Serbia Floods May 2014

Environmental Issues

The Environmental Assessment, included in the UNDAC report, documents environmental contamination and concerns over surface water monitoring after mines and power plants etc. were flooded. However, there are other environmental impacts of the floods and landslides, as well as, opportunities for intervention embedded throughout the rest of the document. These issues are highlighted below.

Strategic Site Selection and Development Issues

1. It will be crucial to assess the safety of houses that are still in use but located on slopes where landslides are likely to happen during future heavy rains (page 6).

2. Remote settlements are connected with the routes/roads through visibly landslide risky areas, with the risk of having many areas cut off (page 43).

3. Some of the main routes to the city centers are being swiftly improvised/ repaired, with the need for the more durable solution (page 43).

4. Flooded rivers have damaged the drainage and sewage system (page 47). (Also see Disaster Risk Reduction).

Primary environmental considerations:

Is it safe to rebuild and promote development in the affected areas?

Site selection should take into account hazards, such as flooding and landslides (GRRT Module 4, page 19). *The period of recovery and reconstruction following a disaster represents an important opportunity to rebuild communities in ways that reduce disaster risks and increase sustainability for people and the environment. For instance, some communities affected by Hurricane Mitch in Honduras were relocated away from flood zones, and the site development incorporated park areas and open space that improved the quality of the local environment* (GRRT Module 4, page 6).

Reference:

GRRT Module 4: Strategic Site Selection and Development – http://green-recovery.org/wordpress/wp-content/uploads/2010/11/Module-4-Content-Paper.pdf

Water and Sanitation Issues

1. The clean water is supplied by the water tanks, while the technical water supply is yet to be restored (page 53).

Primary environmental considerations:

Is the water coming from a sustainable source?

The source of bottled water as well as other supplies and donations should be considered. Overextracting a water resource by exceeding available groundwater or surface water supplies. If many new groundwater wells draw from the same aquifer, over pumping can reduce the groundwater resource. If several government programs or organizations are working in the same aquifer (or watershed) and do not coordinate, this can lead to overuse and unsustainability. This also applies to surface water (streams and rivers) withdrawal and spring catchments (GRRT Module 7, page 6).

How far is the water being transported?

Use local sources – where this can be done in a sustainable way. Local procurement of materials can be a more environmentally sound strategy than the procurement of distant materials because of the savings in transportation costs and packaging. When using local materials, however, project managers should make sure that extraction, processing, and use do not put people's health or environment at risk (GRRT Module 5, page 2). Supplies can also be stored at strategic distribution points to minimize transport distance.

2. Clean-up of debris (page 11)

Primary environmental issues:

Where and how is disaster debris being disposed?

Inadequate solid-waste disposal plans or systems, including medical and household waste. Improper segregation and disposal of medical and nonmedical waste increase the chances of transmission of infectious diseases. Pollution of soil, air (burning), and water from improper trash disposal can also lead to serious human health and environmental effects (GRRT Module 5, page 7).

Can any of the debris be reused in rebuilding or recycled?

Use disaster debris as a reconstruction material. One of the most environmentally sustainable options for construction projects in a post-disaster setting is the reuse of building materials found in disaster debris. If using disaster debris, project managers must ensure that the debris meets applicable specifications for strength and safety (GRRT Module 5, page 2).

Use materials with recycled content. Recent technological innovations have led to the availability of building materials that contain recycled content. For example, fly ash from coal-fired power plants can be incorporated into cement production. Project managers should consider using building materials with recycled content where practical to reduce demand on natural resources and lower the project's human and environmental impacts (GRRT Module 5, page 2).

References:

GRRT Module 5: Materials and the Supply Chain
http://green-recovery.org/wordpress/wp-content/uploads/2010/11/Module-5-Content-Paper.pdf

GRRT Module 7: Water and Sanitation
http://green-recovery.org/wordpress/wp-content/uploads/2010/11/Module-7-Content-Paper.pdf

Disaster Risk Reduction Issues

1. Based on hydro-meteorological analysis and the performance assessment, a careful check needs to be carried out on the entire flood protection system along the Sava and its tributaries to define potential no-regret improvements to the dike system (page 12).

2. Flooded rivers have damaged the drainage and sewage system (page 47).

Primary environmental issues:

Are non-structural or natural measures being considered for flood management?

Hard measures such as dikes, levees, and increasing drainage system capacity can also be used in combination with non-structural measures, such as early warning systems, and natural measures such as rain gardens, and detention basins. Increases in vegetation and pervious surfaces in urban areas can help reduce storm water runoff, decrease the strain on drainage systems and reduce flash flooding.

Where can ecosystem-based activities be used to reduce future risk?

DRR and the environment are linked. In many cases, the root cause of disaster risk is a degraded environment. The use of environmental management to reduce disaster impact is often less costly, more effective, and more socially sustainable than more traditional structural measures. When structural disaster risk reduction activities are used, however, it is critical that they address environmental sustainability so that future risk is not increased and neighboring communities are not adversely affected (GRRT Module 9, page 1).

There is a set of ecosystem-based activities for risk reduction that should be considered alongside more conventional, infrastructure-based activities. A few examples include stabilizing hillsides with vegetation, creating open spaces to absorb floodwaters, and restoring mangrove cover for coastal protection against storm surge. These approaches can be an integral part of disaster risk reduction planning that would also include early warning systems, response capacity, and infrastructure-based approaches (GRRT Module 9, page 2).

Reference:

GRRT Module 9: Disaster Risk Reduction
http://green-recovery.org/wordpress/wp-content/uploads/2010/11/Module-9-Content-Paper.pdf

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