

## **Joint UNEP/OCHA Environment Unit**

### **Floods Uruguay Rapid Environmental Assessment**

**UNDAC Mission, 14-30 May 2007**

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#### Disclaimer

*This is an unofficial interpretation of the main conclusions and recommendations made by the environmental expert associated with the UNDAC team and shared with national and UN country team authorities.*

#### Executive Summary

Flooding of rivers is a recurrent phenomenon in Uruguay, a country with extensive and irregular rains. However, in May 2007, the highest level of floods of the last fifty years was observed, passing 12 meters and affecting approximately 12.000 persons. Faced with the possibility of important secondary risks, especially from the environment, the Joint UNEP/OCHA Environment Unit - the United Nations mechanism to mobilize and coordinate the international response to environmental emergencies and natural disasters with major environmental impacts - in coordination with the UNDAC team – the United Nations Disaster Assessment and Coordination Team - ensured an rapid environmental assessment after the floods for any acute and life-threatening issues. As a result, no urgent environmental issues were identified. The observed impacts were linked to the already existing precarious conditions of the sanitary system, to the insufficient disposal of waste in the affected areas and to the irregular occupation of the risk areas, which are now aggravated by the floods. This report contains recommendations for the improvement of these systems as well for the establishment of a specific plan for environmental emergencies.

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#### Conclusions

No urgent environmental issues with an immediate or potential impact on human life and health resulting from the floods in Uruguay were identified. Nevertheless, the floods strengthened the already existing inadequate conditions of the drainage system of wastewater and of the disposal of waste, leading to an important health risk.

In the beginning of the emergency, the continuous rains led to a collapse of the urban sanitary system, spilling over in the streets and dwellings. Many people became displaced. Due to the swelling, the river waters, previously contaminated by the spill of the sanitary system, came into contact with drinking wells in almost all affected areas.

In Durazno, a sanitary treatment plant was flooded and led to the dispersion of excreta in the river basin and the affected area. In Mercedes, the floods affected a public waste site resulting in the scattering of the waste. In both locations, the irregular deposit of waste scattered over the city resulted also in the worsening of the contamination of the flooded site.

In addition to the general contamination of the flooded environment, kitchen utilities, clothes and mattresses were polluted. The emergency committees and the communities organized disinfections of those utilities with hypochlorite and the provision of other mattresses. The recollection of the waste and debris caused by the floods was also organized. However, due to the bad quality and the bad conditions, it was not possible to wait for transport teams to do that. Therefore, in many sites, waste was just accumulated in the streets, which became an additional risk for an increase of vector diseases. Monitor systems for this purpose were put in place by the National Health System.

In some sites, the presence of mosquitoes was observed: snakes, spiders and rats were present both during the floods as during the receding of the waters.

Septic puts were emptied in several locations. In Durazno an old, abandoned quarry, 5km away from the centre, needed to be used since the decantation tank was not accessible because of the floods. Also the cemetery was inundated in this community.

The drinking water plants were flooded and were closed during 8 days in Durazno and ten days in Mercedes due to possible contamination. In these locations, drinking water was supplied in tank trucks.

There were no observations of damage to stockbreeding and agriculture activities. Contrary to media reports, there was no considerable amount of animal death. Only a few animals were trapped in fences or canals.

The volume and the conditions of the river bed during the floods and the phase in which the water withdrew resulted in the impossibility of artisanal fishing activities, especially in Villa Soriano. In this village, around forty families are dependent on fishing as an additional way of income.

The three dams on the Río Negro (Gabriela Terra- Department Tacuarembó; Constitución; department Soriano/Paso del Palmar; Baigorria –Department Durazno) were not affected during the floods. However, at the same time these dams have a large weakness since they depend from a manual hydro metrological system.

The road network in the region was affected by the floods and has suffered different degrees of impact. Around 10 % of the total was severely eroded, 40 % half and 50 % slightly.

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## Recommendations

### *Short-term*

- Improve cleanliness and decontamination of the houses, streets and surroundings affected by the floods, starting with sufficient technical explanations on the use of chemical products as sodium hypochlorite.
- Establish a plan for the sufficient recollection and deposit of waste and debris.

### *Medium-term*

- Establish a National Emergency Plan with a specific chapter on Environmental Emergencies. This chapter should include standard forms on the evaluation of environmental impacts associates with several types of emergencies, including floods. The Joint UNEP/OCHA Environment Unit can provide guidance on this issue.

- Establish a control plan for floods departing from a set of structural and non-structural measures to provide the population living near the river the possibility to minimize their losses and to keep a harmonious living situation with the river. These include engineer, environmental, social, economical and administrative measures to be considered on the level of the hydrographic basin. The impact on one area should not minimize the one on another area. With respect to non-structural measures, the participation of the community is indispensable to take decisions and to promote education on the correct use of the soil, the deposit of waste and the maintenance of the environment.
- Interagency integration to strengthen efforts and to maximize results. Various governmental and academic institutions handle the subject on a non-integrated and non-coordinated manner. An effort to bring together these institutions needs to be implemented. For this issue, the UNDP office could play an important role
- Establish a Territorial Organizational Plan, starting from maps with risk areas likely to be flooded and respective environmental, social and economic vulnerabilities.
- Set up a database of potential secondary risks during floods by companies and installations. The document Environmental Risk Identification (formerly called Profile of Potential Environmental Risks- see annex), as prepared by the Joint UNEP/OCHA Environment Unit, can serve as a basis reference for this process. The Joint Unit can provide technical support in this process.