

Rapid Environmental Impact Assessment: A Framework for Best Practice in Emergency Response

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1. Introduction

With the commendable exception of the UNHCR, environmental issues have not been routinely included in emergency response assessments, planning or operations. This paper provides a summary of a collaborative project between the Benfield Greig Hazard Research Centre and CARE International to develop, test and disseminate a rapid environmental impact assessment (REA) process as a best practice in emergency assessment, planning and response.

The project, which began in mid-August 2001, is being supported by UNEP/OCHA during the process development phase. This phase will be followed by field testing the REA in actual emergency situations and development and dissemination of a REA training syllabus. The project anticipates the REA training materials will be integrated into organizational (e.g. Red Cross delegate training) or sectoral training (e.g. by RedR) for those who may be expected to be involved in emergency operations. The REA can also be used at the community level in combination with participatory needs assessment procedures.

This paper reflects on-going work in developing the REA, including contacts with Non-governmental Organizations (NGOs), International Organizations (IOs) and donors, and discussions in the field with NGO staff with recent emergency response experiences. A summary of the project can be viewed at www.bghrc.com under Disaster Management.

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2. Background

The linkage between disasters and environmental damage is recognized as important to predicting, preventing and mitigating the impact of disasters. Efforts are beginning to apply theory and experience to reducing possible negative environmental impacts during disasters. The UNHCR has developed, and continues work on, guidelines and procedures for dealing with the environmental impact of refugee displacements. CARE International has begun a multi year program to integrate environmental factors into its disaster preparedness and response capacity. The World Wide Fund for Nature (WWF), through the USAID supported Biodiversity Support Program (BSP), is also addressing links between disasters and the environment. These efforts are, however, limited in scope and singular, rather than part of a broad trend by humanitarian assistance organizations to include the environment as an integral and routine part of disaster mitigation and response.

Accurate and timely data, and a conceptual framework to understand this data and from which to define response actions, are key to mounting effective relief programs. Relief assistance cannot be effective if managers and decision makers exclude, or are unaware of, critical factors such as the environmental impacts of the disaster or relief actions.

Being ignorant of, or purposefully disregarding, the environmental impacts of relief operations also conflicts with two guiding principles for humanitarian assistance². The first is that relief operations should, if possible, “do no harm.” Operations that don’t consider environmental impact are likely to do harm. This harm is likely to be unanticipated, unmitigated and worse than if it was identified and dealt with as part of relief operations.

The second principle is that operations should conform to accepted standards or best practices. Environmental issues are often overlooked in emergency operations because of the urgent need to take action. However, a best practice for disaster response is that pre-disaster and operations planning should be comprehensive, anticipating operational needs and assistance requirements. Not including the environment in pre-disaster and operational planning clearly conflicts with the best practice for responding to disasters.

3. The Challenge of Including Environmental Issues in Relief Operations

There are three major reasons why environmental issues are not systematically included in disaster response. First, policies on emergency response often exclude emergency operations from normal environmental impact assessment procedures on the grounds of a need to act quickly to save lives or property. In many cases, organizations do not have alternative policies for dealing with emergency-related environmental issues, or the guidance provided is so general as to be easily bypassed in the rush to respond.

² See www.sphere.org for more on standards, best practice and humanitarian assistance.

Second, field personnel tend towards “tunnel vision,” focusing on one or two problems and not taking time to step back and see the broader aspects of a disaster and its impacts. Getting relief cadres to see the “big picture” requires an analytical framework which is clear, easy to use and of minimal demand on time and resources.

Third, environmental issues are often seen as the domain of specialists, too complicated for the average relief worker to handle. The reality is that many relief-related environmental issues are not complex at the level of identifying salient problems. What is lacking is an analytical framework to identify which environmental issues are (1) salient and require immediate attention, or (2) are of potential near-term salience and need to be monitored and included as part of medium term disaster recovery plans.

Environmental specialists can be brought in to assist relief operations. But it still falls on relief cadres to define what problems need to be addressed, what types of specialist are needed and what they are expected to accomplish. As UNHCR has noted, bringing in specialists without clearly defining the environmental problems they are to address creates a significant risk that the specialist will only focus on addressing problems within his/her own competency, and ignore other, more significant problems.

4. Environmental Impact Assessments and Emergencies

The accepted best practice is for an environmental impact assessment (EIA) to be conducted for any significant developmental undertaking³. The validity of an EIA rests in its comprehensive collection and weighing of data to assess whether negative impacts are less than the positive ones.

This slow process is clearly incompatible with the time compressed, chaotic and difficult operating conditions encountered in disaster response. Some of the differences between environmental assessments in disaster and development contexts are shown in the table below.

Shortcutting the EIA process risks creating an incomplete assessment that misses or misstates critical considerations. At best, this can lead the response to focus on less important environmental problems. At worse, an incomplete EIA can result in more harm than would be the case without having the assessment done at all.

³ See Principles of Environmental Impact Assessment Best Practice, International Association for Impact Assessment, www.iaia.org.

An option is to only conduct an Initial Environmental Evaluation (IEE), the first step in an EIA. The IEE seeks to identify salient environmental issues and to highlight which issues need further assessment. Yet, using the IEE as a stand alone process, separate from a full EIA, presents the same problem of truncating or shortening the full EIA: one risks missing or misstating environmental impact since the IEE is only an initial, not a comprehensive, assessment process.

**Contextual Differences:
Developmental & Disaster Environmental Assessments**

<u>Development</u>	<u>Disasters</u>
1. Legal requirement often exists (country &/or donor)	1. Rarely a legal requirement but some donors may ask for it
2. Deliberate & pro-active	2. Reactive
3. Will take time, be thorough & extensive: needs comprehensive data collection	3. May need to be partial in coverage
4. "No project" option is a possible outcome	4. "No project" outcome is not an option
5. Project launch planned	5. Sudden onset
6. Location chosen	6. Unpredictable location
7. Duration planned	7. Uncertain duration
8. Beneficiary population identifiable & static	8. Beneficiary population heterogeneous & dynamic
9. Environmental goals may be made compatible with socio-economic ones	9. Priority given to "life saving" activities sometimes difficult to reconcile with environmental goals

Source: UNHCR and CARE International

5. Incorporating Environmental Considerations into Emergency Response

To make the consideration of environmental factors a functional part of emergency response, a Rapid Environmental Impact Assessment (REA) process is needed to provide a decision framework to help relief cadres and disaster victims focus on data and analysis which supports the effort to save lives and establish conditions for survival, and define the potential environmental impacts of the situation. This REA needs to be:

- As dynamic as the response operation, shifting to provide new information on potential impacts and responses as conditions change, making available to assistance providers the inputs needed to change and develop new assistance plans and projects
- Able to provide information for a real-time monitoring of environment-related factors as input into ongoing assistance operations.
- Simple and straightforward, imposing the least additional workload on the response effort.
- Applicable over a wide range of agro-ecological and geographic settings.
- Place human conditions and needs as the focus of attention and effort.

The purpose of the REA is not to provide complete answers to emergency-related environmental issues, but to aid those in the field to frame and prioritize environmental issues in such a way that four options can be pursued. These are:

1. Developing simple terms of reference that can be forwarded through the support structure to provide specialized technical or material assistance,
2. Use of the growing body of literature on ways to address, mitigate or prevent environmental problems during emergencies (a significant part of this literature has been produced by UNHCR),
3. Formulation of specific questions to be forwarded to outside specialists, from which specific answers to environmental issues can be formulated and sent back to the field, and,
4. Formulating common sense solutions to environmental issues which have been identified.

The REA approach is most appropriate during the critical disaster response period, from when warnings of a potential disaster are first evident until conditions have stabilized, normally 90 to 120 days after a trigger event. During this period resources can be mobilized for a standard EIA as part of the recovery and rehabilitation process. The outputs from the REA process, besides identifying immediate environmental factors relevant to the relief operations, also provide data and insight that can be incorporated into the EIA.

6. Rapid Environmental Impact Assessment in Emergency Response

The REA process under development is based on the four elements, summarized below.

6.1 Context Statement

This statement is intended to place the emergency event in the context of overall impact,

response requirements and specific impact on humans. In a sense, the context statement serves as a summary of the emergency situation and highlights salient factors which can frame or impact an environmentally aware response.

The context statement also allows identification of environmental aspects of the emergency which may require specific technical responses. An example would be an emergency with a hazardous chemical spill, which would require a specific specialist and technical response above and beyond the core focus of the REA on human impacts.

A draft context statement format can be found at the end of the paper.

6.2 Rapid Identification of Current Demands on the Environment

The identification of current demands on environmental resources is accomplished through a rating of how well the disaster victims' basic needs are being met. Needs that are not being adequately met pose the greatest immediate threat to the environment and require attention in assistance planning and provision. For example, if cooking energy needs are not met there is a high risk of tree cutting and open fires, leading to problems from deforestation and air pollution.

The focus on unmet needs is based on the assumption that disaster victims will use available resources, including environmental ones, to meet critical requirements for survival and immediate welfare. Thus, to the extent that critical needs are not met, there exists a risk that disaster victims will exploit and possibly damage, environmental resources in their search for survival.

Use of a "population needs vis-à-vis the resources available" equation is key to the REA process for two reasons. First, as suggested above, it recognizes that disaster victims can only use immediately available resources to address disaster needs, and that the victims' own efforts make up a large part of the total recovery effort following a disaster. Second, the equation reflects the purpose of disaster assistance to meet critical immediate needs of affected populations, creating a link between victims' needs that may have a detrimental impact on the environment and the planning of external assistance.

A prototype rating Unmet Needs Assessment form can be found at the end of the paper. The rating categories ("needs") are generic to most types of disaster, but can be modified to be specific to any disaster. The rating process, like much in emergency conditions, is relative and subjective. The form uses a 1 (needs met) to 10 (needs not met) rating, but other scales or formats (e.g. good, fair, poor, no availability) can be used.

Linkages between needs and impact are generally intuitive. The purpose of the rating is to identify potential problem areas (i.e. what needs are not being met) for further evaluation. This evaluation is action-oriented, focused on the questions of whether there is a serious problem and what should be done about it.

6.3 Rapid Evaluation Of Factors With An Immediate Impact On The Environment

The third REA element focuses on quickly evaluating factors that can have a direct and immediate impact on the environment in a disaster. This is accomplished by rating the importance of different aspects of a disaster event with respect to their potential to damage the environment.

A prototype rating form and further background to the form are provided at the end of the paper. Specific items included in the rating can be changed depending on the type of disaster, pre-disaster resources available to the victims and the focus of concern about environmental impacts.

The rating scales are organized so that the higher a rating, the greater potential impact on that environmental aspect, thus signaling (and allowing a prioritization of) items required during relief operations. In addition, high ratings signal areas that may require specific actions to mitigate negative environmental impacts.

The third element includes a combination of victim, response and environmental factors. The focus is on identifying to what degree efforts to meet immediate needs may threaten negative environmental impacts in the disaster area. Human needs and actions are also probably a significant factor in negative environmental impacts caused during a disaster trigger event, for instance erosion during heavy rains. But assessing these causal factors is the task of a postmortem assessment, rather than an operation-focused REA.

The pre and post disaster event status of the environment inhabited by victims affects impacts that may occur during the disaster recovery efforts. The Impact Assessment also permits evaluation of the state (“fragility”) of the environment, which can vary significantly in importance for different types of disaster.

The rating also assesses the effectiveness of external assistance in addressing victims’ needs, and thus the victim’s propensity to meet needs through direct extraction from the environment. This factor is included in the rating not to evaluate the effectiveness of external assistance but to gauge whether assistance corresponds to possible environmental impacts.

6.4 Identification of Potential Negative Consequences of Possible Relief Operations

The fourth REA element focuses on identifying potential negative consequences or impacts that might arise from external assistance provided in response to a disaster. The review of relief options is the external complement to the second element of the REA process, which focuses on actions by the disaster victims.

The rapid evaluation uses a checklist matrix with possible interventions along the vertical axis and possible impacts along the horizontal axis. This checklist can be generic or specific to each type of disaster.

The intervention impact review serves to alert planners to potential environmental

consequences of relief efforts. Where these consequences are judged to be significant or unacceptable, relief planners then can decide whether not to provide the assistance or to incorporate mitigation actions in the assistance. The process of reviewing possible assistance impacts also contributes to decisions as to what types of assistance are best suited to the situation.

The substance of the Unmet Needs and Impact assessments should be fairly standard across disaster types and locations. On the other hand, identifying potential assistance impacts needs to be based on criteria and matrices that are more specific to expected relief operations. It is also important to avoid the clutter of a one-matrix-fits-all approach, which could serve to confuse rather than simplify the impact assessment process.

7. Rapid Environmental Assessment as a Process

The REA is a simple and straightforward process, relying on observation and common sense rather than technical specialization. The rating process and format are designed for use by non-specialists in the field. At most, the REA requires less than two hours to complete, and thus can be revised and reviewed with ease during a disaster response operation. In addition, most of the basic data and backing analysis for a REA rating are the same as those developed for contingency planning, making it possible to lay much of the REA groundwork before a disaster.

The REA process provides a temporal snapshot of environmental conditions. The straightforward REA format and process means that the rating tables and checklist matrix can be easily redone. This makes the REA ideal for monitoring changes in environmental impact factors over the early stages of a disaster.

Re-rating can be done as often as needed. The results of the re-rating provide both the substance for regular inputs into operations planning and implementation and periodic environmental impact reporting on emergency operations. The assistance impact checklist can be a tool for planning and evaluation staff in developing and reviewing disaster response operations.

8. Who is the Intended User?

The REA is designed to be used by, and of use to, a broad range of people who may be involved in emergency response. The most likely users are emergency response personnel and environmental specialists managing assessments and operations at the field level.

But the REA is more specifically designed to be used by non-specialists, the people who are most likely to be present when an emergent situation turns critical. Raising the environmental sensitivity of these unintended emergency managers is important, as the earlier an issue is

identified in an emergency response the more likely it is that an effective and efficient response will be pursued.

Finally, the REA is intended to be used by disaster-affected communities, particularly as part of a participatory approach to assessment, planning and response. The use of the REA at the community level is best accomplished where a community has a pre-emergency relationship with an assistance organization. But this connection is not a prerequisite, particularly if a community has a coherent governance structure which can be quickly trained in the use of the REA.

9. The REA as Best Practice

Environmental assessment during disasters is not yet a common practice in relief operations. But this can change with the development of a REA process. However, the inclusion of environmental factors in disaster relief requires that any assessment process be broadly accepted and used by NGOs and IOs. If only a few NGOs or IOs pay formal attention to environmental factors while the majority do not, there will be no real impact in reducing the negative linkages which can develop between disasters and relief assistance.

There are two ways to make environmental assessment a formal part of relief operations: (1) create a formal impact assessment standard to be met as a condition for receiving assistance, or (2) use the REA process as a best practice for effective relief operations. An obligatory environmental impact assessment standard is more convenient for funding agencies, but requires a consensus among (at the least) the lead funding agencies. This would take time and delay effective inclusion of environmental factors in foreign disaster management.

The alternative, of establishing a rapid environmental assessment process as a best practice for relief operations, is more practical. A best practice can be proposed by one party and evolve through practical use and collaboration. This evolutionary approach is also practical in that different types of disaster will result in different elements in the impact rating forms, but the same process and practice will apply to the assessment of environmental impact in disasters.

10. Links Between REA and UNHCR's Work To Date

UNHCR is a leader in including environmental issues in the response to emergencies. Much, if not all, of the UNHCR work to date can be applied directly to any displaced-population situation, and more generally to situations where displacement is not an issue.

The REA can contribute to the UNHCR work to date in three ways:

1. The REA can be used by implementing NGOs in the initial rapid needs assessments to identify salient environmental issues regardless of the nature and location of the refugee

crisis. Once this rapid assessment is completed, the more detailed guidance and guidelines developed by UNHCR can come to play in designing and implementing environmentally sensitive operations.

2. The REA can aid partner NGO and UNHCR field staff in identifying specific environmental issues and formulating concise requests for advice or technical assistance. This use of the REA recognizes that each refugee situation is unique and needs to be assessed and managed beyond the limits defined by standard operating procedures. In other words, even when standard procedures can be applied to a refugee situation, the REA is helpful in avoiding surprises and formulating requests for assistance specific to the circumstances of each refugee situation.
3. The REA can be used to supplement UNHCR procedures for assessing the environmental impact of return projects and non-standard operations. An example of the first use is to review the potential environmental impacts of providing a package of farming, building and professional assistance to refugees who may be returning to a war-affected country. The REA would be different from an EIA or IEE in that it would quickly review the potential project impacts. And this assessment process could continue once the refugees had returned, providing a capacity to monitor environmental issues before long term recovery programs are designed and implemented.

These contributions recognize that UNHCR is increasingly working through partner NGOs, and that the competency of these NGOs will largely determine the overall competency of UNHCR's response to a refugee situation.

An example of the use of the REA in non-standard refugee operations is where displaced people are living with a local population or outside well defined camps. While the environmental impact of this dispersed settlement may not be as obvious as with the concentration of refugees in a camp setting, impact still occurs and is both harder to identify and to address. The REA provides a basis for the impact assessment and also a way to monitor changes in conditions that might occur if the displacement continued for some time.

11. Conclusions

The UNHCR has and continues to develop guidance and procedures to address the environmental impacts of refugee situations. The rapid environmental impact assessment process will strengthen UNHCR's efforts by:

- Improving the environmental impact assessment capacities of partner NGOs in the immediate on-set period of a refugee situation;
- Providing an appropriate field tool to assess and monitor environmental conditions and potential issues in refugee displacements as the displacements take place and before long-term monitoring systems are established in the refuge and return periods; and
- Enabling UNHCR and partners to assess and monitor environmental issues in non-camp situations and before and during the return period, when close attention is needed to environmental issues under fluid or opaque conditions.

Rapid Environmental Impact Assessment: A Framework for Best Practice in Emergency Response

The REA structure outlined in this paper will be in draft operational form and ready for field testing by the beginning of 2002. The draft REA process will be available at the project web site (www.bghrc.com, Disaster Management). Comments are welcome.

Context Statement (Draft)

The Context Statement section of the Rapid Environmental Impact Assessment process has three purposes: (1) Clearly establish the nature and impact of the disaster, (2) identify any technology-related potential environmental issues which may require investigation and specific technical support and (3) highlight any environmental issues which have already been identified before the assessment.

Disaster Summary

Provide a short summary of the disaster, highlighting disaster origin, number and location of victims, nature of impacts and any already identified environmental concerns. The summary should not exceed 200 words.

At the end of the assessment, verify that the context statement reflects the nature and impact of the disaster as explored through the rating process and that any environmental issues initially identified have been included in the assessment or modified. Change the context statement accordingly.

Technology-Related Potential Issues

Answer the following questions and consider taking the recommended actions as appropriate:

1. Have there been, or is there concern about, the release of potentially toxic substances?

If yes, it is likely that technical advice and assistance will be needed to assess the impact and remediation of the releases.

Consider whether this is an action you wish to initiate. If yes, formulate an initial request for assistance that briefly describes the disaster, the nature of the disaster, the nature of the toxic substances released or which may be released, the location of the release site and local contacts. (See the UNEP/OCHA guidance on hazardous incident reporting.)

2. Are any industrial sites or mines in the disaster affected area and have any been affected directly or indirectly by the disaster? Impacts can range from direct (damaged buildings) to indirect (lack of electricity), which might result in unanticipated environmental impacts.

If yes, it is likely that technical advice and assistance will be needed to assess and address environmental impacts.

Consider whether this is an action you wish to initiate. If yes, formulate an initial request for assistance that briefly describes the disaster, the nature of the disaster, the nature and location of the mine or industry of concern and local contacts. (See the UNEP/OCHA guidance on hazardous incident reporting.) Note that most mines and industrial sites will have in-house capacities to deal with potential environmental problems following a disaster. It is

recommended that these capacities (and any from the government) be taken into account in considering whether to initiate a separate response or to work collaboratively with the affected organization.

Existing or Perceived Environmental Concerns

Are there any existing or perceived concerns about the environmental impact of the disaster on the part of the victims or neighboring communities?

If yes, these concerns should be given a priority among (or over) the environmental issues identified in the assessment, most likely in the nature and manner of relief operations. Salient environmental concerns on the part of the victims or neighboring communities (the most immediate source of assistance) will be major drivers in framing the victims' and neighbors' responses to the disaster. Disregarding these concerns risks creating a gap in the external and internal response. Such a gap will degrade response effectiveness.

Prototype Unmet Basic Needs Assessment

Unmet Basic Needs Rating Form

Needs	Needs: met (1) to not met (10)
Water, including:	
Consumption	
Sanitation	
Energy, including:	
Protection from Climate	
Heating/cooling	
Clothing	
Food	
Processing: food	
Processing: water	
Lighting	
Shelter	
Transport: goods and services to displaced	
Evacuation of waste	
Transport: displaced to goods and services	
Personal Protection	
Safety	
Health, including:	
Acute care	
Water (quality)	
Environmental sanitation	
Nutrition/food assistance	
Vector Control	

Environmental Impact Factor Assessment: Prototype Rating Form and Background

Environmental Impact Factors Rating of Importance

Criteria	Rating Range	Rating: 1 to 10
Number of Affected (V)	Low to High	
Duration (time since onset of disaster) (R)	Short to Long?	
Density of affected (V)	Low to High	
Self-Sufficiency (ability of victims to meet needs without recourse to direct extraction from the environment or external assistance) (V)	High to Low	
Environmental Efficiency (whether victims' efforts to meet needs are relatively more or less damaging to the environment) (C)	High to Low	
Homogeneity (V)		
- Social (V)	High to Low	
- Cultural (V)	High to Low	
- Economic (V)	High to Low	
Expectations (what minimum standard of living do the victims expect) (V)	Low to High	
Absorptive Capacity (C)		
- Resources (level of resources are available to the victims without direct and immediate damage to the environment) (C)	High to Low	
- Waste (how well the local environment absorbs waste produced by the victims) (C)	High to Low	
Effectiveness of External Assistance (in covering otherwise unmet needs) (R)	High to Low	
Environmental Fragility (susceptibility of the disaster area to additional immediate damage by victims) (C)	Low to High	

Background to Table Elements

Environmental impact is dependent on the number of persons affected, the duration of the event, and the density of the temporary living conditions. The greater the number affected, and the longer the event the greater the impact. The closer together the victims are crowded,

the greater the impact on the environment in their immediate vicinity.

The level of self-sufficiency is important as the more resources the disaster victims have the less they need to extract directly from the environment. Also influencing impact is the environmental efficiency (i.e. impact minimization) of the means used by the victims and their hosts in securing needs from the environment. This is not necessarily the level of technology used, but the degree to which impact is minimized in the extraction process.

Social, cultural and economic characteristics of a displaced population can influence environmental impacts. The more homogeneous a population is, the greater intra-group sharing of available resources and thus a reduced need to seek needs from the environment.

Basic and other needs are defined by physical and social factors. What are seen as basic needs for survival by one group may be far below what are seen as the basic needs by another group. As the immediate shock of the disaster wears off, the displaced are likely to feel that they need more goods and services.

The higher the level of economic development of the area when the victims take refuge, the greater the resources available to meet needs. In the worse case, victims need to meet all their needs directly from the environment, causing direct impacts through exploitation and from waste generation.

Most disaster victims end up in locations between the extremes of totally sufficient absorptive capacity and none at all. Characterizing the absorptive capacity of a refuge is important in identifying and planning mitigative measures. Absorptive capacities fall into two groups: the availability of resources to meet the needs of the victims, and the capacity to absorb waste produced by the victims.

In the table, “C” identifies context (environmental) factors, “V” identifies victim-related factors and “R” identifies relief-related factors.