).

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On a global level the Safe Access to Fuel & Energy (SAFE) Humanitarian Working Group took positive steps to coordinate partners engaged in emergency energy solutions in Nepal. SAFE's mission "to facilitate a more coordinated, predictable, timely, and effective response to the fuel and energy needs of crisis-affected populations" was realized through a set of online tools and services mapping energy initiatives. However, as mentioned previously, stronger or formal links between the energy sector and the international and national humanitarian coordination structures could have enhanced the overall response and the realization of SAFE's mission.



*Solar power units, such as this one charging 10 phones simultaneously, contributed to ensure communications in critically hit remote communities were maintained.*

## 2.3 Overview of Humanitarian Programme Cycle (HPC)

The HPC includes five stages: needs assessment and analysis, strategic planning, resources mobilisation, implementation and monitoring, operational review and evaluation. Preparedness can be considered as a distinct element underpinning the entire cycle and is supported by the IASC Emergency Response Preparedness (ERP) module. A review of key HPC global guidance and tools undertaken in 2013 and 2014 identified key entry points to mainstream environment. The following review in Nepal is limited to preparedness, needs assessment and the Flash Appeal.

### 2.3.1 Emergency Preparedness

The overall objective of preparedness is to reduce the humanitarian, social, economic and environmental impact of an emergency on affected populations and help them recover and continue with their lives as quickly and effectively as possible. Over the past decade numerous response preparedness activities have been implemented by the government, individual agencies and the UN Country Team/Humanitarian Country Team (UNCT/HCT). These cover key parameters of response from civil military coordination, urban search and rescue, information management, coordination to planning and others. The ERP approach was implemented in Nepal prior to the earthquake. Activities were also identified under a joint multi-year WFP-OCHA regional preparedness project aimed at improving regional readiness to augment national response to large-scale disasters. However, very few of the initiatives integrated environmental considerations into the preparedness activities covered. Even though the ERP approach mentions environment as a cross-cutting issue to be addressed, preparedness initiatives in Nepal overlooked many simple areas that could have better informed the response to the earthquake.<sup>5</sup> These include but are not limited to: establishing agreed debris waste management guidelines; linking local environmental institutions to the response structure; and ensuring the energy sector coordination mechanism is linked to the humanitarian response architecture.

### 2.3.2 Needs Assessment/Analysis

In the first days of the response, the Resident Coordinator's Office (RCO) and OCHA hosted the Nepal Earthquake Assessment Unit combining technical capacities OCHA, RCO, the Assessment Capacities Project (ACAPS), and MapAction. The unit worked to improve information sharing, harmonise data collection activities, and strengthen the quality of both data collected and analysis of humanitarian needs available to humanitarian responders. One of the initial Geographic Information Systems (GIS) staff surged had an environment background which reportedly facilitated access to environment data and helped include natural resource information in some of the early versions of the units products. However, mapping of natural resource elements was not a standard practice even though secondary data may have been available. As a preparedness measure greater attention to available natural resource related data (eg. forest cover, protected areas, ecologically sensitive areas, commercial wood lots) should be included as part of basic and fundamental operational data sets for emergency preparedness. This will help inform humanitarian responders of what natural resources may or may not be available and ecological areas of local and national importance.

The UNDAC team began to assemble within 24 hours of the initial response. The FEAT was not applied based on a perceived lack of industrial / infrastructure facilities and secondary data. In addition, based on existing analysis of past emergencies in the region, Health, Shelter and WASH assistance was prioritised and a full Multi-cluster Initial Rapid Assessment (MIRA) was avoided focusing resources on the delivery of assistance. Over the ensuing weeks a range of assessments were undertaken and by August 2016 over one hundred needs assessments were logged on the Assessment Unit's online registry. At the time of the assessments completed none focused on environment, however, some WASH, Debris, and Shelter related assessments did include some environmental considerations. In general, greater integration of environment into sectoral or multi-sectoral assessment should be encouraged.

By early June, MoSTE, with support from WWF Nepal, Hariyo Ban Program, university students and range of experts initiated a Rapid Environmental Assessment (REA) of the quake affected areas. The methodology was based on existing REA guidance and included a desk review, field observation, focus

5. Source: UNDAC/OCHA Mission Report, Nepal Earthquake 25 April-17 May 2015

group discussions, and consultations local NGOs and Government of Nepal institutions at all levels. The Nepal REA had high level of political recognition and has been one of the most comprehensive REAs in its design. The REA methodology used was based on existing guidance for post-disaster assessments, especially the *Environmental Needs Assessment in Post-Disaster Situations* with additional elements from the Guidelines for *Rapid Environmental Impact Assessment in Disasters*. The *Green Recovery and Reconstruction Toolkit (GRRT)* was also used to assess likely recovery and reconstruction impacts.

Though the REA was published in September 2015, early insights and recommendations shared at the ICC meeting in late June were well received and peaked interest of humanitarian partners. The concurrent draft environmental tip sheets produced for Food, Shelter, Health and WASH clusters raised awareness of environment issues amongst clusters members.

The PDNA was launched by late May 2015 to take stock of damage, loss and needs and provide a well-rounded view of the scale of devastation and outline a recovery strategy. There is a separate section concerning Environment and the PDNA highlights the importance of the Sendai Framework for Disaster Risk Reduction (SFDRR) adopted in March 2015 including a *move to working on integrated model of recovery which takes into account environmental factors, underlying vulnerabilities and community knowledge*.<sup>6</sup> The PDNA environment section also highlights three principles that should be applied to all sectors which the humanitarian community would do well to adapt and take into consideration: 1) *Ensure that reconstruction and recovery activities are environmentally sustainable, mindful of aspects such as recycle and reuse of debris; are appropriate to the region, and capable of withstanding future disasters, including those posed by climate change.* 2) *Enforce environmental impact assessment/initial environmental assessment during reconstruction in order to avoid future disasters.* 3) *Ensure that timber and fuel wood collection complies with existing forest management plans, and promote alternative energy and energy-efficient technologies to reduce pressure on forests.*<sup>7</sup>

Over the past decade a number of post-disaster environmental assessment tools have been developed and applied in a range of circumstances by a growing number of actors. As a result there

is a lack of a common understanding of available environmental assessment tools while a more coordinated approach ensuring complementarity amongst assessment tools is needed. In addition, past environmental assessments are not clearly linked to the coordination of humanitarian needs assessments and the humanitarian needs overview that follows. While in Nepal there was an attempt to integrate the REA process and findings into the humanitarian response more can be done to ensure this takes place earlier and consistently. The EHA partners should endorse the sequence of environment related assessments that are likely following a new or escalating largescale emergency (FEAT, REA, ENA) and affirm that in principle the REA and Framework for Assessing, Monitoring and Evaluating the Environment in Refugee-Related Operations (FRAME) should be considered current standard tools. In a larger emergency where a set of environment assessment tools are likely to be applied, early and strategic agreement amongst key stakeholders should be reached to operationally ensure: harmonization of assessment efforts, strong linkages to humanitarian response, and adequate technical and financial resources are available.

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6. Nepal Post Disaster Needs Assessment, July 2015.

7. Ibid, p54-55

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8. UNHCR recognized assessment tool for refugee camp settings, 2005.

### 2.3.3 Response planning and resource mobilisation

The revised Flash Appeal (June 2015) identified humanitarian assistance needs of US\$ 422 million to reach 2.8 million people. Of these there are US\$ 17 million in early recovery needs identified which highlight natural resource issues and the need to strengthen livelihood support programmes. However, there is no specific mention of natural resource and environmental concerns in the overview. As anticipated, there was no environmental screening (e.g. application of the Environment Marker) of the US\$ 422 million in projects identified. However, as reflected in the evaluation of cluster activities it is clear that environmental considerations have been made in a number of areas (Shelter, Food Security, WASH and Education). In future crisis the Flash Appeal and other humanitarian response plans could contain, at a minimum, a commitment to environmental issues.

This could be as a stand-alone commitment to specific cross-cutting issues in addition to being better reflected in post-disaster resilience narratives which increasingly appear in response planning documents.

A number of long-standing development partners have supported the Government of Nepal's natural resource management and environment programmes (eg. community forest users groups; local green government initiatives) over the past several years. These environmental champions in the donor development community provide an opportunity to advocate for stronger environmental considerations in the humanitarian response.



*The revised Flash Appeal identified humanitarian assistance needs of US\$ 422 million to reach 2.8 million people.*

# 3. Conclusions and recommendations

The study indicates that while there is generally a high level of awareness of the need to support environmental mainstreaming, more environmentally informed preparedness efforts could have significantly strengthened environmental considerations in the response to the Nepal earthquake. Over ten days the mission managed to meet up with a significant range of actors contributing to the response and participate in two field missions to IDP camps, relocation sites, and affected urban and rural areas near Kathmandu.

Post disaster assessments reflect that natural resources sustained considerable damage (eg. forest resources, arable land, hydrologic systems, eco-systems) which threaten the livelihoods, food security, and health of many vulnerable communities. Local capacity in the government, WWF and Hariyo Ban, managed to support priority environmental interventions such as the REA and provide environmental guidance to humanitarian clusters. However, these initiatives remained outside of the mainstream humanitarian response and only made small inroads through volunteering environmental guidance sheets in priority clusters. Stronger pre-quake engagement of environmental expertise in preparedness exercises would have enabled smoother engagement and uptake of environment issues in the response.

Awareness of environmental issues was generally high amongst cluster coordinators. All cluster coordinators noted the contributions, in meetings and in tip sheets, provided by environment expertise in the local Hariyo Ban programme as a positive contribution to their response. In addition, experienced local implementing partners, recognition and adherence to national rules and regulations, and awareness of potential risks all contributed to environmental considerations in the response. However, more can be done to build trust between local humanitarian and environment partners in response by including environment and natural resource experts in preparedness initiatives.

The Alternative Energy Promotion Centre was the main body coordinating the response in the energy sector working across ministries, the private sector, donors, and NGOs. However, the energy sector was not sufficiently linked to the international or national coordination structures in Nepal and energy strategies were developed outside planning processes such as the revision of the Flash Appeal.

While in Nepal there was an attempt to integrate the REA process and findings into the humanitarian response, more can be done to ensure this is an integral and predictable component initial humanitarian response.

Five key factors to strengthen environmental mainstreaming in rapid onset emergencies were identified based on the Nepal study:

- **Environment in preparedness:** Include environmental considerations in all facets of preparedness for response, not overlooking areas that can contribute to minimising impact and, make positive contributions to livelihoods and natural resources in future response (e.g. debris waste management guidelines agreed and in place, natural resource and protected area data sets available, Rapid Environmental Assessment tool agreed amongst appropriate actors, identification of local environment expertise - individuals and institutions). This will better inform preparedness measures while strengthening the relationship and trust between local humanitarian and environment partners.
- **Integrate local environmental expertise into preparedness and response:** Engage local environmental expertise in humanitarian action. The participation of World Wildlife Fund (WWF) Nepal in the Inter Cluster Coordination Group (ICC) in late June was referred to by a number of partners as the first significant step to put Environment on the response agenda. In follow-up, members of the Nepal Hariyo Ban Program supported the development and introduction of Environmental tip sheets for WASH, Shelter, Food and Education clusters which were highlighted as an asset and key reference for humanitarian partners. A wealth of local knowledge on environment and natural resource issues exists in local and international environmental institutions and is best placed to inform humanitarian action. Greater involvement of WWF, MoSTE, MoFSC and other key natural resource actors in emergency preparedness and response processes of OCHA, the HCT and national authorities is an effective means to ensure environmental considerations are better covered. The context specific environmental guidance WWF was able to provide to clusters was a practical solution to better inform response operations. As part of this effort a mapping of environmental expertise in high risk countries should be undertaken.

- Improve application of environmental assessment tools:** While in Nepal there was an attempt to integrate the Rapid Environmental Assessment (REA) process and findings into the humanitarian response, more consistent and earlier application of the REA process in future emergencies is key to laying the foundation for an environmentally informed response. The sequence of environment related assessments that are likely following a new or escalating emergency should be more widely recognized (Flash Environmental Assessment Tool (FEAT), REA, Environmental Needs Assessment (ENA)/ Post-Disaster Needs Assessment (PDNA)). In principle the REA and Framework for Assessing, Monitoring and Evaluating the Environment in Refugee-Related Operations (FRAME)<sup>9</sup> should be reviewed and put forward as standard tools for consideration in response operations. In a larger emergency where a set of assessment tools are likely to be applied, early and strategic agreement amongst key stakeholders should be reached to ensure: harmonization of environmental assessment efforts; strong linkages to humanitarian response and early recovery process; and adequate technical and financial resources are available to undertake and eventually implement recommendations.
- Better integration of energy sector into humanitarian architecture:** The importance of bringing the energy sector response into the national and international humanitarian architecture was highlighted in Nepal where distribution of several thousand institutional and household solar energy units could have been better linked to cluster response priorities (eg. Health and Education clusters). In emergency settings global best practice and guidance on energy, which are already articulated in initiatives such as SAFE, should be applied more consistently. In addition, the long-term renewable energy goals of Nepal and the significant reconstruction required after the earthquake warrants development of an energy strategy to improve access to household fuel and lighting using appropriate technologies and renewable energy in the humanitarian response.
- Further enhance environmental interoperability of surge mechanisms:** A significant number of rapid response mechanisms were triggered in the aftermath of the quake (including UNDAC teams, UN-CMCoord expertise, USAR teams). These mechanisms facilitate or directly provide support capacity which could be utilised to augment and strengthen the environmental response. A successful example is UNDAC teams' increased application of FEAT during response since the tool was introduced in UNDAC induction course curriculum in 2013. However, utilisation of deployed military assets and USAR teams have not been similarly tapped into yet may have additional capacity to complement environmental response efforts and partnerships with these and other response networks should be strengthened. This includes surged protection and gender capacity which have shared areas of concern with environment stakeholders when it comes to safe access to natural resources.

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9. UNHCR endorsed environmental assessment tool

[www.unocha.org/unesp](http://www.unocha.org/unesp)

[www.eecentre.org](http://www.eecentre.org)

[www.humanitarianresponse.info/environment](http://www.humanitarianresponse.info/environment)



## Contact

Joint UNEP/OCHA Environment Unit  
OCHA Emergency Services Branch  
Geneva, Switzerland

Email: [ochaunep@un.org](mailto:ochaunep@un.org)  
Phone: +41 22 917 2163

