Environmental Needs Assessment in Post-Disaster Situations

A Practical Guide for Implementation

March 2008

United Nations Environment Programme

UNEP

Cluster Working Group on Early Recovery

NOTE

This draft guide is intended as a first step towards elaborating a systematic approach to addressing and assessing environmental impacts and concerns following natural disasters – especially those issues which might have a negative impact on the safety and welfare of people. The guide has been primarily designed to inform and influence the early recovery process. It is intended as a pilot tool and will be revised further as field tests are carried out. Drafting of the manual has included input from many international agencies and individuals and thanks are expressed to them. The manual also draws on a number of published resources listed in the Bibliography.

TABLE OF CONTENTS

ABBREVIATIONS

GLOSSARY

EXECUTIVE SUMMARY

1. INTRODUCTION
1.1 Background
1.2 Environment in a Post-disaster Context
1.3 Environmental Needs Assessment

2. THIS GUIDE
2.1 Overview
2.2 Intended Audience

3. THE PROCESS
3.1 Background
3.2 The Environmental Needs Assessment Team
3.3 Outline Steps of the ENA Process

4. ENA PRACTICALITIES – GETTING STARTED
4.1 Phase I Pre-disaster Baseline
4.1.1 Overview
4.1.2 Recording information
4.2 Phase II Situation Analysis and Site Assessment
4.2.1 Overview
4.2.2 Recording information
4.3 Phase III Stakeholder Engagement and Consultation
4.3.1 Overview
4.3.2 Recording information

5. USING ENA DATA FOR PLANNING EARLY RECOVERY

6. SELECTED BIBLIOGRAPHY

FEEDBACK

Annex I Draft Format for ENA Report

Form I Situation Overview

Form II Key Environmental Issues

ABBREVIATIONS

ENA	Environmental Needs Assessment
ENAT	Environmental Needs Assessment Team
ER	Early Recovery (as part of the IASC Cluster System)
FAO	Food and Agriculture Organisation (of the United Nations)
GIS	Geographical Information System
GPS	Global Positioning System
HIC	Humanitarian Information Centre
IASC	Inter-Agency Standing Committee
NGO	non-governmental organisation
PDNA	Post Disaster Needs Assessment
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees

GLOSSARY

Biodiversity – Biodiversity, or biological diversity, is the variability among living organisms From all sources including *inter alia* terrestrial, marine and aquatic ecosystems and the ecological complexes of which they are part.

Carrying capacity – The maximum number of a given organism, or population, that a particular environment can sustain.

Consultation – A two-way exchange of information, comments, ideas and suggestions. Consultation outputs are considered as inputs for decision-making; they must be taken into account, but need not determine decisions.

Disaster – A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources.

Displaced persons – persons who, for different reasons or circumstances, have been compelled to leave their homes. They may or may not reside in their country of origin, but are not necessarily regarded legally as refugees.

Early recovery – Recovery that begins early in a humanitarian setting. Early recovery is not intended as a separate phase within the relief-development continuum, but rather as an effort to

strengthen the effectiveness of the linkage. Early recovery encompasses livelihoods, shelter, governance, environment and social dimensions (such as HIV/Aids and gender equality as cross-cutting issues), including the re-integration of displaced populations…

Ecologically sensitive area – Habitats such as wetlands, aquifer recharge zones, important wildlife habitats and so forth which are, or might be, sensitive to degradation or destruction by human activities.

Ecosystem – A functional unit consisting of all the living organisms (plants, animals and microbes) in a given area, as well as the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow. An ecosystem can be of any size – a log, pond, field, forest, or the Earth's biosphere – but it always functions as a whole unit. Ecosystems are commonly described according to the main type of vegetation (e.g. forest ecosystem, old-growth ecosystem or range ecosystem).

Ecosystem integrity – The degree to which the fundamental ecological processes (e.g. water and nutrient cycling, the flow of energy and biodiversity) are maintained.

Ecosystem services – The benefits which an ecosystem provides, which include storing water, preventing soil erosion, nutrient recycling and serving as a source of genetic diversity.

Participation – A process by which stakeholders are active and equal partners in decision-making, and may have shared ownership and control over project/programme design and implementation (and also eventual evaluation).

Protected area – Portions of land protected by special restrictions and laws for the conservation of the natural environment. They include large tracts of land set aside for the protection of wildlife and its habitat; areas of great natural beauty or unique interest; areas containing rare forms of plant and animal life; areas representing unusual geologic formations; places of historic and prehistoric interest; areas containing ecosystems of special importance for scientific investigation and study; and areas that safeguard the needs of the biosphere.

Rehabilitation – The full, or at least partial, restoration of degraded landscapes and/or impaired ecosystem services to their state prior, for example, to the site being occupied as a site for transitional shelter for displaced people.

Transitional settlement – settlement and shelter resulting from conflict and natural disasters, ranging from emergency response to durable solutions.

Vulnerability – The extent to which a community, structure, service or geographic area is likely to be damaged or disrupted by the impact of a particular hazard.

Water catchment – An area, often a combination of mountain ranges and basins, that 'catches' rainfall or snow. Water from rain or snowmelt is absorbed into the soil and stored in underground reservoirs, or is fed into a river, aquifer, or lake.

World Heritage Site – A designated and protected site of great cultural significance or a geographic area of outstanding universal value.

1. INTRODUCTION

1.1 BACKGROUND

During and after any crisis, decision-makers at the national and international levels rely on rapidly acquired information to analyse impacts, set priorities, identify gaps, plan early recovery responses, mobilise resources and engage in advocacy. Timely and well-founded information on post-disaster environmental impacts and possible risks to health, livelihoods and the environment and ecosystem services is an invaluable contribution to these efforts.

Despite a growing recognition of the important links between the environment and other life-supporting sectors and systems, environmental information to inform decision making is often unavailable or inaccessible in a post-crisis situation. National databases may have ceased to function or census data may be outdated. The capacity of relevant state institutions may also be weakened, poorly resourced and in serious need of support. Insecurity or poor communication with affected areas may also constrain access to primary data, while competing interests or priorities can also hamper the gathering of vital information. Often, therefore, despite good intentions, environmental considerations are often overlooked.

Despite these challenges, the objectives and priorities for early recovery must be based on a timely and well-grounded assessment of identifiable needs, including those relating to the environment. Although a number of tools and mechanisms exist for assessing and analysing humanitarian relief and broader recovery needs, none has yet been developed or adapted to provide a sound or timely methodological guidance for early recovery needs with regards the environment[1]. Furthermore, no instruments are available for ensuring that early recovery support is linked with considerations for safeguarding the environment and the services it provides.

The development of a Post-Disaster Needs Assessment (PDNA) methodology by the Inter-Agency Standing Committee (IASC) Early Recovery Cluster provides an opportunity to address this gap. Within this framework, the United Nations Environment Programme (UNEP) has been requested to take the lead in developing a post-emergency environmental needs assessment method in order to fully integrate environmental needs within early recovery programming.

1.2 ENVIRONMENT IN A POST-DISASTER CONTEXT

The cause-effect relationship between environmental degradation, poverty and disasters is complex and has been the subject of many analyses. All signs, however, show that the number of environment-related disasters is currently on the increase, with flooding expected to be among the highest of future predictions. As the many ramifications of a

[1] Recognition is given to the excellent ECLAC Handbook for Estimating the Socio-economic and Environmental Impacts of Disasters (ECLAC 2003), but many practitioners have found that this tool is more appropriate for economic-related assessments, with less attention being given to community needs.

changing global climate also become more apparent, it must be expected that certain zones which to date may not have experienced serious impacts of natural disasters may in future become more vulnerable to such events.

Predicting natural disasters is a growing area of research. The scale of human suffering however in post disaster situations is rarely considered ahead of a disaster occurring. In some cases, this places an immediate extra burden on perhaps already damaged or degraded environmental services for the provision of emergency shelter, water or waste provisioning. In almost every disaster situation, however, there are some forms of environmental impact, some of which in turn may have additional secondary negative implications for the already affected communities.

Understanding the dynamics between a disaster, its environmental (as well as social and economic) impacts, the needs of the community and implications for the early recovery process is therefore a vital need. Table 1 shows some of the recurrent environment-related consequences associated with recent disasters.

Table 1. Common and Recurrent Natural Disasters and some Environment-related Consequences

Type of Disaster	Associated Environmental Impact
Hurricane/Cyclone/ Typhoon	• Loss of vegetation cover and wildlife habitat • Short-term heavy rains and flooding inland • Mud slides and soil erosion • Saltwater intrusion to underground fresh water reservoirs • Soil contamination from saline water • Damage to offshore coral reefs and natural coastal defence mechanisms • Waste (some of which may be hazardous) and debris accumulation • Secondary impacts by temporarily displaced people • Impacts associated with reconstruction and repair to damaged infrastructure (e.g. deforestation, quarrying, waste pollution)
Tsunami	• Ground water pollution through sewage overflow • Saline incursion and sewage contamination of groundwater reservoirs • Loss of productive fisheries and coastal forest/plantations • Destruction of coral reefs • Coastal erosion and/or beneficial deposition of sediment on beaches/small islands • Marine pollution from back flow of wave surge • Soil contamination • Loss of crops and seed banks • Waste accumulation – additional waste disposal sites

	required • Secondary impacts by temporarily displaced people • Impacts associated with reconstruction and repair to damaged infrastructure (e.g. deforestation, quarrying, waste pollution)
Earthquake	• Loss of productive systems, e.g. agriculture • Damage to natural landscapes and vegetation • Possible mass flooding if dam infrastructure weakened or destroyed • Waste accumulation – additional waste disposal sites required • Secondary impacts by temporarily displaced people • Impacts associated with reconstruction and repair to damaged infrastructure (e.g. deforestation, quarrying, waste pollution) • Damaged infrastructure as a possible secondary environmental threat, e.g. leakage from fuel storage facilities
Flood	• Ground water pollution through sewage overflow • Loss of crops, livestock and livelihood security • Excessive siltation may affect certain fish stocks • River bank damage from erosion • Water and soil contamination fertilizers used • Secondary impacts by temporarily displaced people • Beneficial sedimentation in floodplains or close to river banks
Volcanic Eruption	• Loss of productive landscape and crops being buried by ash and pumice • Forest fires as a result of molten lava • Secondary impacts by temporarily displaced people • Loss of wildlife following gas release • Secondary flooding should rivers or valleys be blocked by lava flow • Damaged infrastructure as a possible secondary