



Expanding the Resource Network for Environmental Emergency Response

Note by the secretariat

Introduction

This paper has been prepared for the 8th meeting of the international Advisory Group on Environmental Emergencies (AGEE 8). It is intended to stimulate debate and discussion amongst AGEE participants, who are invited to provide feedback, as well as concrete suggestions, on how to achieve the goals for a strengthened system for environmental emergency response, particularly with regard to having a readily-available pool of diverse environmental emergency expertise (e.g. disaster waste management, dam integrity, slope stability) and equipment (e.g. sampling, monitoring, measuring) located in a wide variety of countries around the world.

This is essential not only for effectiveness and efficiency, but also in case of emergencies occurring during a period of travel restrictions – for example, in the event of a pandemic. Linguistic and cultural issues are relevant in this context. There is also the issue of equitable distribution of burden of providing assistance among countries, which to date has been primarily handled by traditional European and North American donors only.

Currently, the Joint UNEP/OCHA Environment Unit (Joint Environment Unit) benefits from excellent collaboration, bilaterally with several nations, and multilaterally through the European Commission's Monitoring and Information Centre (EC-MIC). The EC-MIC's 30 participating States are often called upon to provide the expertise and equipment needed to respond to environmental emergencies around the world. While this is indeed impressive, and demonstrates significant progress for the Joint Environment Unit, it is misleading, as only a very few countries in one geographic region ultimately provide assistance for the entire world. This distribution of expertise and equipment must be better distributed among all geographic regions of the world. The AGEE has recognized that collaboration could and should be much stronger with nations in other regions of the world, such as Africa, the Asia/Pacific region, and Latin America, and is welcoming initiatives to work with partner nations in these regions.

Strengthening the international system for environmental emergency response

In his report *Strengthening the international system for environmental emergency response* – prepared for the 7th meeting of the AGEE (AGEE 7) in June 2007, Dr. Piero Calvi-Pariseti outlined a vision of what the system would look like in an ‘ideal’ world in the year 2012. One of the goals that could be achieved by then would be that:

“Whenever specialized assistance is requested following a rapid FEAT¹ assessment, the Joint Environment Unit can count on sufficient capacity from supporting countries and organisations to deploy specialized expertise immediately.”

This goal was determined based on the following analysis:

Once the initial determination has been made by environmental generalists that a threat exists, there may be a need for specialized expertise. Such expertise may be beyond the competence of generalists and – as past experiences show – may involve a very broad range of disciplines. This poses challenges, including the fact that, so far, only a limited number of countries have provided experts for deployment through the multilateral system.

Among the group of countries that traditionally fund and support humanitarian operations, this study identified that only two have consistently provided environmental expertise to the Joint Environment Unit. Another small group has occasionally provided experts. A third group has never done so in the past but states they are definitely available and willing to do so in the future. Many of these countries have expressed the desire to intensify contacts with the Joint Environment Unit and to increase their participation in the multilateral system for response to environmental emergencies. The Joint Environment Unit should follow up on such contacts to capitalize on the donors’ expressed interest in playing a greater role. Interviews conducted with the Joint Environment Unit indicate that they themselves acknowledge doing a less-than-optimal amount of outreach to existing and potential donors.

There is also a question of equitable distribution of burden of providing assistance amongst member states, practical questions such as whether assistance can be provided in a sufficient array of languages, and whether it can be sourced from enough regions globally. There is, therefore, the need to go beyond “traditional” donors and seek support. in,

The international system translated to the national level

Many countries often refer to “internal” challenges as the main reason for limited involvement in responding to environmental emergencies. In order to effectively provide environmental expertise and equipment through the multilateral system, potential supporting countries should establish internal systems for the management of at least three interdependent resources:

- **A pool of environmental experts:** such experts may, for example, be found among government agencies dealing with environmental emergencies at the national level.
- **Sources of funding:** should be available for international emergency response operations through the Ministry of Foreign Affairs or through the government’s international development agency.

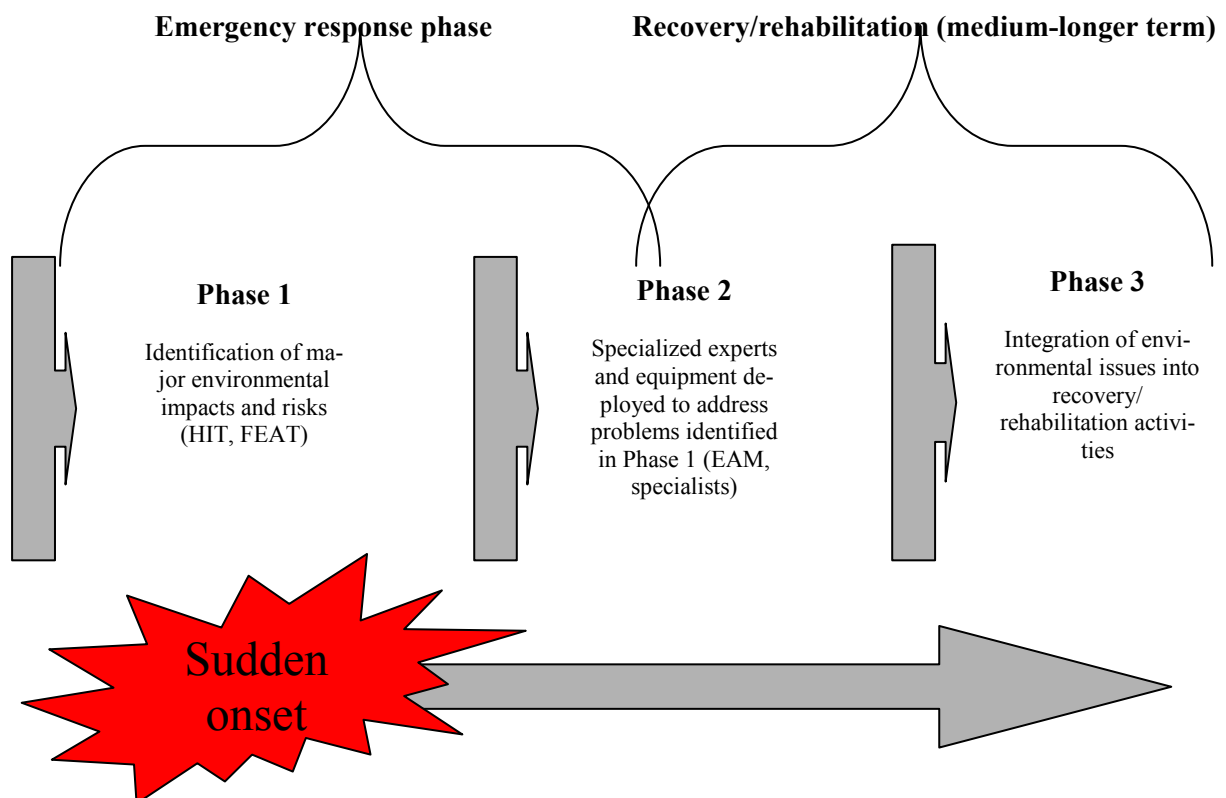
¹ Flash Environmental Assessment Tool

- **A mobilization procedure:** to manage the roster of experts; liaise with other governmental bodies; receive and process requests for assistance from the Joint Environment Unit; identify and deploy required experts/equipment; mobilize required funds.

In order to address these challenges, the Joint Environment Unit has developed draft guidelines for requesting, receiving, offering and providing of assistance in international environmental emergencies (see EU/AG/55). This guidance material is intended to assist countries in ensuring that their internal systems are better geared towards supporting the international response system. This includes the designation of a National Focal Point (NFP) to serve as the Joint Environment Unit's first point of contact and primary interlocutor. As the mandate of the Joint Environment Unit straddles environmental and humanitarian affairs, there often exists a lack of clarity at the national level as to who should have primary responsibility for responding to calls for international assistance during environmental emergencies. The sooner this critical issue is resolved by countries, the sooner the Joint Environment Unit can direct its calls for assistance efficiently and effectively through the appropriate channels, rather than responding on an *ad hoc* basis with general calls for assistance that may never reach the appropriate authorities.

The environmental emergency response model

Based on the experience of the Joint Environment Unit, the following model has been developed to illustrate three distinct phases in environmental emergency response activities.



The model is based on a scenario of a major sudden-onset natural disaster for which a United Nations Disaster Assessment and Coordination (UNDAC) team has been requested and deployed. The model is also applicable for industrial accidents and complex emergencies, for which the response would start in Phase Two of the model. The different phases are determined by the information available and type of assistance needed.

When international assistance is requested for a sudden-onset natural disaster, the situation on the ground is often chaotic. Little information is available on how many people have been affected, where the most affected zones are, who is in charge of response, and what national capacity is available. Numerous questions need to be addressed, and the urgency of the situation makes the taking of well-informed decisions all the more challenging. This is also true for environmental emergency response. However, based on response experiences to-date, a number of roles and tools have been identified to provide answers and attempt to create order during an often overwhelming and chaotic disaster situation.

Phase 1: Identification

When an UNDAC team is deployed to an affected country, the Joint Environment Unit will use its Hazard Identification Tool (HIT) to screen for any 'Big and Obvious' secondary environmental hazards and impacts. The HIT will also help in deciding whether there is a need to deploy an UNDAC-trained environmental expert or to associate an environmental expert to the team to undertake an on-the-ground rapid environmental assessment, using the Flash Environmental Assessment Tool (FEAT). During this phase of the emergency, a general background in environment, including some experience in dealing with hazardous substances, will be sufficient. In some instances, there may be need for specific expertise, as with disaster waste management, for example.

Phase 2: Specialized assistance

Once the situation following the onset of the natural disaster becomes clearer, there will be a shift from, for example, UNDAC teams, towards a need for specialized assistance in specific domains. It is in this second phase that specialists (e.g. chemists, disaster waste managers, engineers) are often needed, following the outcomes and findings of the FEAT.

If there is a need for more detailed onsite sampling and analysis, the Dutch Environmental Assessment Module (EAM) can be deployed (through the International Humanitarian Partnership) to determine which hazardous substances, and in what concentrations, have been released. Together with the back-up system Bot-Mi², suggestions for prevention, mitigation, and clean-up could be provided.

In the event, for example, of an oil spill, a train accident involving toxic substances, or the bombing of an industrial facility in a conflict situation, the model is applicable from Phase Two, as the type of industry and/or substances involved are already known, and there is no need for a general assessment or generalist.

The type of expertise required for Phase Two is very hard to define in advance, and will differ from case to case. In its 15 years of response experience, the Joint Environment Unit has received requests to deploy experts in a broad array of field of expertise (e.g. mining tailings, pesticides, cyanide, disaster waste management), underscoring the need for a diverse and robust expert network in order to meet the many requirements in environmental emergency response.

Phase 3: Recovery and rehabilitation

Once immediate emergency assistance has been provided, outstanding recovery needs are often still enormous. The wounded have received their initial treatment, but what about the collapsed hospital? It is in this phase that a hand-over takes place to local authorities and international partners such as the UNEP Post-Conflict and Disaster Management Branch, and

² Beleidsondersteunend team milieu-incidenten, the Dutch advisory team on environmental emergencies.

the UN Development Programme, who are best qualified and have developed specific expertise and methodologies to assist a country in getting back on its feet. During this phase, there is often a strong focus on building capacity of individuals and institutions to strengthen a country's coping mechanisms in case a similar disaster strikes again.

This model is obviously only a simplified reflection of the very complex reality of environmental emergency response and its case-by-case specificities. Nevertheless, it provides a logical break-down and can help in understanding the different needs that exist for preparedness and response to environmental emergencies.

Strengthening activities

Following AGEE 7, the Joint Environment Unit has undertaken a number of targeted outreach activities with potential supporting countries in an effort to widen its base of deployable experts and equipment (see also EU/AG/54).

For example, a number of detailed briefings on the work of the Joint Environment Unit were provided to diplomatic staff from Permanent Missions to the United Nations in Geneva. Furthermore, visiting government officials were invited for meetings and briefings with the Joint Environment Unit during the UNDAC Advisory Board meeting and a meeting of members of the UN Economic Commission for Europe's Convention on the Transboundary Effects of Industrial Accidents.

Particularly noteworthy were the meetings with the newly established Crisis Centre of the French Ministry of Foreign and European Affairs, who have now agreed to be the focal point in France for environmental emergency response and join the network of supporting countries. This should greatly improve the capacity to meet the need for Francophone environmental experts to provide assistance worldwide.

In addition, the Chair of the AGEE and Head of the Crisis Management Department of the Dutch Ministry of Housing, Spatial Planning and Environment, accompanied by a staff member of the Joint Environment Unit, visited Singapore Civil Defense Force in February of 2009 to discuss opportunities of Singapore joining the network of supporting countries for environmental emergency response.

Cooperation between the Joint Environment Unit and the EC-MIC has increased considerably in recent years. It is a partnership that dates back to 2004, when the European Commission (DG-Environment and DG-ECHO) and OCHA engaged in an Exchange of Letters and Standing Operating Procedures, with the aim of maximizing the use of available resources, avoiding duplication, and better supporting local governments and affected communities. Both parties agreed to maintain dialogue at policy and operational levels; to ensure complementarity in the planning and delivery of relief assistance; and to cooperate in preparedness and response, taking into account internationally agreed standards and principles.

In December 2005, a meeting was held between the Joint Environment Unit and the EC-MIC, during which informal interface procedures were agreed whereby each entity would keep the other informed on all developments concerning environmental emergencies for which they are activated. In the event that the Joint Environment Unit would require environmental expertise for assessment missions, a detailed request would be sent to the EC-MIC, which would search for the necessary expertise and provide the Joint Environment Unit with the reply. If the Joint Environment Unit assessment mission were to proceed, experts identified by the EC-MIC would participate in it, and the cost for the EC experts would be born by the EC-MIC.

Practical cooperation between the EC-MIC and the Joint Environment Unit began in Indonesia following the 27 May 2006 earthquake centered in Jogjakarta Province, which killed 5,782 people and left some 36,299 persons injured. The EC-MIC and the Joint Environment Unit both assisted the Government of Indonesia, including through the conducting of rapid environmental assessment activities, and subsequently made a joint Offer of Assistance to provide dam integrity assessment services for four dams potentially affected by the earthquake.

Later that year, the EC-MIC and the Joint Environment Unit came together again, this time during the environmental emergency response to the Lebanon crisis, following open hostilities that erupted between Israel and *Hezbollah*, with heavy aerial bombardment of Lebanon, especially south Lebanon and south Beirut. The conflict resulted in loss of life, injuries and considerable damage to Lebanese industrial installations and infrastructure. The conflict had immediate and longer-term environmental impacts. The Joint Environment Unit focused particular attention on supporting a coordination centre for the major oil spill that resulted from the bombing of the fuel storage at the Jiyeh power plant. The EC-MIC provided numerous experts in the field, where onsite cooperation and coordination with the Joint Environment Unit was excellent.

Following the oil spill disaster that took place in the Kerch Strait on 11 November 2007, the EC-MIC offered assistance to both the Ukrainian and Russian authorities, which was accepted by Ukrainian authorities. The EC-MIC invited a member of the Joint Environment Unit to join the mission in order to provide the international context and further develop working relations. The team was in Ukraine from 18 to 24 November 2007.

The 'Hebei Spirit' oil tanker spill off the coast of the Republic of Korea in December 2007 is a model of coordination between the UN and the European Commission in environmental emergencies. Coordination started at the onset of the emergency, and culminated in a joint offer of assistance and deployment of a team. On the ground, experts used the same on-site coordination mechanism, worked as a team, and made the best possible use of assets and donor resources. This experience has set the standards high for other types of cooperation between the UN and Regional Bodies.

Cooperation between the Joint Environment Unit and the EC-MIC in response to the passenger ferry containing a large cargo of highly toxic pesticides that capsized in the Philippines in June 2008 further demonstrated that it is possible to put resources together and increase output. Such partnerships and synergy help make international response faster and more effective, with the ultimate objective of supporting the populations in need of help.

Following the devastation caused in Myanmar by Cyclone Nargis, cooperation between UNDAC (and, by extension, the Joint Environment Unit) and the Association of Southeast Asian Nations (ASEAN) took root, and now presents a solid foundation upon which to build. To this end, a UNEP environmental expert from the Asian region was included as an UNDAC team member during the ASEAN Regional Disaster Emergency Response Simulation Exercise (ARDEX-08), held from 24 to 29 August 2008 at the Map Ta Phut Industrial Estate in the Rayong Province, Thailand.

Through the pilot Environmental Emergencies Training (see EU/AG/56) held in August 2008, nine additional Swedish associate environmental experts have now been added to Sweden's internal roster of environmental experts (now totaling 31), and 19 associate environmental experts have been added by the Netherlands. Meanwhile, an additional 15 UN-

DAC-trained environmental experts are also available as mission-ready deployable personnel.

Also in August 2008, the Government of the Netherlands presented the Environmental Assessment Module (EAM), an innovative mobile laboratory developed by the Netherlands within the framework of the International Humanitarian Partnership and following recommendations by the AGEE, to support international response to environmental emergencies. The EAM can be rapidly deployed for disasters involving hazardous substances, together with the relevant technical expertise and two fully-equipped off-road vehicles: one containing a mobile measurement and analysis unit, the other containing materials for logistical support, such as satellite equipment and GPS. The entire EAM can be transported in a cargo aircraft. However, being a modular unit, equipment relevant to a given emergency can be selected and deployed individually. The EAM can be deployed at the request of the UN or other international organizations. Countries themselves may also directly request assistance from the Netherlands. A primary client of the EAM will be the Joint Environment Unit, thereby ensuring a reliable source of rapid response capacity.

Thus, the AGEE and the Joint Environment Unit can take pride in a great many achievements since AGEE 7. The challenge for AGEE 8 and the Joint Environment Unit will be to build upon and broaden these foundations.

Overview of current capacities to deploy experts

The Joint Environment Unit has, over the years, built a network of supporting countries and organizations. In particular, the capacity to respond during Phase One (the generalists) is now well covered, with a total of more than 40 generalists (UNDAC-trained, or trained as associate expert). More than half of these experts have thus far been trained in the FEAT methodology.

Overview of UNDAC-trained Environmental experts

Through National Governments	Through UNEP
<ul style="list-style-type: none"> ▪ Brazil (2) ▪ Denmark (1) ▪ Netherlands (3) ▪ Saudi Arabia (1) ▪ Sweden (1) ▪ Switzerland (1) 	<ul style="list-style-type: none"> ▪ Division of Industry, Technology and Economics (2) ▪ Post-Conflict and Disaster Management Branch (2) ▪ Regional Office for Latin America and the Caribbean (1) ▪ Joint UNEP/OCHA Environment Unit (3)

However, the need for experts during Phase Two persists. In an effort to address this, the Joint Environment Unit has been reaching out to states on a regular basis. It has also developed generic Terms of Reference for some of the most-often requested types of expertise to assist supporting countries in their national preparations for providing international disaster assistance, and to shorten the time needed to identify experts once disaster has struck. In the annexes to this paper, draft Terms of Reference have been attached for disaster waste management, which is often needed in Phase One, as well (Annex 1), and slope stability/geohazards experts (Annex 2). The Joint Environment Unit also intends to develop a draft Terms of Reference for dam integrity expertise.

Regardless of phase, the heart of the matter is helping countries to better organize themselves internally, so that when disaster strikes and specialists are needed, they can be deployed as soon as possible thereafter.

Major progress in expanding the Joint Environment Unit's network of expertise has been made in cooperation with the EC-MIC, with whom the Joint Environment Unit shares all requests for international environmental emergency assistance. If the presidency of the European Union agrees, the civil protection mechanism will be mobilized, and the request shared with all 31 EC-MIC participating States. In this way, the pool of supporting countries is greatly enhanced, making efficient use of a well-functioning regional cooperation mechanism.

Meanwhile, for the response to forest fires, the Joint Environment Unit works closely with the expert network of the Global Fire Monitoring Centre (GFMC). Through the GFMC's network, the Joint Environment Unit has access to forest and wildland fire experts around the world.

Conclusions and challenges

While notable progress has been made in increasing the Joint Environment Unit's network of deployable experts and equipment, the fact remains that the vast majority of this increase has been concentrated among a small number of traditional humanitarian donor nations. Although the seeds of collaboration have been planted and in some cases taken root in other areas of the world, such as Africa, the Asia/Pacific region, and Latin America, great strides have yet to be made. In light of certain global trends, the need for a better distribution of environmental emergency service providers has never been more important.

For example, given ever-increasing industrialization worldwide, we must face the increasing likelihood of environmental emergencies occurring, often in nations where capacity to prepare for and respond to such disasters may not be sufficient. Also, given the ever-increasing links of the global community, environmental emergencies know no boundaries, and a disaster in one country can have direct and indirect impacts and implications for other nations. Furthermore, the issue of climate change must also be faced. Increased numbers and intensity of weather-related natural disasters have been observed in recent years – most often affecting areas of the world that are least capable of responding to such emergencies – with much evidence linking this increase to global warming and climate change.

The AGEE and the Joint Environment Unit must now meet these challenges by expanding the global network of readily available and deployable expertise and equipment to respond to environmental emergencies – in particular, in the aforementioned Phases One and Two of the response model.

The AGEE is therefore invited to consider and discuss the following:

- How can the AGEE best address the challenges of establishing a better geographical distribution of its resource network (expertise and equipment) in regions such as Africa, Asia/Pacific and Latin America?
- Can AGEE participants offer specific solutions to help the Joint Environment Unit to develop the network of environmental emergency responders in nations and regions across the globe?

Annex 1

* D R A F T *

GENERIC TERMS OF REFERENCE
Disaster Waste Management Expert
Joint UNEP/OCHA Environment Unit

Context

Disasters often generate large volumes of disaster waste, comprised of a mixture of soil and sediments, building rubble, vegetation, municipal waste, hazardous materials (including asbestos and healthcare waste), as well as human and animal remains.

This combination of diverse waste materials poses a serious risk to human health from biological, chemical and physical sources, and may also impede urgent humanitarian access routes. Disaster waste an additional burden on a nation or community already struggling to cope, and often overwhelms existing waste management services and infrastructure. Experiences from past disasters show that wrong handling of waste in the immediate aftermath of a disaster may be the cause for future environmental problems. Disaster waste management is an integrated approach where early interventions may lead to more effective response and recovery operations with less impact on the environment and better utilization of natural resources

In environmental emergencies and natural disasters with major environmental impacts, the Joint UNEP/OCHA Environment Unit (JEU) can mobilize specialized assessment missions and/or deploy associate environmental experts with the United Nations Disaster Assessment and Coordination (UNDAC) team.

The following describes the key responsibilities and required background and skills of these disaster waste management experts. More specific details will be provided according to the needs of each emergency.

Responsibilities and expected outputs

Undertake, in close collaboration with the relevant local and national authorities and international emergency responders, an overall assessment of the disaster waste situation, including:

- Identify any needs for further technical assistance, as well as medium and long term needs for capacity building;
- Assess the existing local capacity for addressing disaster waste management issues;
- Identify specific risks posed by unexploded ordnances, asbestos, health care waste, hazardous materials;
- Provide on-site practical advice and guidance to the relevant local authorities by proposing solutions to minimize environmental and health impacts of disaster waste;
- Assist local authorities in the development of a disaster waste management plan/system, including guidance on proper management of existing waste disposal sites, logistics of waste collection services, and optimization of recycling and re-use options;

- Liaise and coordinate with other mechanisms and entities involved in disaster waste issues like the IASC clusters for Water, Sanitation and Hygiene, Shelter and Early Recovery, and WHO, UNDP and UNICEF;
- Pay particular attention to waste collection and disposal in camps, especially concerning household waste, sanitation, drinking water and recycling;
- Provide advice and guidance to national and international aid organizations with disaster waste management issues if requested;
- Disseminate and promote the use of the Emergency Waste Management Guidelines of the Joint UNEP/OCHA Environment Unit
- Communicate rapidly and regularly all findings to the UNDAC team, the local authorities, the United Nations Resident Coordinator, and the JEU as appropriate;
- Document, in electronic form, the assessment results, recommendations, and mitigation measures implemented, if applicable.

Note: Contact with media, including interviews, should only be undertaken with consent of the government and in consultation with the UNDAC team, the United Nations Resident Coordinator and the JEU.

Education and work experience

- University degree in a relevant discipline, such as environmental science and/or civil engineering;
- Background in solid and/or hazardous waste management issues with at least ten years of experience,
- Experience in environmental impact/risks assessment;
- Working experience in a disaster affected environment and/or developing countries an asset;
- Ability to work under stressful circumstances in hardship conditions for up to 3 weeks;
- Fluency in English, French or Spanish depending to the country affected;
- Knowledge of MS Windows and MS Office and ability to operate standard IT and communications equipment.

Annex 2

*** D R A F T ***
GENERIC TERMS OF REFERENCE
Geohazards Expert
Joint UNEP/OCHA Environment Unit

Natural disasters such as earthquakes and floods often result in significant secondary environmental impacts including land- and mudslides. These secondary impacts can pose immediate, life-threatening risks to humans (both local communities and responders), as well as longer-term challenges. Therefore, a key element of humanitarian response is the rapid risk assessment of GeoHazards and the mitigation thereof.

Responsibilities

- In close cooperation with national authorities and UN response entities, identify and assess any potential risks from land- and mudslides following a natural disaster;
- Work with national and international emergency responders to address acute life threatening situations derived from land- and mudslides;
- Identify any outstanding expertise or equipment needs to address any immediate risks and impacts;
- Ensure a hand-over from relief to recovery, by informing responsible actors at national and international level of issues such as including monitoring, reforestation, and engineering requirements that need to be addressed in the (early) recovery phase.

Expected Actions

- Gather, consolidate and analyze assessment data (using remote sensing where applicable) and provide recommendations to the national and local authorities and the UN Resident Coordinator (or equivalent) to minimize and/or mitigate secondary impacts and promote the integration of appropriate actions into the overall disaster response strategy;
- Communicate rapidly and regularly all findings to national authorities, as well as the Joint Environment Unit, emphasizing the possible need for additional specialized expertise and/or additional equipment as required;
- Identify, where applicable, pre-existing contributing environmental factors to the disasters (e.g. deforestation, poor urban planning, lack of prevention and preparedness);

Note: Contact with media, including interviews, will only be undertaken with consent of the UNDAC team leader and/or UN Resident Coordinator.

Qualifications and skills

- Solid background in Applied Geosciences, Civil Engineering, Geology, Geomorphology, Geohydrology, Risk Engineering or combination thereof.
- Ability to distinguish immediate response actions from medium to long-term mitigation, rehabilitation and reconstruction activities;
- Familiarity with rapid risk assessment of geohazards and ability to conduct rapid assessments in a natural disasters and emergency context;

- Familiarity with management of operational support functions including telecommunications, logistics and basic field security;
- Ability to coordinate with international and local agencies involved in disaster response;
- Ability to rapidly assess basic needs and local capacities;
- High motivation, coupled with an ability to improvise effectively in rapidly changing situations with minimal guidance and support;
- Team skills required for working in a multi-disciplinary, multi-national team in field conditions of hardship with an ability to assume authority as and when needed;
- Availability for short-notice mobilization (within 6 to 48 hours) and must be able to stay in the field for up to 3 weeks;
- Knowledge of MS Windows and MS Office and ability to operate standard IT and communications equipment.

DRAFT