

# **Strategic Environmental Impact Assessments and Disasters: Building Back Smarter<sup>1</sup>**

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## **Abstract**

Disasters significantly disrupt the built and social environments. Recovery from a disaster can place considerable demands on the environment, ranging from increased resource extraction to new jobs involving new uses of natural resources. The post-disaster period often presents an opportunity to reshape the pre-disaster environment, leading to new settlements and redesigning pre-disaster land use. In non-disaster times, almost all of the actions undertaken following a disaster would be subject to environmental reviews and take place in a context set by a strategic environmental impact assessment. However, pressures to move recovery forward as quickly as possible are often at the expense of strategic environmental reviews. Unfortunately, a failure to assess impacts can lead to avoidable environmental damage and increased hardship for the disaster survivors. This paper explores how the strategic impact assessment process can work in the disaster recovery context.

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## 1. Introduction

This paper will explore how the process of strategic environmental impact assessment (SEA) can be integrated into the recovery from disaster in a context where external assistance is a significant component of the recovery effort. Externally funded recovery efforts often involve what is termed *humanitarian assistance*, generally aid provided as grants or low interest loans to a country following a disaster. Because of the focus on urgent disaster recovery, this assistance is usually not covered by strategic, programmatic or project-level environmental impact reviews.

Why an SEA process needs to be integrated into disaster recovery is relatively straight forward. Disaster recovery, like any other large-scale undertaking, can have negative impacts on the environment, including:

- The demand for resources (energy, sand, gravel, wood and water) to replace, in two to three years, what took 40 years to build before a disaster can place unsustainable demands on local resources.
- The re-housing of disaster survivors in hazard-prone areas.
- New roads built into heretofore inaccessible areas, leading to new exploitation of natural resources.
- Changes to urban areas increasing the spatial coverage of impermeable infrastructure (e.g. roads and roofs) leading to an increase in the potential for flash floods due to reduced permeability and stream siltation due to increased run-off from disturbed landscapes.
- Changes in the provision of common services (e.g. water, sewage, power, transport) have a potentially negatively impact on the environment by creating new demands or new impositions on eco-services.

The two to three year disaster recovery period is also usually seen as an opportunity to reshape the social and structural fabric of an affected location. As a result, recovery efforts may focus not only on replacing what was lost, but also improving on what existed before a disaster.

In normal, non-disaster, times, building a city of 500,000 or establishing the roads, irrigation, electrical supply systems and housing in a rural area for 250,000 residents would necessitate a range of environmental reviews. However, such reviews are not common for disaster recovery efforts because:

- The legal requirements for such reviews can be unclear, for instance whether normal environmental impact assessment procedures apply when a state of emergency exists.
- Different funding agencies have different rules on environmental impact assessments, and these procedures may not be applicable where funding is provided in a post-disaster context.
- The normal environmental review process can be seen as too slow for the short time available to start and complete recovery operations.
- The political and psychological impetus to remove the vestiges of the disaster and “build back better”<sup>3</sup> may leave little political or social space for questioning recovery efforts.

This said, environmental reviews of recovery efforts may take place but:

- may be on a case-by-case basis;
- can be limited to a specific undertaking (e.g. a re-housing project); and
- can be limited in scope, for instance asserting that rebuilding road infrastructure will have no negative impact on the environment since the infrastructure existed as part of the environment before the disaster.

Thus, even when environmental reviews of recovery efforts do occur they:

- may cover only a limited (project-specific) segment of possible environmental impacts; and
- would find it hard to consider indirect, cumulative and secondary impacts of a set of similar projects (e.g. 10 re-housing projects operating at the same time) or the intensive demands on resources imposed by the short time frame for recovery efforts.

One further issue posed by a limited environmental impact assessment process in the post-disaster period is limited or no consultations with the affected populations on the options and consequences for recovery. Consultation with affected populations is a core part of the environmental impact assessment concept. Consultation with disaster survivors is also a basic concept in effective disaster relief and, by

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<sup>3</sup> The term *build back better* is commonly used to summarize recovery which improves on what existed before the disaster. The concept has been challenged over differences in the understanding of what is *better* from the perspective of the disaster survivors and external parties. See Kennedy *et al*, 2008. for a further discussion of this issue.

extension, recovery based on the idea that disaster survivors should drive their own recovery (see Sphere Project, 2011, p. 55).

However, it is difficult to have a transparent and informed consultation process if the impacts of a sector or the overall recovery effort have not been identified. A consultation process which is ignorant of possible negative (or positive) impacts represents a failure of those proposing a recovery project or program to meet international best practice in terms of dealing with disaster-affected populations.

While the conceptual value of a post-disaster environmental impact assessment is clear, the constraints to this process are also significant. In an environment where not every recovery project can be expected to have a formal environmental review and where a considerable part of the recovery effort is driven by the disaster survivors without formal controls, understanding the big, strategic, picture in terms of environmental impacts and opportunities is key to ensuring that recovery does not create more suffering and environmental risks for disaster survivors.

The following sections summarize the nature of an SEA and how disaster recovery plans are developed, followed by a discussion as to how the SEA process can be integrated into the recovery planning and management process.

## **2. The Nature of Strategic Environmental Assessment**

*Applying Strategic Environmental Assessment: Good Practice Guidance for Development Co-operation* (Organization for Economic Co-operation and Development, 2006) provides a good summary of the nature of the strategic environmental assessment process. A SEA is intended to "... integrate environmental considerations into policies, plans and programmes and evaluate the inter linkages with economic and social considerations." (p. 30). The focus on policies, plans and programs is where the SEA differs from an environmental impact assessment (EIA), which tends to focus on specific projects (but see below on programmatic environmental impact assessments).

Other specific characteristics of a SEA, as identified in *Applying Strategic Environmental Assessment: Good Practice Guidance for Development Co-operation*, include (Organization for Economic Co-operation and Development 2006, p.32):

- a process which takes place early in the planning process;
- is independent from any activity proponent;
- takes a broad and inclusive view of options and alternatives;
- considers direct, indirect and cumulative impacts;
- incorporates feedback and may have multiple revisions based on changing circumstances;
- incorporates some form of stakeholder consultations; and
- may not result in a formal output document.

From a practical point of view, developmental SEAs provide:

- a way to frame what might happen in a broad sector (e.g. energy);
- understanding of how the options available can impact the environment directly over a horizon of many years; and
- understanding of how options in one sector can impact other sectors or cross-sector issues, such as climate change.

The broad scope of an SEA makes it likely the process will incorporate a wide range of actors, with a consultation process requiring considerable time and the use of a number of data collection and analytical mechanisms. In short, a normal SEA process is likely to be long, involve many stakeholders and participants, and be weak on specifics.

Verheem *et al.* discuss the use of the SEA approach in a post-conflict context. While they reach a number of conclusions as to when a SEA following conflict is possible and appropriate, two points are relevant in the non-conflict disaster recovery context. A SEA should be attempted when:

- there is an interest in the environment; and
- when there is funding to implement the results of the SEA.

Verheem *et al.* (2005) also suggest that a SEA should take place somewhat later in a conflict recovery process given the lack of capacity and difficult operating conditions immediately after a peace agreement.

Dolcemascolo (2010) summarizes a number of issues which can make a SEA following a disaster difficult if not impossible, including:

- physical limitations to on-site access;
- securing specialists with appropriate expertise;
- preoccupations of local people on immediate priorities for survival;
- obtaining clearance and support for the SEA from authorities, which are often distant from the disaster and where political sensitivities exist;
- absence of effective chains of command in the disaster region;
- duplication of effort among agencies;
- absence of data, maps or other records for the affected areas;
- conflicting views on how to resolve both short- and long-term needs (Dolcemascolo, 2010, p. 10).

The issues raised by Verheem *et al.* (2005) and Dolcemascolo (2010) will be discussed further in the section on Strategic Environmental Assessment and Disaster Recovery, below.

An approach which fits between an SEA and an EIA is the programmatic impact assessment (PEA).<sup>4</sup> As the name indicates, a PEA looks at programmatic considerations of prospective project activities but not the scale of policy and cross-sector aspects covered in a SEA. For instance, a PEA would look at the direct, indirect and cumulative impacts of the same types of projects happening in different locations. The PEA may identify both broad and specific issues related to the planned projects under an overall program of assistance. For instance, a broad issue may concern the sourcing of fill for the construction of a network of rural farm-to-market roads. A specific issue may relate to how a road segment could traverse wetlands.

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<sup>4</sup> For more on programmatic impact assessments, see  
[http://www.usaid.gov/our\\_work/environment/compliance/ane/eptm/annex\\_F.pdf](http://www.usaid.gov/our_work/environment/compliance/ane/eptm/annex_F.pdf)

While a PEA might provide general and specific guidance on addressing environmental impacts it would also include guidance on how to mitigate or avoid anticipated negative environmental impacts. A PEA can replace multiple single EIAs, although there still may need to be more specific assessment of impacts at specific locations which are covered by an assistance program, for instance the impact of pesticide use near specific wetlands. However, requirements for more detailed local assessment of impacts would be set out in a PEA report.<sup>5</sup>

A PEA does not consider or address the “...policies, plans and programmes and evaluate the inter linkages with economic and social considerations”<sup>6</sup> which arise above the program level.<sup>7</sup> In other words, a PEA may consider the environmental impact of rebuilding shelter, but not how these efforts will impact on regional road reconstruction, agriculture or shifts in urban development policy.<sup>8</sup> It is at this level that the SEA should provide added value.

### **3. Post-Disaster Needs Assessment and Recovery Planning**

The process for a post-disaster needs assessment and recovery planning is relatively well documented<sup>9</sup> and usually involves a team of national and international experts working sector by sector to develop an as-good-as-possible determination of damages and needs, and define what will need to be done to address the damage and needs. The result of this process is often launched through a specific event (e.g. a pledging conference) or, at the least, as an appeal through the United Nations.

The assessment process often starts formally about a month after the onset of disaster, with a formal draft recovery report (covering the damage assessment and recovery needs) completed a month later. Up to another month can follow for consultations between the disaster-affected country and aid

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<sup>5</sup> A PEA may include an Environmental Mitigation Management Plan, which details specific measures to mitigate identified negative environmental impacts. These mitigation measures can be applied to specific projects implemented under a PEA, thus reducing the need for more detailed project-specific assessments.

<sup>6</sup> Organization for Economic Co-operation and Development, 2006, p. 30.

<sup>7</sup> Note, however, that the *Programmatic Environmental Assessment of Temporary Relocation in Haiti*, (Sun Mountain International, 2010) did include consideration of some inter-linkages.

<sup>8</sup> A PEA may consider secondary impacts but only focus on a specific programmatic area and not on all programs contributing to the recovery effort.

<sup>9</sup> See Sphere Project, 2011, p. 61 and elsewhere for a discussion of post-disaster assessment; and Bollin and Khanna., 2007.

providers, as well as work to polish and refine any outstanding issues, before the report is officially released.

In many cases, the recovery plans include actions to improve conditions existing before the disaster (the *build back better* mentioned above). The recovery plans may also be segregated into phases such as *early recovery* (recovery actions which should start immediately) and longer term *reconstruction*.

The environment is usually included in this damage assessment and recovery planning process in two ways:

1. as direct damage to specific aspects of the environment – eroded hillsides, damage to beaches or reefs, etc., for which specific recovery aid is needed; and
2. as a cross-cutting issue, where it is noted that the environment should be integrated into all other recovery activities.<sup>10</sup>

Recovery plans may also include projects to address longer term environmental degradation, for instance through increased tree planting or erosion control, or improved waste management. These types of projects are the environmental manifestation of the *build back better* concept as they often go far beyond addressing the actual damage attributed to a specific disaster and may be justified as efforts to reduce the risk of future disasters.

The formal government-level damage and needs assessment often takes place in parallel with recovery planning by non-governmental organizations (NGOs). These parallel efforts are at times intentional as NGO may not want to be associated with the official process, have insufficient staff to dedicate to a month-long assessment and recovery planning process, have purpose-specific mandates (e.g. displaced children) which do not appear to need connection to a larger recovery planning effort, or any combination of these reasons. This said, the official needs assessment and recovery process often goes to great lengths to include a range of official and non-official actors.

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<sup>10</sup> Other cross-cutting issues may include age, physical or health status, gender and disaster risk reduction (see Sphere Project, 2011, p.14-17.)



Where this inclusiveness can be strained is when organizations not normally involved in relief, recovery or development seek to become involved. This is often the case with environmental NGOs, which are often seen as apart from the developmental mainstream and with little relevancy to (or experience with) the focus of restoring livelihoods and social systems following a disaster. (In some cases, the same question of relevancy is posed for the involvement of governmental environmental structures apart from a focus on repairing past environmental damage.)

Normal environmental review procedures are not often followed as part of the damage assessment and recovery planning process. If not waived due to the urgency of the recovery efforts, environmental reviews usually only take place at the level of project design with some follow-on environmental monitoring and evaluation. However, the application of environmental reviews at the project level is uneven, with the urgency of recovery often used as a justification to skip the environmental review process.

#### **4. Strategic Environmental Assessment and Disaster Recovery**

As noted above, Dolcemascolo (2010, p. 10) has identified a set of issues which can prevent doing an SEA following a disaster. These issues can be summarized as:

- lack of a “chain of command” in the disaster impacted area;
- difficulty of securing support for an SEA;
- limited information about and access to the disaster area;
- difficulty in securing experts to support the assessment work; and
- difficulty in getting consensus on long-term recovery needs while the disaster survivors are focused on immediate survival.

Further, the time needed to complete an SEA may seem to be too limited given a need to begin recovery as soon as possible. Each of these issues is discussed below.

**Time Available.** As indicated above, up to 30 days are usually allocated to doing a post-disaster needs assessment and developing a recovery plan, followed by a month of consultations. Interjecting another month for an SEA into this timeline is impractical. The alternative approach is to manage the SEA

process in parallel with the assessment and recovery design process. Because the assessment and recovery plan development process is often managed through a number of sectoral working groups (e.g. shelter, infrastructure, health), these groups can be monitored on a real-time basis, with a resulting review of environmental issues which might be arising.

These real-time reviews can both feed back into the work of each sectoral group and provide the basis for comparing environmental interactions between and beyond sectors. This interaction would also be useful in highlighting ways in which environmental issues could be integrated into recovery planning.

Two other factors make the real-time approach workable. First, the objectives being addressed by the recovery effort are usually very simple and clear: to recover from the disaster, and to make things better after a disaster than before (the *build back better* concept mentioned above). Thus, the SEA does not have to define what should happen, but focus on the impacts of how these objectives will be met. Second, although each recovery effort is different, many of the impacts of disasters are similar and lead to similar focuses in the recovery process. The SEA process can learn much about the positive and negative environmental issues related to recovery from previous disasters. For instance, the large-scale rebuilding of physical infrastructure on an island will face a challenge in finding adequate stocks of sand in a way which does not damage the environment (an issue which arose in Sri Lanka as well as Haiti, and may arise in New Zealand and Japan).

**Chain of Command.** Even in countries with weak governance capacities, a “chain of command” for managing a disaster response is usually established within a week post disaster. Where local and national capacities are not strong, the United Nations would likely establish the “Cluster Approach”<sup>11</sup>, a structure for coordinating international relief and recovery assistance. In addition, most large disasters would lead to a Government-UNDP-International Finance Institution (e.g. World Bank) post-disaster needs assessment<sup>12</sup> which provides an official structure for assessment and recovery planning within which the development can occur.

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<sup>11</sup> See <http://onerresponse.info/Coordination/ClusterApproach/Pages/Policy%20and%20Guidance.aspx>.

<sup>12</sup> See <http://www.recoveryplatform.org/pdna/>.

While there may be confusion about the chain of command, this confusion normally settles out into an overall disaster response management structure within a few weeks after the disaster. If this structure is not established by the government, it will be established by the international assistance community.

An exception is where a country refuses to respond to a disaster or allow external assistance. Even where a country may significantly limit the involvement of foreign organizations in on-the-ground relief and recovery, there is usually a coordinating structure operating outside the country through which a SEA can be managed.

**Support for an SEA.** Difficulty in securing support for a post-disaster SEA is likely to be due to two reasons:

- decision makers do not understand the value of an SEA (and may not even know what SEA means); and
- concern that the time needed to do an SEA will slow the development of recovery plans and implementation of recovery projects.

The second issue can be addressed by doing the SEA in parallel with the recovery assessment and planning process, as described above. Addressing the first issue can be accomplished through a combination of:

- awareness raising focusing on the damage done by poor recovery planning and the standard that recovery *do no harm*<sup>13</sup>; and
- highlighting the strategic nature of the SEA process and advantages from getting the strategy for recovery right.

These efforts need to take place before a disaster and target key decision makers in deciding how recovery-focused assessments will be organized and how the results will be packaged and used. In these efforts, calling attention to how an SEA can prevent harm and improve recovery planning is important to linking the SEA process into the core precepts of humanitarian assistance.

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<sup>13</sup> The *do no harm* concept in humanitarian assistance first focused on how aid could contribute to conflict or could be used to reduce the potential for conflict (see Active Learning Network for Accountability and Performance in Humanitarian Action, no date; Collaborative Learning Projects, 2004; and Anderson, 1999). The concept has evolved to apply to all humanitarian assistance, in that humanitarian assistance should not cause harm to the disaster survivors. Poorly planned recovery is more likely to do harm than well planned recovery.

**Information and Access.** In reality, the post-disaster period is often a period of too little information as well as too much information, and not always the right information. At the same time, it is usual that extensive assessments are under way within two weeks after a major disaster. Developing an SEA in parallel with the recovery needs assessment and planning process, as described above, allows the SEA process to have the best available information and use experience from other disasters to gauge the impacts of recovery plans.

What is critical to managing information, and the use of the disaster information which does become available, is to clearly understand the minimal information requirements for a post-disaster SEA. In this context, it is useful to apply the concept of optimal ignorance,<sup>14</sup> that is focusing on what are known to be critical types of information needed for a post-disaster SEA rather than attempting to collect and make sense of all the available information.

Access to disaster-affected areas can be a problem immediately after a disaster. However, opening access to the disaster-affected areas is often one of the top relief and recovery priorities. Again, within two weeks most major roads are open following events such as earthquakes or flooding, or alternative means of access have been established (for instance through the use of helicopters). Reasonably easy access to more rural areas can take weeks or sometimes months to be re-established, but means of access, particularly helicopters, are usually available until reasonable road access has been re-established.

**Availability of Experts.** Finding competent experts who are available at short notice is a challenge for any disaster response. The staffing approach needs to be different post-disaster than for a normal SEA.

First, the range of experts needed for a post-disaster SEA should be more selective than for a normal SEA. For instance, a disaster recovery effort can involve actions in the areas of shelter, road, water and sanitation systems, urban planning, agriculture and rebuilding industry. Thus, while the range of experts

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<sup>14</sup> Optimal ignorance was espoused by the noted geographer and hazard researcher Gilbert F. White. See Hinshaw, 2006.

needed may be greater than a sector-specific SEA, the disaster SEA team should be limited to those experts with direct knowledge of the specific recovery issues arising from the disaster of interest.

Second, not all experts need to be at the disaster site, or at the site for the full length of the SEA development. In practical terms, this means that some of the conceptualization or review work of the SEA can be done as desk work on a part-time basis (and likely taking advantage of video conferencing to bring together the full SEA team). This permits engaging a wide range of experts but not having to require them to drop everything and travel to the disaster. In a similar manner, some of the SEA work may require only 5 days on site, with follow-up off site. This short time approach would provide experts with a feeling for local conditions but means they would not have to miss their normal work for any significant period of time.

Third, a disaster SEA needs to have access to a large roster of potential experts to ensure that both on-site and off-site expertise is available in a timely manner (normally from the second/third to eighth/ninth weeks after a disaster). This roster does not need to be made up of disaster experts but rather experts in the various fields involved in a recovery effort, including housing, infrastructure (roads, buildings, electricity, etc.), transportation, economics, business and livelihoods support, natural resource management, health, planning (urban and rural), education, security and a variety of experts in the social sciences. While developing this roster may seem a challenge, many of the experts in the fields needed for an SEA are available from the range of international and national developmental and international finance organizations involved in development assistance, as well as academia worldwide.

**Reaching Consensus.** The apparent chaos of the post-disaster period can seem to make reaching a consensus on recovery goals difficult. In reality, there is usually a rapid agreement among disaster survivors (and their governments and most donors) about what needs to be done post-disaster: to rebuild as quickly as possible and to make things better (safer) than before the disaster. The challenge comes in reaching consensus on the details of how this is to be done.

Consensus on the final details of the recovery process is not really a direct concern of the SEA effort. Given the presumed agreement on the overall goals and the development of a recovery plan which the SEA process can review, the outputs from the SEA can contribute to discussions and consensus on how

to reach these goals. Program- and project-level environmental reviews can involve a process of consensus building down to the local level as recovery work proceeds.<sup>15</sup>

At the same time, the SEA effort (and the whole recovery planning effort) should secure input on recovery options from those who will be affected. This can be a real challenge due to the short time available to develop recovery plans which does not allow for the normal consultative process of published notices and formal public hearings. Alternative forms of consultation are available and can be expected to be effective at the strategic level to understand the expectations and concerns of those who will be affected by recovery plans. These alternatives include focus groups and key stakeholder consultations, both methods used commonly in the post-disaster needs assessment process. Advances in media penetration also provide expanded opportunities for consultation, including the use of TV and radio announcements and discussions, messaging via mobile phones and the use of the World Wide Web, particularly for inputs from those who may have moved from a disaster-impacted area.

## 5. Conclusions

This paper identifies and addresses a number of challenges to conducting a post-disaster SEA, including timing, chain of command, support for a SEA, information and access, the availability of experts, and reaching consensus on recovery goals and approaches. Ways to address these challenges have been identified. While these challenges, and the more general challenges of working in a post disaster-context, are significant, they are manageable through good planning, innovation and, most importantly, understanding how the post-disaster recovery context is different from the normal developmental context in terms of the timing and focus of a SEA.

The information provided in the paper indicates that a SEA can be done as part of the post-disaster recovery process, with a focus on recovery planning. This can be expected to improve the success of recovery planning by reducing unintended negative impacts on the environment, identifying recovery efforts which can improve environmental and social conditions and improving the overall efficiency of the recovery process. A post-disaster SEA should become part of the overall recovery planning process as another way to contribute to a reduction in the human suffering caused by a disaster.

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<sup>15</sup> This does presume that program and project impact reviews take place and involve a reasonable level of consultations in keeping with the Sphere Standards and standard environmental impact assessment processes.

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