



Integrating environmental safeguards into flood relief, response and recovery

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Cover Photo: <http://www.timesunion.com/world/slideshow/Pakistan-foods-1271.php#photo-10>
Pakistani villagers, along with their cattle, wade through a food water to safe area in Alipur near Sukkar on Tuesday, Aug. 10, 2010. The picture highlights the relationship between humans and animals.

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Pakistan has been affected by the worst floods in living memory – according to government figures almost 14 million people have been affected. When a disaster of such magnitude occurs, saving human lives, alleviating suffering and reducing economic loss take priority. During this phase of disaster management – **relief and response** - emergency needs, water supplies and sanitation, food aid, setting up shelters, health needs must be supplied in the shortest possible time.

Environmental issues are never considered during this phase. Barring rapid environmental assessments that are carried out in the aftermath of a disaster, at best, the role of biologists is minimal; at worst, non-existent during this period. At this stage, environmental concerns are seen as an unwanted luxury. This view is held even by many biologists concerned with environmental issues.

However, it can not be over-emphasised that during this phase, much environmental damage can be caused, endangering the sustainability of recovery and, in turn, rebuilding. During this phase, there can be a great deal of over-exploitation (for example, of timber) and much habitat destruction (for example, clear-felling forests to make temporary shelters) because the immediate goal is to get roofs over people's heads, at whatever cost. Also during this phase, the rush to get food and other emergency supplies

Why is the environment necessary for sustainable living?

- Start a process of separating degradable from non-degradable waste and recyclable and reusable waste.
- Ensure that incineration is not used as a method of waste disposal, as this contributes to global warming and air pollution.
- Actively train persons at shelters to dispose of waste responsibly.
- Provide safety training and involve communities in sorting waste.
- Ensure that those who are engaged in clearing debris have adequate protection in the form of gloves and boots as well as anti-tetanus coverage.

Guiding principles of Solid Waste Management:

- Putified for• - d d f

Type of waste	Potential use	Comments
Non-biodegradable waste		
Construction and demolition debris: such as aggregates, gypsum, tiles, asphalt, concrete, bricks, road masonry and stone.	Reuse tiles and bricks wherever possible. Impact and use for landfill and for road bases.	The debris should not contain hazardous chemicals or by-products.
Wood	Use in reconstruction or as part of vegetative matter. (See below.)	
Dirt (non-specific, including sand deposited by the floods)	Use as fill for potholes and eroded areas.	The dirt needs to be screened to remove other waste products.
Plastic (non-specific)	Send for recycling.	The debris should not include hazardous chemicals.
Metal (all types)	Send for recycling.	Cut or crush for easy transportation.
Asbestos	For careful disposal.	Should be handled very carefully when wet, bagged and buried. Masks should also be worn when handling asbestos.
Glass	Send for recycling.	
Biodegradable waste		
Vegetative waste, paper, spoiled food items etc.	Compost for land regeneration	Most waste should be shredded before composting in order to quicken the composting process.

Adapted from: Pasche and Kelly (2005), in IUCN 2005.

- Ensure that fuelwood and timber are obtained according to legally managed, plantation forests and not simply extracted unsustainably from the nearest natural habitat.
- Ensure that natural resource extraction for shelter and food is carried out according to existing legislation.
- Put up shelters only in areas that have been identified for the purpose.
- Avoid clearing natural habitats if they have not been identified for clearance.
- Avoid destroying connectivity of existing habitats.

During the Recovery and Rebuilding Phases:

Recovery is the activity that returns humans and built infrastructure to minimum living/operating standards and guides long-term efforts designed to return life to normal levels after a disaster. This includes building temporary housing and provision of basic household amenities.

Rebuilding is the long term response to a disaster. In this phase, permanent infrastructure is rebuilt, ecosystems are restored and livelihoods are rehabilitated.

ecosystem well-being and human well-being after the floods.

- If baseline data are available, comparison with these data will allow for clear analysis and informed decision-making.
- For example, is timber and sand extraction sustainable and legal?
- Sometimes there are only a few laws related to building and protected areas; in contrast, sometimes there are a plethora of relevant laws. Be familiar with them.
- Avoid using designs that are not appropriate and lack use of environmentally-friendly materials and climate-proofing.
- Avoid forcing culturally unsuitable designs onto communities. i.e., designs should be drawn up with community input.
- Ensure that gender concerns are integrated into designs, while making them environmentally-friendly and climate-proof.
- Ensure that sensitive areas/ecologically and economically valuable areas are not cleared for buildings or resettlements.
- Ensure that coastal/mountain morphology is not changed by built infrastructure.
- Check whether contamination from the flood has been cleared completely.
- Check whether the area is being polluted by the process of rebuilding and restoration.
- Check whether there is collection of non-biodegradable solid waste.
- Check how solid waste is being collected and disposed.
- Check whether an effort is being made to reduce, reuse and recycle waste.
- Check whether the air is being polluted by the process.
- Check whether air pollution control measures are in place.

- Before disposing debris, contact the relevant authorities for identification of recommended disposal sites.
- Prevent irresponsible dumping of waste.
- Provide safety training and involve communities in sorting waste.

• This is very important for long term mitigation.

