

**OCHA**

Office for the  
Coordination of  
Humanitarian Affairs



United Nations  
Environment  
Programme

# **International Environmental Emergency Response**

## **Major Activities 2005-2007**



### **Joint UNEP/OCHA Environment Unit**



**UNITED  
NATIONS**

# **International Environmental Emergency Response**

**Major Activities 2005-2007**

**EU/AG/45**

**Joint UNEP/OCHA Environment Unit**



**UNITED NATIONS**  
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## **Note by the Secretariat**

This document lists the major activities of the Joint UNEP/OCHA Environment Unit in 2005-2007 in order to provide feedback and accountability to the recommendations made by the 6<sup>th</sup> meeting of the Advisory Group on Environmental Emergencies (AGEE) in June 2005.

The Joint UNEP/OCHA Environment Unit (Joint Environment Unit) is the United Nations emergency response mechanism that mobilizes international assistance to countries facing environmental emergencies and natural disasters with significant environmental impacts. It is a partnership between the United Nations Environment Programme (UNEP) and the UN Office for the Coordination of Humanitarian Affairs (OCHA).

Based on the Joint Environment Unit's work plan and strategic priorities for 2005-2007, endorsed at the 6<sup>th</sup> meeting of the AGEE, the Joint Environment Unit focussed on:

1. Mobilizing and coordinating assistance to environmental emergency-affected countries
2. Implementing the global Environmental Emergencies Partnership and capacity building activities
3. Training and awareness raising activities

Geneva, 8<sup>th</sup> of May 2007



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# **Chapter 1: Mobilization and coordination of assistance**

The core function of the Joint Environment Unit is to mobilize and coordinate urgent international assistance to affected countries, when domestic capacity is exceeded or additional response resources and specialized expertise are required. During the period 2005-2007, the Joint Environment Unit continued to ensure timely and effective response to requests for international assistance from countries affected by environmental emergencies. In particular, the Joint Environment Unit monitored, acted as a broker or provided assistance in no less than 25 natural disasters, man-made disasters and/or complex emergencies.

### Forest fires – Peru (July-August 2005)

In July and August 2005, forest fires burned 30,000 hectares of land in the Junin Department of Peru and affected an estimated 600 people. In response, the Joint Environment Unit facilitated, in cooperation with the Global Fire Monitoring Centre (GFMC), the deployment of an expert to undertake a fire assessment and provide recommendations for abatement. The fire expert – a consultant to UNDP and member of the UN International Strategy



for Disaster Reduction's (ISDR) Regional South America Wildland Fire Network – identified considerable damage to the local environment. While there was no need for further international environmental assistance, recommendations were made to increase the national response preparedness activities. The experiences from Peru were then used as an input into the '*Strategy for Cooperation in Fire Management in South America*'. This strategy, developed jointly by GFMC and the Food and Agriculture Organization, addresses the prevention, preparedness and suppression of wildfires in the region through bilateral and regional agreements.

### Fires – Indonesia (August 2005)



In August 2005, fires were deliberately set to clear forests and peat lands to allow for their conversion to agricultural lands. They resulted in serious smoke pollution, causing concerns for human health and security in the region. The Joint Environment Unit cooperated with the GFMC and the Association of South East Asian Nations (ASEAN) to monitor and report on the situation to the international humanitarian community. OCHA provided updates through situation reports, and the GFMC published satellite imagery and fire assessments.

A staff member of the Joint Environment Unit traveled to Indonesia to explore opportunities for international cooperation on the recurring fire and haze problems. Although no request for specialized international assistance was received, discussions with ASEAN resulted in an agreement to jointly prepare a refresher-training course for the ASEAN panel of fire experts. The Joint Environment Unit, together with the GFMC and OCHA's Regional Office for Asia and the Pacific, also agreed to develop an assessment methodology based on the experience of ASEAN member states.

### Potential dam collapse – Cameroon (August- September 2005)

Continuing erosion of a natural dam holding back Lake Nyos put the dam at risk of potential collapse, according to media reports in July 2005. Such a collapse could have led to severe flooding in the Nyos Valley below the dam, and affected an estimated 10,000 people in Cameroon and Nigeria. Upon request from the Ministry of Territorial Administration and Decentralization of Cameroon, the Joint Environment Unit mobilized two experts from the Ministry of Transport, Public Works and Water Management of the Netherlands to assess the stability of the dam and provide practical recommendations to prevent its collapse. The team estimated that a breach of the natural dam is imminent within the next 10 years, with a high probability for it to occur within the next 5 years. A breach could lead to the release of a cloud of carbon dioxide. A similar cloud from Lake Nyos killed 1,700 people in 1986.

The assessment report contained detailed recommendations to prevent dam collapse. Following the hand-over to the UN country team and based on the findings of the study, the UN country team, together with national authorities, developed a long-term integrated mitigation and rehabilitation plan to deal with both the dam, and the return of the community displaced from the 1986 disaster.

### South Asia Earthquake – Pakistan (October 2005)

On 8 October 2005, an earthquake measuring 7.6 on the Richter scale struck northern Pakistan, India and Afghanistan. The earthquake and aftershocks caused thousands of deaths and the destruction of infrastructure including medical facilities, government buildings and schools. Casualty numbers reported: more than 73,000 dead and almost 70,000 people injured. An estimated 3.3 million people were left homeless.

The response of the Joint Environment Unit occurred in three phases.

**First,** it ensured that the United Nations Disaster Assessment and Coordination (UNDAC) team, sent at the request of the Government of Pakistan, included two UNDAC-trained environmental generalists (a Swiss environmental expert and a staff member of the Joint Environment Unit). They conducted a rapid environmental assessment (REA) and identified acute environmental issues, including waste management problems, slope instability, and threats due to deforestation, for example erosion leading to more slope instability and longer-term livelihood and economic development risks. These findings were communicated to the international community through OCHA Situation Reports.



**Second,** to address the issues found through the REA, the JEU deployed four experts to



Pakistan to provide practical advice, solutions and technical support. The Swiss Agency for Development and Cooperation (SDC) and the Swedish Rescue Services Agency (SRSA) each deployed an emergency waste management expert through the Joint Environment Unit. The experts developed waste management and health care waste guidelines in cooperation with WHO and the Joint Environment Unit. These guidelines were widely distributed together with *“Do’s and don’ts for waste management”* documents and *“Do’s and Don’ts for Health Care Waste”*. The experts also provided information on the improvement of solid waste collection and disposal to relevant cluster-lead agencies (UNICEF, WHO) and local authorities.



The SDC provided, through the Joint Environment Unit, a slope stabilization expert to investigate and advise on additional risks from landslides and mudslides. The expert worked closely with the Pakistan Army Corps of Engineers, providing technical advice and briefings to a wide range of local, regional and national authorities and to international organizations and NGOs. Recommendations were made to assess the state of road clearance and reconstruction regularly and to undertake mitigation measures at the Hattian Dam to reduce the risk of flooding.

The SDC also provided an expert in forestry to advise authorities on how to limit permanent damage to forests in the area, which were being cut for shelter and fuel by survivors trying to cope with harsh winter conditions. Immediate mitigation measures were adopted in the ongoing relief operation to promote the sustainable use of the scarce natural resources. Preliminary findings were also included in the Early Recovery Needs Assessment presented at the international donor conference in Islamabad on 19 November 2005.

Several lessons were learned by the Joint Environment Unit from the response to the South Asia earthquake. Most importantly, overall response timing and sequencing was effective. The Joint Environment Unit ensured that within days of issues being identified through the REA, additional experts were deployed to conduct further assessments, and, most importantly, to provide practical advice and solutions. This sequencing strategy should be applied in the future when needed.

The **third** phase was a transition and hand-over to UNEP’s Disaster Management Branch, which occurred once the experts deployed through the Joint Environment Unit departed..

### **Hurricane Stan – Guatemala (October 2005)**

In October 2005, Hurricane Stan passed over the southern coast and western highlands of Guatemala. Due to torrential rains, flooding and mudslides ensued in many parts of the country, causing loss of life and injury. As of 21 October, the death toll stood at 664, while 844 people were still missing. An estimated 9000 dwellings were destroyed.

The Joint Environment Unit ensured the inclusion of an UNDAC-trained environmental

expert from Brazil in the UNDAC team. The expert conducted his work through meetings with various government ministries and field assessment trips. The Joint Environment Unit released an REA report for Guatemala that identified possible risks such as the pollution of surface water, animal carcasses, erosion, hazardous materials and shelter and waste management. Recommendations included the thorough testing of groundwater supplies in affected areas, and an assessment for both erosion, and areas where significant soil movement is a risk to discover any 'hotspots' likely to threaten human life or livelihoods. A need was identified to monitor and evaluate the temporary camps of the displaced population and to develop plans to ensure adequate sanitation and waste management. The mission report was intended for decision-makers in Guatemala, potential donors and international community organizations interested in environmental problems arising in Guatemala from Hurricane Stan.

### **Songhua River Spill – China (November- December 2005)**

On 13 November 2005, an explosion occurred at a petrochemical plant of the Jilin Petrochemical Corporation in Jilin Province, China. The explosion led to a spill of an estimated 100 tons of toxic substances made up of a mixture of benzene, aniline and nitrobenzene. The pollution subsequently entered the Songhua River, which joins the Heilongjiang River. The Heilongjiang River forms a natural border with the Russian Federation and continues in the Russian Federation as the Amur River



River before flowing into the Sea of Okhotsk. The Songhua River Spill is probably one of the largest transboundary chemical incidents in a river system in recent years. The Joint Environment Unit offered assistance to the governments of China and Russia. Consequently, the Joint Environment Unit prepared extensively for an anticipated request to conduct an expert assessment. Experts and mobile analysis equipment from Switzerland, Sweden and the Netherlands were put on stand-by until authorities of both countries eventually declined the offer of assistance.

The Chinese State Environmental Protection Administration (SEPA) invited an expert team from UNEP to the affected area. The Joint Environment Unit was invited to participate. The mission team visited the affected area and held discussions with the authorities involved, but no water samples were taken. The mission report, shared with Chinese authorities, included recommendations to establish a joint river basin commission and to undertake a lessons-learned exercise.

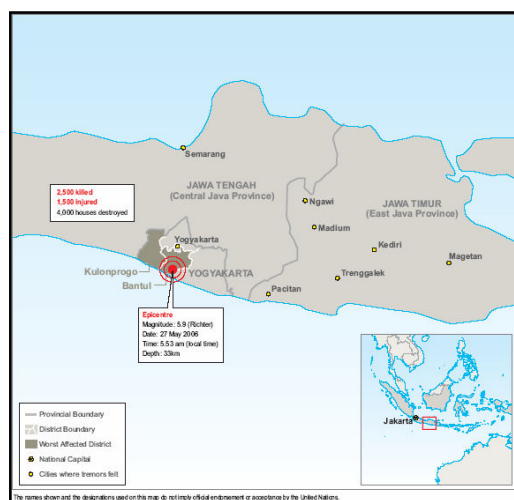
## Oil Spill – Philippines (February 2006)

In December 2005, an oil spill affected the coasts of the central Philippines. The Joint Environment Unit monitored the situation and issued situation reports to keep stakeholders informed of developments and initiated, in close collaboration with UNOSAT, the production of satellite images provided to national authorities, other UN agencies and non-governmental organizations to support decision-making. There was no need for additional international assistance through the Joint Environment Unit.

## Heavy rains/floods – Suriname (May 2006)

Torrential rains in May 2006 in Suriname led to the flooding of approximately 25,000 to 30,000 square km. At the request of national authorities, OCHA deployed an UNDAC team. An UNDAC-trained environmental expert from the Netherlands was deployed as part of the UNDAC team and carried out an REA, which focused on identifying potential hazardous materials being released from industrial facilities, mining, hydrocarbon storage, and sewage/drinking water facilities. The REA was supported, for the first time, by the Dutch integrated response system the '*Environmental Accident – Policy Supporting Team*' (Bot-Mi). With this support, a rapid desktop screening of potential secondary risk was carried out to aid the UNDAC team and national authorities. There were no acute secondary risks associated with the floods and there was no need for follow-up activities through the Joint Environment Unit.

## Yogyakarta Earthquake – Indonesia (27 May 2006)



On 27 May, an earthquake with a magnitude of 5.9 on the Richter scale occurred in Yogyakarta Province on the Indonesian island of Java. More than 5,100 people died in the earthquake, with approximately 8,500 to 20,000 injured. An estimated 60,000 houses were either destroyed or damaged, leaving close to 200,000 people homeless.

An environmental expert, deployed with the Swiss Agency for Development and Cooperation (SDC), carried out a rapid environmental assessment upon the request of the Joint Environment Unit. No acute life-threatening environmental issues were identified. Assessment results were shared with relevant agencies by the Joint Environment Unit. A loss and damage assessment led by Bappenas (the National Development Planning Agency of Indonesia) also included waste management and other environmental recovery issues.



### **Mt. Merapi – Indonesia (July 2006)**

The UN team responding to the Yogyakarta earthquake (see above) raised concerns about the potential eruption of the Mt. Merapi Volcano, which was near the earthquake's epicenter and had showed signs of intensified activity. As a result, the UN country team requested that the Joint Environment Unit explore options to deploy experts to identify and assess these risks.

The Monitoring and Information Centre (MIC) of the European Commission had already deployed 4 Italian volcanologists for this purpose. Through the signing of a Memorandum of Understanding, it was agreed that, with the support of the Italian Government, the volcanologists would extend their stay and support the work of the UN. This practical cooperation between the MIC and the Joint Environment Unit provides an example to follow for future joint activities.

### **Mud Volcano – Indonesia (June-July 2006)**

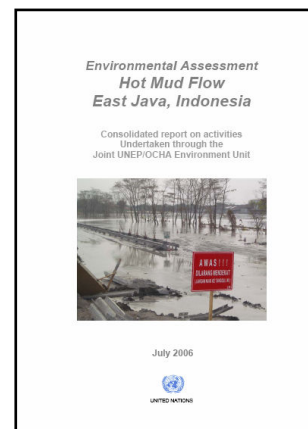


Since 29 May 2006, a mud volcano has been emitting hot mud in the Sidoarjo district of East Java, Indonesia (to date, the mud volcano continues to emit hot mud). The mud flooded 4 adjacent villages, displacing nearly 7,000 people. Almost 12,000 people sought medical treatment, mainly for ailments related to exposure to hydrogen sulphide gas released with the mud.

Upon request of the Indonesian Ministry of Environment, OCHA, in collaboration with the Joint Environment Unit, deployed an UNDAC team with environmental experts from Switzerland and the Netherlands to provide technical assistance. The Netherlands provided sampling and measuring equipment and two associated experts to the team. The objective was to determine the toxicity of the mud and recommend remediation measures.

For the second time in the year, an UNDAC mission received support from BOT-Mi. The experts concluded that the impact on human health and the environment was low due to containment of the mud in above-ground basins. The basins, however, were not considered a sustainable solution. It was identified that a sudden release of the mud from the basins into an aquatic environment would kill aquatic ecosystems and have serious humanitarian consequences. It was recommended to develop a medium term strategy for the management of the mud, as expectations were that the mud volcano would continue emitting mud for a long period.

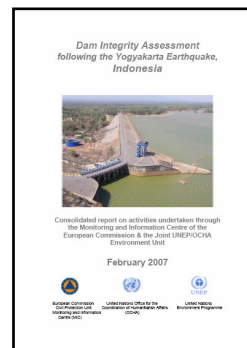
Following the presentation of findings by the UN Resident Coordinator to the Minister of Environment, support was



requested for the implementation of the recommendations. The government of Switzerland provided an expert for this purpose.

### **Dam integrity assessment – Indonesia (July-August 2006)**

In the aftermath of the Yogyakarta earthquake of 27 May 2006 (see above), there was concern that four embankment dams in the affected area were damaged – the Sermo, the Parangjoho, the Wonogiri and the Song Putri dams. The Monitoring and Information Center of the European Commission and the Joint Environment Unit decided to offer assistance jointly for a dam stability assessment. The Directorate General of Water Resources of the Ministry of Public Works responded positively to this offer and, subsequently, Austria and Norway offered to deploy one expert each through the MIC to conduct the assessment.



The experts concluded that, although in need of repair (in particular the monitoring equipment), the dams appeared to pose no major threat to the communities located below the dams. The situation, however, required additional monitoring in the next rainy season.

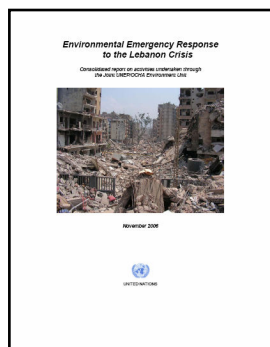
### **Lebanon Crisis 1 - oil spill effects in Syria (August 2006)**

During the hostilities between Israel and Hezbollah, the fuel storage of the Jiyeh power plant south of Beirut was bombed, which resulted in an estimated 10,000 – 15,000 tons of medium/heavy fuel oil spilling into the Mediterranean. The oil traveled northwards towards Syria and polluted about 20 km of Syrian coastline.

Following a request from Syrian authorities, the Joint Environment Unit together with the International Maritime Organization (IMO) and the Regional Marine Pollution Emergency Centre (REMPEC) undertook an assessment of the coastline of Syria to determine the effects of the oil. The mission took place from 8 to 11 August. The team visited locations from the Syrian-Lebanon border northward to the city of Baniyas. Samples, which were analyzed in Italy, were taken at various points to verify the source of the oil. Based on the assessment and the clean up activities already undertaken by the Syrian Authorities, it was concluded that there was no need for major clean up operations requiring international assistance. Activities were also taken in Lebanon in connection with this oil spill, as noted below.

### **Lebanon Crisis 2 – Lebanon (July-September 2006)**

The hostilities between Israel and Hezbollah involved heavy aerial bombardment of Lebanon, especially in southern Lebanon and south Beirut. The conflict resulted in loss of life, injuries and considerable damage to Lebanese industrial installations and infrastructure. From the beginning of the crisis, the Joint Environment Unit monitored and identified potential acute risks that arose from damaged or destroyed industrial infrastructure, such as



hazardous waste. It coordinated the efforts of major players, including the IMO, UNDP Lebanon, REMPEC, UNEP Post Conflict and Disaster Management Branch (UNEP-PCDMB), and the European Commission. Environmental updates were issued as the crisis developed and inputs were provided for the OCHA humanitarian Situation Reports.

A staff member of the Joint Environment Unit was deployed to Lebanon between 12 August and 15 September to assist the national authorities in the response to the oil spill caused by the Jiyeh power plant bombing (see above). An 'Oil Spill Operations and Coordination Centre' was set-up in the Ministry of Environment to determine the needs of the country and facilitate effective coordination of international assistance.

UNEP's Executive Director played a crucial role in getting Israeli agreement for aerial surveillance flights of the oil spill at sea while Israel maintained an aerial blockade of Beirut. OCHA's Civil-Military Coordination Section sent out a request for helicopters that was fulfilled by UNIFIL and Canada. Two aerial surveillance flights were carried out. Only thin 'sheens' of oil were observed, which did not warrant large clean up operations at sea.

A large donor conference on the oil spill was organized in Athens by the IMO, UNEP and the European Commission on 17 August. The Chief of the Joint Environment Unit accompanied UNEP's Executive Director. The high-level meeting was aimed at coordinating international financial aid. It adopted an action plan, with financial support for its implementation, to assist the clean-up operations in Lebanon.

The UNEP-PCDMB responded to the request of the Ministry of Environment to undertake an environmental assessment. Preparations for this were undertaken in close coordination with the Joint Environment Unit and a smooth transition was ensured. During the field assessments carried out by UNEP-PCDMB, the Joint Environment Unit remained on standby in case any acute life threatening situations were discovered. Both the Joint Environment Unit and UNEP-PCDMB saw the hand-over and mutual assistance during the conflict as a ‘blue-print’ for future cooperation.

### Forest fires – Nagorno-Karabakh region (October 2006)

Extensive fires around the Line of Contact in the Nagorno-Karabakh region led to a request of the Organization for Security and Cooperation in Europe (OSCE) to undertake an assessment mission in the region. The Joint Environment Unit supported this OSCE-led Environmental Assessment Mission to Fire-Affected Areas in the Nagorno-Kharabakh region, endorsed by the UN General Assembly Resolution A/RES/60/285. The Joint Environment Unit asked the Global Fire Monitoring Centre (GFMC) to provide the fire experts for the mission. The GFMC identified three experts who went on the mission.

Subsequent to the mission, the UN International Strategy for Disaster Reduction (ISDR) - Regional Southeast Europe Wildland Fire Network invited the Caucasus States to become

members of the network. In March 2007, the OSCE mission was followed up by the Regional Wildland Fire Consultation on the Development of a Strategy on International Cooperation in Wildland Fire Management in the Regional South East European / Caucasus Wildland Fire Network, held in Sofia, Bulgaria and financed by the OSCE.

### **Toxic waste dumping – Cote d'Ivoire (September-November 2006)**

In August 2006, hazardous substances were dumped at a number of sites in Abidjan, Ivory Coast. According to Government sources, ten people died and several tens of thousands sought medical attention.

On 9 September, the UN Humanitarian Coordinator requested an UNDAC team to assist with this environmental emergency. In coordination with the Joint Environment Unit, Switzerland and the Netherlands made environmental experts available for the UNDAC team. In addition, the Dutch provided support through Bot-mi. In the field, the team cooperated with a coordination expert deployed through the Monitoring and Information Centre of the European Commission. The UNDAC team identified up to 18 dumping sites and determined that the main chemicals found in the original waste were hydrogen sulphide, mercaptans, phenols, and hydrocarbons (a mixture of paraffins, olefins, naphtenes and aromatics). These chemicals can be harmful to humans and the environment depending on the level of exposure that takes place. The team recommended that further actions by the UN country team and national authorities were needed.

As a follow-up on the UNDAC mission, the Joint Environment Unit participated in an OCHA-UNDP-Habitat mission from 25 to 30 November 2006. This initial mission focused on identifying options for national authorities to choose from in developing an effective response to all types of disasters, including those with an environmental dimension. The Joint Environment Unit coordinated its activities closely with UNEP Chemicals, DEPI, ROA, the Secretariat of the Basel Convention and the OCHA country office. The mission team developed an action plan. It was agreed that future contingency planning for disaster preparedness would include environment as a key component.





### Hydrogen Sulphide Cylinders – Suriname (January 2007)

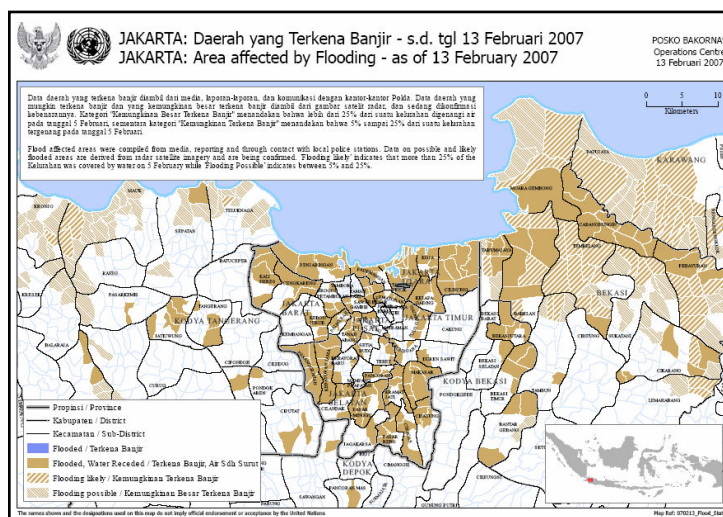
The Joint Environment Unit acted as a broker between potential donor countries and the UNDP office in Suriname, which was dealing with a number of rusted cylinders filled with hydrogen sulphide that were discovered in a technical school in Paramaribo. National authorities removed the cylinders and there was no need for international assistance.

### Floods/Cyclone – Mozambique (February 2007)

Following floods and a cyclone that hit Mozambique, the Joint Environment Unit identified potential secondary risks posed by large infrastructure and hazardous material sites located in the affected areas and alerted the UN country team. This identification was done through a 'Profile of Potential Environmental Risks' (PPER) and was provided to the UN Resident Coordinator along with an offer of assistance. PPERs are described in more detail in section two of this document.

### Jakarta floods – Indonesia (February 2007)

In February 2007, heavy floods affected the capital of Indonesia and submerged large parts of Jakarta. The Joint Environment Unit prepared a PPER. It was sent with an offer of assistance to the OCHA office in Indonesia, which shared the offer with the Indonesian authorities. Following discussions between the UN and the Indonesian officials, Switzerland, at the request of the Joint Environment Unit, put an environmental expert on stand-by to assist with a Damage and Loss Assessment. As flood water levels dropped, the need for international assistance decreased and after consultation with the UN country team, Swiss authorities were informed that the expert would not be needed.



### Cyclones/Floods – Madagascar (February-April 2007)

From December 2006, and into the early part of 2007, Madagascar was hit by 5 cyclones and experienced severe flooding in the northern parts of the country. In response, the Joint Environment Unit prepared a PPER and offered assistance in February. Upon the deployment of an UNDAC team in April, the Joint Environment Unit arranged for a staff member of UNEP-PCDMB to participate as an associate expert on the team. The

environmental expert undertook a Rapid Environmental Assessment to identify any urgent and life threatening issues as a result of the natural disasters. The Joint Environment Unit remained on stand-by to provide further experts and expertise if needed.

### **West Sumatra earthquake – Indonesia (March 2007)**

An earthquake measuring 5.8 on Richter scale struck West Sumatra Province, Indonesia on 6 March 2007. The Joint Environment Unit prepared a PPER and sent it to the OCHA office in Indonesia, which shared the information with Indonesian authorities. There was no request for international assistance.

### **Explosions – Mozambique (March 2007)**

Following a series of explosions at a military depot near Maputo in March 2007, which resulted in 70 deaths and 300 injuries, the Joint Environment Unit, together with OCHA's Civil Military Coordination Section, offered specialized assistance to UN Resident Coordinator of Mozambique. The assistance offered included an expert to conduct a rapid environmental assessment of the impacts from this incident and make recommendations on response, clean up, remediation and rehabilitation activities. In addition, OCHA offered to request from member states explosive ordnance disposal (EOD) experts who could advise on the neutralization and removal of ordnance. The government of Mozambique did not request international assistance.

### **Collapsed waste water basin – occupied Palestinian territories (March 2007)**

In the morning of 27 March 2007, an emergency filtration basin of the waste water treatment plant collapsed resulting in a large wave of effluent that flooded the village of Um Al Nasser in the occupied Palestinian territories. Five people were killed and over 35 injured. The Palestinian Environmental Quality Agency (EQA) sent an official request for urgent assistance to the Executive Director of UNEP, which was promptly addressed by the Joint Environment Unit. The OCHA country office and the EQA advised that relief agencies already present, including the United Nations Relief and Works Agency (UNRWA) were able to meet the request for emergency shelters, water and clean-up tools. There was no need to mobilize additional international assistance.



### **Earthquake/Tsunami – Solomon Islands (April 2007)**

In April 2007, a strong earthquake measuring 8.1 struck northwest of the Solomon Islands capital of Honiara and caused a tsunami. Forty people were killed and 6,000 left homeless. A PPER was posted on the Virtual OSOCC, Global Disaster Alert Coordination System

(GDACS) and the website of the Joint Environment Unit. On 5 April, the UNDAC team, deployed to respond to the earthquake and tsunami that struck the Solomon Islands, requested information on asbestos that was found in damaged medical facilities. In close collaboration with UNEP-PCDMB, information was provided to the UNDAC team to support their efforts. The Joint Environment Unit remained on stand-by to provide further experts and expertise as needed.

#### **Toxic spill/Leaking container- East Timor (April 2007)**

On 16 April 2007, a leakage was reported in the seaport of Dili. A gaseous substance was spraying out of a leak in a metal container in the seaport. The container was believed to contain around 2700 liters of Hydrochloric Acid (HCl, UN number 1789), which is highly corrosive and toxic. Local people reported burning sensations in throat and eyes.

UNEP Regional Office for Asia and the Pacific contacted the Joint Environment Unit for expertise in managing the leakage. Through the German Federal Agency for Technical Relief (THW), the Joint Environment Unit established a direct communication channel between the OCHA Country Office and chemical expertise in the private sector in the German BASF Chemical Company. The experts advised several mitigation/management measures and personal protection guidance, and recommended the evacuation of the surrounding area.

National authorities asked the Government of Australia for technical assistance, which was responded to positively by sending in a team of experts to assess the situation.

## **Chapter 2: Implementation of the global Environmental Emergencies Partnership and capacity building activities**

The Environmental Emergencies Partnership<sup>1</sup> or EEP was launched by OCHA and UNEP in 2002 at the World Summit on Sustainable Development. The Partnership was initiated to enhance environmental emergency management practices in developing countries, and countries with economies in transition, by ‘bridging gaps’ between phases of the disaster management cycle (prevention, preparedness and response) and between disaster management stakeholders.

At the sixth meeting of the AGEE, stakeholders and potential partners recommended that the Joint Environment Unit should create new projects in its role as Secretariat for the Environmental Emergencies Partnership. Governments and stakeholders were invited to review possibilities for information sharing and capacity building projects within the scope of the Partnership. A range of activities have occurred within the context of the EEP.

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<sup>1</sup> Original name: ‘*An integrated approach to prevention, preparedness for and response to environmental emergencies in support of sustainable development*’

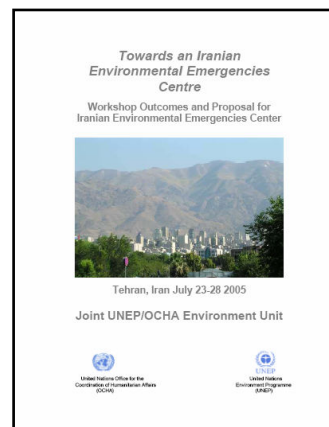


## 2.1 Response Preparedness Activities

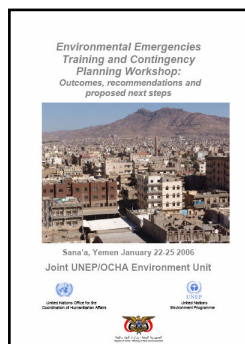
On 16 March 2006, the Joint Environment Unit organized a meeting in Paris with the UNEP Division of Technology, Industry and Economics (DTIE), the OCHA Coordination and Response Division (CRD) and others to coordinate their environmental emergency response preparedness activities. The workshop built on previous guidelines developed under the auspices of the Joint Environment Unit, such as *Establishing a National Environmental Emergency Response Mechanism* and *Guidelines for the development of a national Environmental Contingency Plan*. As a result of the Paris workshop, the 'Needs and Capacity Assessment Methodology' (NCAM) was developed. Its aim is to ensure effective environmental emergency capacity building by providing sound baseline information on which to base capacity building efforts. This methodology includes a standardized approach to background research and provides a framework for stakeholder consultations. The NCAM also contains a self-assessment tool and exercises for national disaster management stakeholders. The methodology was first tested in Turkey in February 2007 with positive results.

### Environmental emergency response preparedness mission – Iran (July 2005)

The Iranian Department of Environment (DoE), an EEP member, determined that the development of an Environmental Emergencies Centre (EEC) could be an important mechanism to help address environmental issues during a disaster. Therefore, within the context of the EEP, the DoE collaborated with the Joint Environment Unit and UNEP-APELL in organizing a workshop in Tehran from 23 to 28 July 2005. A range of meetings and briefings were held with the main actors in environmental emergency response, including the DoE, the Iranian Red Crescent Society, and the Ministry of Interior, as well as the City of Tehran. A report with a range of recommendations was provided to national authorities at the conclusion of the mission. The Joint Environment Unit supported the participation of a staff member of the DoE in the International Course in Environmental Disaster Operations.



### Environmental emergency response preparedness mission – Yemen (January 2006)



In March 2005, the Joint Environment Unit carried out a capacity assessment mission to Yemen. As a follow-up to this mission and in response to a request from the Ministry of Water and Environment (MWE), the Joint Environment Unit organized a four-day multi-stakeholder workshop in Yemen in January 2006. It brought together national government and other stakeholders to improve preparedness and prevention for environmental emergencies. Workshop components included training for rapid environmental assessments, familiarizing

participants with the UNEP-APELL tool and developing a draft environmental emergency contingency plan in collaboration with national authorities and UNDP. It was also concluded that an effective overall national disaster management system would benefit the MWE and the Environmental Emergencies Unit. Accordingly, it was recommended in a comprehensive final report that senior MWE staff support the continued development of the overarching national response structure. The Joint Environment Unit supported subsequent the participation of a staff member of the MWE in the International Course in Environmental Disaster Operations.

#### **UNDAC response preparedness mission – Tajikistan (March 2006)**

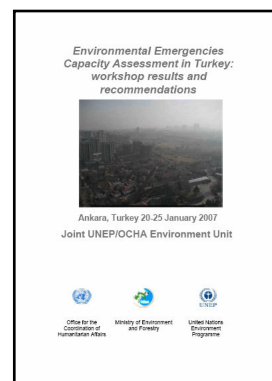
Upon the request of the Government of Tajikistan, an UNDAC disaster response preparedness mission to Tajikistan took place in March 2006. The mission's aim was to assess the national capacity to respond to large-scale natural and environmental emergencies. The Chief of the Joint Environment Unit participated as UNDAC team leader. The team carried out its activities under the auspices of the UN Resident Coordinator. The UNDAC team was composed of experts with a wide range of experiences in the field of disaster management and emergency response. UNEP provided a staff member focussing in particular on the response to environmental emergencies. The team worked closely with the Ministry of Emergency Situations (MoES), other relevant national organizations, as well as UN agencies, non-governmental organizations and donors present in Tajikistan. The mission concluded there was a need for a unified contingency plan, effective coordination between different ministries, appropriate equipment, up to date and systematic training, and public education and awareness programmes. Specific recommendations on environmental measures include the need for the MoES to adopt UNEP's APELL tool, for the Ministry of Water Resources and Melioration to obtain water quality testing kits, and for the Joint Environment Unit to share rapid environmental assessment tools. In terms of debris management, the Joint Environment Unit should help raise the awareness of the rapid response teams, and share lessons learned from previous disasters. Finally, UNEP should help with environmental risk and hazard mapping. After the UNDAC mission to Tajikistan, the Joint Environment Unit supported the participation of a staff member of the MoES in the International Course in Environmental Disaster Operations.



#### **Environmental emergency response preparedness mission – Turkey (February 2007)**

In 2006, the Government of Turkey requested that the Joint Environment Unit conduct an environmental emergency preparedness mission. The mission took place in January 2007,

and was broadly based on the National Capacity Assessment Methodology (NCAM) developed by the Joint Environment Unit. The workshop developed a baseline assessment of Turkish capacity to respond to environmental emergencies and highlighted issues to be considered by the Ministry of Environment and Forestry. Approximately 30 representatives of various governmental bodies and research institutions concerned with disaster management were involved. A main recommendation from the national workshop is that the Ministry of Environment and Forestry should elaborate clearly a vision, objectives and structures concerning its role in the management of environmental emergencies. The Joint Environment Unit remains ready to provide assistance, depending on the final objectives and decisions of Turkish authorities.



### UNDAC response preparedness mission – Laos (February 2007)

Upon the request of the Government of Laos, an UNDAC disaster response preparedness mission to Laos took place in February 2007. The main purpose of the mission was to evaluate the capacity of the national disaster management system in the areas of disaster preparedness and response. It also focused on the response and preparedness capacities of the government of Laos PDR, in dealing with large-scale, natural and environmental disasters. As part of the mission's recommendations, the Joint Environment Unit was invited to assist the National Disaster Management Office (NDMO) in raising awareness of environmental issues and to share lessons learnt on debris and waste management from previous disasters.



The Joint Environment Unit coordinated with the UNEP-PCDMB, UNEP-DTIE to follow-up on these recommendations and will support a single, coherent OCHA-UNEP approach in to help implement the recommendations.

### UNDAC response preparedness mission – Bolivia (March 2007)

In support to the UNDAC Disaster Response Preparedness mission to Bolivia, the Joint Environment Unit identified potential environmental risks in the country and provided background information on the national context on environmental emergencies. During the mission, the Joint Environment Unit followed-up closely with the mission's team and is currently awaiting its recommendations.

## 2.2 Strengthening the environmental emergencies response framework

### Follow-up on Lessons Learned – Post-tsunami

In response to the Tsunami lessons-learned document presented at the previous AGEE meeting, it was recommended that roles and responsibilities between UNEP and the Joint Environment Unit be clarified. In that context, the Joint Environment Unit has examined its relations with UNEP in several activities over the past two years.

OCHA and UNEP agreed to strengthen their collaboration at a high-level workshop of Senior Management Team members of both organizations in Nairobi in October 2005. They issued a joint statement outlining the nature of their renewed collaboration. Donors and partners were provided an update on the results of the workshop through the Joint Environment Unit.

The renewed collaboration was evident in the cooperation during the Lebanon crisis and the smooth hand-over between the emergency phase and the early recovery phase. The lessons learned from this emergency and others will form the basis of new standard operating procedure between the Joint Environment Unit and UNEP-PCDMB.

### Enhancing collaboration between stakeholders

#### *Interface Procedures*

As requested at the 6<sup>th</sup> meeting of the AGEE, the Joint Environment Unit enhanced its cooperation with the main stakeholders in disaster management and environmental emergency response. It had already established a number of interface procedures,<sup>7</sup> operational documents detailing the lines of communication and methods of cooperation between organizations in case of emergencies. During 2005 and 2006, the Joint Environment Unit reviewed and updated the existing interface procedures and established three new ones. To date, interface procedures exist with nine agencies: the Secretariat of the Basel Convention, the Global Fire Monitoring Centre, the UN Economic Commission for Europe, the Monitoring and Information Centre of the European Commission, UNEP's Global resource Information Database, the International Maritime Organization, the UN Operational Satellite Applications Programme, the Ramsar Convention and UN-Habitat. Coordination with the International Atomic Energy Agency is arranged through the 'Joint Radiation Emergency Management Plan of the International Organizations'.

#### *BOT-mi*

The 'Policy Support Team - Environmental Incidents' (BOT-mi) was a valuable tool used in three environmental emergency response cases as noted above. BOT-mi is a Dutch coordination mechanism between six ministries and nine research institutions. Its aim is to

advise relevant authorities and/or regional aid organizations on possible protection measures in the event of environmental emergencies involving chemical substances. While it has existed informally for many years, BOT-mi was formalized by a ministerial decision in 2002. In December 2006, a Joint Environment Unit staff member met with Crisis Management Netherlands to explain how BOT-mi had been used on the three UNDAC mission and provide feedback on the tool.

### *Monitoring and Information Centre (MIC)*

As described above, the Joint Environment Unit and the Monitoring and Information Centre (MIC) of the European Commission cooperated on several emergencies in 2006. A Memorandum of Understanding between the organizations now exists. It establishes how the Monitoring and Information Center and Joint Environment Unit cooperate. Both organizations met in Brussels in February 2007, and expressed the wish to further develop cooperation on responding to environmental emergencies and technological and industrial accidents. It was agreed that in principle the Joint Environment Unit could access a wide range of European environmental experts through the MIC during emergencies. A 'lessons learned' exercise will be contemplated once additional cooperation has taken place.

### *GDACS/ Joint Research Centre*

The Global Disaster Alert and Coordinating System (GDACS) is a joint initiative of the UN and the European Commission, providing near real-time alerts about natural disasters around the world and tools to facilitate response coordination. From the side of the European Commission, GDACS is maintained by the Joint Research Centre, which provides customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies. The Joint Environment Unit and the Global Disaster Alert and Coordination System (GDACS)/ Joint Research Centre are currently cooperating on the identification of secondary risks posed by large infrastructure after natural disasters. The Joint Research Centre has already started to identify nuclear power plants, large dams and (air)ports and these are part of GDACS alert messages after natural disasters. The project of the Profile of Potential Environmental Risks (PPER), initiated by the Joint Environment Unit, could complement the work of GDACS in this area. Both parties recognize the advantage of a joint elaboration of the awareness raising of secondary risks. The PPER was presented at the annual GDACS Stakeholders meeting in April 2007. Based on the support the PPER received from the GDACS Stakeholders, it was agreed to develop jointly a project proposal on the further development of the PPER and its integration into GDACS.

## **Environment as a cross-cutting issue in the Humanitarian Clusters approach**

The Inter-Agency Standing Committee (IASC), at its 65<sup>th</sup> Working Group Meeting in July 2006, recognized environment as a crosscutting issue in its new humanitarian clusters approach. Subsequently, the Joint Environment Unit was requested by the IASC to develop a guidance note on how to integrate environmental issues into the humanitarian cluster

approach. The purpose of the guidance note is not to replace the wealth of technical guidelines that exist or are being developed. Rather, it aims at placing environment visibly on the humanitarian agencies' radar screens. It explains why environmental concerns should be given attention, describes what institutions, tools and mechanisms can provide assistance in this sector and identifies specific areas of concern to some of the humanitarian clusters. The target audience of this document is practitioners (both in the field and at headquarters) and policy-makers. The Joint Environment Unit is working in close collaboration with UNEP on the development of this guidance note and a variety of other measures to increase the extent to which environment is integrated into clusters.

### **Flash Environment Assessment Tool (FEAT)**

The 6<sup>th</sup> meeting of the AGEE in June, 2005 recognized the need for an appropriate environmental assessment tool in the period immediately following a disaster. Accordingly, the Dutch National Institute for Public Health and the Environment (RIVM) was contracted by the Joint Environment Unit to develop a FEAT. This tool will be used in the field immediately following natural disasters to assist in the identification of acute, life-threatening environmental impacts. Crisis Management Netherlands, situated in the Dutch Ministry of Housing, Spatial Planning and the Environment, is also a key partner in this initiative. RIVM produced an initial proposed design for the FEAT that was discussed with key stakeholders<sup>2</sup> at an April 2006, workshop. Feedback was sought from UN agencies, non-governmental organizations and independent experts on the proposed criteria and initial proposed design. RIVM used this feedback for the further development of the tool and an initial prototype. More information is provided in Document EU/AG/47.

### **Profile of Potential Environmental Risks (PPER)**

In line with a recommendation of the 2005 Tsunami lessons learned document presented at AGEE 6, the Joint Environment Unit has developed a desk research-based methodology to identify sites that may pose potential secondary risks during humanitarian crises. These sites include establishments likely to hold hazardous materials, large dams and nuclear facilities. The PPER is rapidly assembled from publicly available information, selected websites and commercially available databases by the Joint Environment Unit immediately following the first OCHA Situation Report about an emerging humanitarian crisis. The PPER is then provided to UN Country Teams to support their decision-making. The PPER can serve as a stand-alone tool for UN Country Teams, national authorities and/or UNDAC teams, or provide a basis for field-based REAs. The Joint Environment Unit is cooperating with the European Commission's Joint Research Centre (JRC), UNEP/DEWA/GRID and OCHA sections and regional offices to continue developing and upgrading the PPER. PPERs follow Global Identifier (GLIDE) numbering and are available at the GDACS site (<http://www.gdacs.org>) and on the Joint Environment Unit website. More information is

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<sup>2</sup> CARE International, International Atomic Energy Association, International Federation of the Red Cross, International Association for Impact Assessment, Office for the Coordination of Humanitarian Affairs, Swiss Agency for Development and Humanitarian Aid, UNEP, UNHCR, UNICEF, and World Health Organization.



provided in the PPER Background Document.

## Emergency Waste Management Guidelines



Natural disasters such as floods, tsunamis and earthquakes usually generate enormous amounts of waste. This waste can pose longer-term challenges for reconstruction efforts and immediate secondary risk for those already affected by the disaster. Various guidelines and projects have been developed following disasters such as the Pakistan earthquake, to assist emergency responders and local authorities in the relief phase of a disaster. The guidelines are based on existing work from the Joint Environment Unit, the UNEP Tsunami Task Force, UNICEF and WHO and have been reviewed by numerous waste management experts. This has resulted in a one-page, easy-to-read UN Emergency Waste Management Guidelines. The guidelines are available on the Joint Environment Unit website.

## Environmental Support Module

The response to environmental emergencies often requires the use of measurement and sampling equipment by experts to determine the presence and concentration of hazardous substances. To date, the Joint Environment Unit has approached donor countries as needs arise to provide equipment and staff. Without a 'stand-by' capacity of standardized equipment and staff, however, the international response to environmental emergencies is faced with a case-by-case decision-making process that depends on the availability of equipment and staff in willing nations. The development of an environment support module under the International Humanitarian Partnership could guarantee a capacity for response to environmental emergencies, and also lessen the burden on the few countries that currently donate when requested. At the most recent meeting of the International Humanitarian Partnership in March 2007, the initiative was taken to launch the development of an environmental support module.

## Chapter 3: Training and awareness raising activities

Over the past two years, the Joint Environment Unit continued training and awareness raising activities related to environmental emergency preparedness and response. Activities such as training courses and workshops have been effective in raising awareness in developing countries and in improving the capacity of countries to prevent, prepare for and respond to environmental emergencies. Those capacity building exercises have also resulted in strengthening environmental networks, in particular, through the establishment of an information exchange network between course participants.

- Training of UNDAC members on environmental emergencies remains an essential task of the Joint Environment Unit. Over the past two years, it has facilitated training in environmental emergencies as part of the UNDAC Asian induction courses, held in Singapore in August-September 2005, and in Seoul, South Korea, in September 2006; the Americas induction course, held in Panama, in May-June 2006, and the induction course in Lausanne, Switzerland in May 2006 and May 2007.
- Every year, the SRSA organizes the NATO/Partnership for Peace International Course on Environmental Emergency Response. The Partnership for Peace (PfP) is a programme of practical bilateral cooperation between individual partner countries and NATO. It allows partner countries to build up a relationship with NATO, choosing their own priorities for cooperation. The course on Environmental Emergency Response attracts around thirty participants each year. Aside from providing the training, the Joint Environment Unit sponsors participants to this course from two countries annually. In September 2005, two slots were reserved for participants from Yemen and Iran as part of the aforementioned response preparedness missions in these countries. In 2006, participants from Tajikistan and Indonesia were sponsored.
- The Joint Environment Unit organized with the OCHA Field Coordination and Support Section an environmental emergency awareness training for Paris-based UNEP staff in March 2006. The training was attended by 15 UNEP staff members and intended to raise the personal and organizational preparedness of UNEP-DTIE staff.



# Conclusion

In summary, the Joint Environment Unit has implemented its activities during 2005-2007 in accordance with recommendations of the sixth meeting of the AGEE. The Joint Environment Unit carried out its primary role of mobilizing and coordinating international assistance in response to environmental emergencies and environmental aspects of natural disasters. Progress was made in the implementation of the EEP, which is now engaged in a range of initiatives and projects, including response preparedness activities. Attention was also given to recommendations made in the Lessons Learned report after the tsunami experience. The Joint Environment Unit is building on past achievements and results to develop its strategic direction and future activities for the coming years. A future direction is laid out in the Position paper' (AG/EU/46), which will be considered at the seventh meeting of the AGEE.