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**RAPID EVALUATION OF THE ENVIRONMENTAL IMPACT (REA)**

**DISASTERS HAPPENED IN SAN JULIAN, BOLIVIA IN 2006**

**EXECUTIVE SUMMARY**

In February of the 2006, the most intense rains in the last 50 years caused the overflow of the Grande River, which produced a flood that covered an area of 103,000 Hectares in the Department of Santa Cruz, Bolivia.

Although the flood did not produce human losses, damage to houses directly, roads, and farming resources are numerous. Of the 18,000 people evacuated due to this natural disaster, 5,000 they were located in 8 camps in the community of San Julian.

The overflow of the river caused serious problems with the soils, water and flora and fauna of the region. In addition, the sudden population concentration in the camps of San Julian is aggravating the existing socioeconomic problems.

With an eagerness to maximize the benefits of the aid activities, CARE Bolivia in cooperation with Sun Mountain International have developed this Rapid Evaluation of Environmental Impact (REA). This Environmental Evaluation allows to CARE and their partners to have a global vision of most important current and potential environmental impacts caused by the same disaster and activities in response the emergency. The results of this process as intended to diminish, as much, the damages in the socioeconomic and ecological surroundings.

Besides following the traditional REA methodology, this document used field visits, interviews to the representatives of the victims and work with planning, atmosphere and social development authorities of the Prefecture of Santa Cruz.

The suggestions and recommendations presented in this document try to reduce the negative effects of the floods and to assure that any development activity causes the least possible environmental impact.

Due to the nature of the phenomenon provoked in San Julian, it was considered necessary to divide the process of overcoming of the emergency into three stages. In each one of these steps, measures are recommended that would contribute to obtaining more solid and effective assistances. Some illustrative examples of recommendations from the REA follow below.

**Stage of Emergency:** Focused basically to the handling of situations within the camps while the river returns to its normal channel. One is due to consider that:

- The handling solid waste should be done a to avoid the contamination of soils and water, and the proliferation of diseases, is important:

- To motivate the population to reuse the inorganic waste whereas for organic waste it is possible to produce compost.
- To collect waste that could not have been reused nor recycled and to arrange for their disposal outside the camps.
- In order to provide systems with water and sanitation, one is due to take care of:
  - Suitable planning of the water supply and evacuation system.
  - Repairing and/or improve the municipal water treatment system and to monitor quality of water every three months.
  - To promote the adapted use of latrines and to provide constant maintenance them.
  - To protect the water sources, particularly the one for the municipality, by means of fences in a radius of 50 meters and avoiding polluting agents.
- To temporarily maintain healthy animals in the camps and to diminish the potential for conflicts, it is important to cure their wounds and infections, maintain the animals in suitable corrals and to use manure to produce organic fertilizer. All this is with a view to moving the animals outside the urban sector more soon possible.

**Stage of Transition:** The activities to support people who return to their properties must consider that:

- When recovering productive systems, are important:
  - To coordinate actions with the Departmental Agricultural Service.
  - To enable producers on better environmental and agricultural practices.
  - To study and reduce the polluting concentration of organic waste, decomposing animals and chemical contamination in the fields.
  - To rehabilitate damaged infrastructures, mainly water wells, other systems, ways and houses.
- In order to disassemble the camps, it is necessary:
  - To use participative planning for the future use of the camps.
  - To design a plan of urban resettlement to locate to the people who do not return to their communities.
  - To privilege the reestablishment of the green areas in residential zones.

**Stage of Stabilization:** Long term activities intended to diminish the future vulnerability of the population. For this one is due to consider that:

- When designing a system of early alert for the region, is fundamental:
  - To permanently monitor the critical zones in the river basin of the river.
  - To promote community participation and information sharing.
  - To promote reforestation of critical locations in the upper river basin.
- In order to promote an integral handling of the river basin of the river, it is necessary:
  - To promote the application of the concepts of the Soil Use Plan ("PLUS").

- To reduce deforestation of the zone, and place a preference on more elevated zones which are less susceptible to flooding for the relocation of people.
- To plan the use of river resources (potable water irrigation or provision) and engineering solutions to recover and to protect the borders of the water courses.