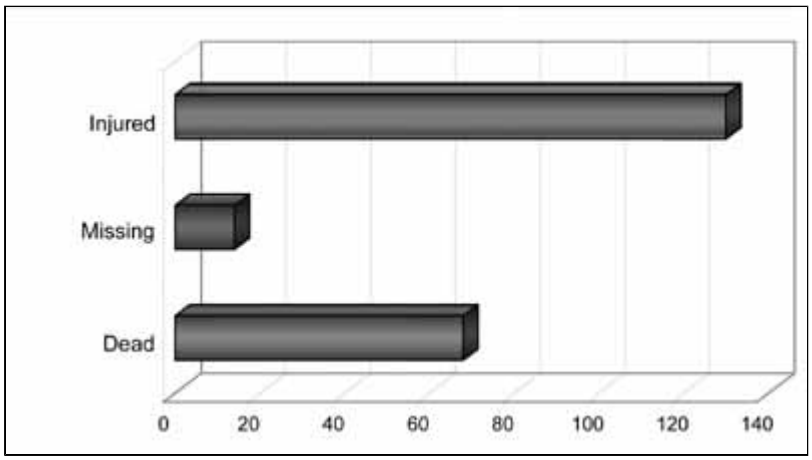
## The 19 February hailstorm –thoughts on the institutionalization of risk management in Bolivia

19 February 2002 will live on mournfully in the memory of Bolivians as the date of the worst hailstorm to hit La Paz in decades, causing untold death and destruction. A description of the event can be found in Box 1, based on the report by the National Meteorological and Hydrological Institute. The impact of the disaster in figures can be seen in Box 2.

After the storm was over, response was swift—even though the very seat of government had suffered unprecedented flooding. The solidarity of state institutions, international agencies, the private sector, civil society and ordinary individuals made it possible for the emergency to be faced and rehabilitation to begin almost immediately after the event.

Now that the crisis is over, we can be grateful that the cooperation among public and private institutions, volunteers and the community in search-and-rescue efforts, logistical support, and the establishment of contingency plans, regulations, and procedures at least prevented the disaster from being even more devastating than it was.




Law No. 2140 of October 2000, on Risk Reduction and Disaster and Emergency Response, and Law No. 2335 of April 2002, which amended and complemented it, were the basis for the implementation of a new vision of institutionalized risk reduction in the form of the National System for Risk Reduction and Disaster and Emergency Response (SISRADE), whose mission is to reduce the human, economic, physical and environmental losses caused by disasters and to rehabilitate and rebuild the affected areas through the interaction of the various components of the System, the clear assignment of responsibilities, and the integration of public and private efforts at the national, provincial and municipal levels.

**Box 1**
**Description of the Event**

The city of La Paz lies on the foothills of the Andes and borders on the Bolivian

highlands to the West. At an average altitude of 3,600 m, the city was built in the 500 Km2-sized basin of the Choqueyapu River, which is fed by over 230 smaller rivers, brooks and gullies, making drainage erratic.

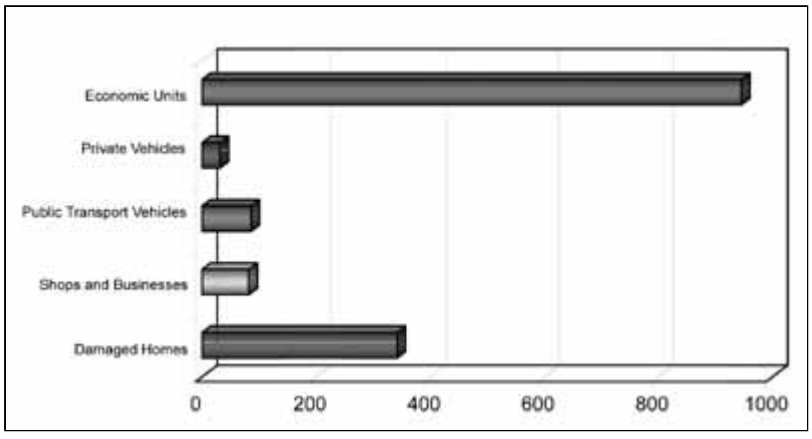
What makes La Paz vulnerable is the steep slopes on which it is built, the ancient rainwater drainage and sewage system, and the informal human settlements in the hills that would not comply with any safety building code.

When the sun rose on Tuesday 19 February, the sky was overcast and the temperature was 6°C. By 10 in the morning cumuli had begun to develop and by mid-day there were reports of cumulonimbus clouds building up in a NNW direction. Meteorological reports recorded the arrival of a cold front and significant atmospheric instability, hence the formation of cumuli and cumulonimbi. The convective super-cell that flew over the city from North to South generated electrical activity and a hailstorm of great intensity, unprecedented in the over 60 years in which records have been kept.

The hailstorm began at 14:20 and culminated at 15:50 with a total precipitation of 39.4 mm and a rapid drop in temperature to 3.5°C by 15:42. The high concentration of water and melting hail on the ground, together with the continuing rain, caused floods and mud- and hail-flows of extraordinary force and speed that damaged buildings and other property and took a heavy tool in deaths and injuries.

It is not easy to organize and institutionalize risk management. The task needs to take into account the degree of evolution and the organizational culture of government institutions and how they relate to civil society. While cooperation and assistance in response to the 19 February crisis was generous and timely, time was lost in establishing coordination and communication mechanisms where they did not yet exist.

Based on the lessons learned, here are a few thoughts on what to consider when attempting to institutionalize risk management.




1. The effective degree of decentralization at the various territorial levels (national, regional, municipal), including the mechanisms and processes that have been established by the relevant authorities for planning, managing and controlling available resources. The degree to which decision-making can be carried out autonomously by the various components of the system defines the attributions of the different authorities, their role, and their responsibilities in all tasks related to risk management.
2. The type of organizational structure of the government, i.e., whether it is based on the principle of functional specialties and jurisdictions, or whether it applies a more flexible and interinstitutional work matrix to the mechanisms for assigning tasks and responsibilities in such areas as regulation, control, management, implementation, and so on. Such an examination will provide

the tools for identifying horizontal communication and coordination mechanisms across agencies, as well as vertical ones from the local to the national level and the other way around.

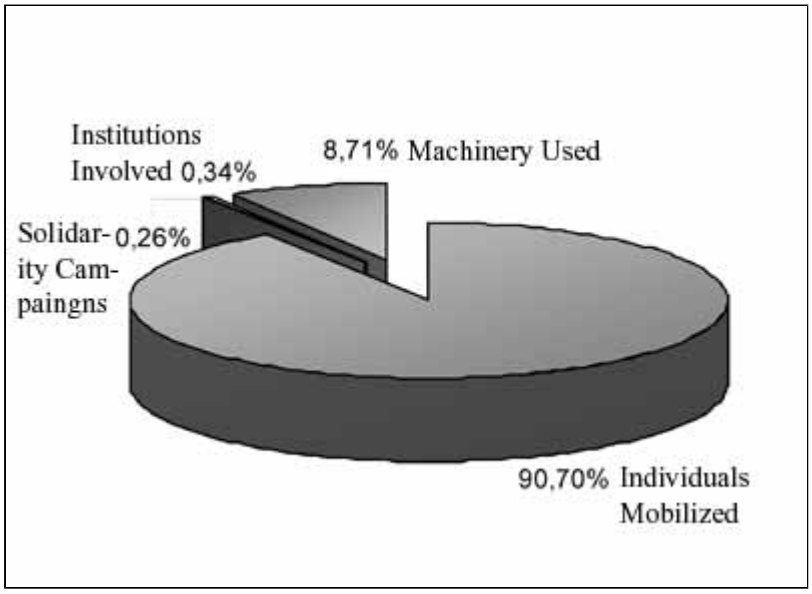
3. The existing follow-up and control mechanisms for allocating and distributing financial, material and human resources. In order to establish clear policies on the allocation of resources in emergency or disaster conditions, the laws and regulations must be transparent, responsive, and effective.
4. The degree of citizen participation in planning, resource allocation and social oversight. This is a sine qua non for ensuring the sustainability of risk management as a part of development planning, because it reassures citizens that their concerns and knowledge are being taken into account and helps them to "own" the process of disaster prevention, mitigation and response. It also contributes to establishing effective networks for awareness-raising and the dissemination of a culture of prevention.
5. The degree to which the various authorities are democratically elected and accountable at the various levels. Like any other social process, disasters reveal the degree to which responsibilities are willingly shared by the government and the citizenry. Unlike other social processes, disasters can severely hinder effective governance if citizens do not feel that their authorities represent them and their wishes.
6. A mapping of substantive processes and results from planning, monitoring, follow-up and oversight activities. Current management theory postulates that organizational structures, functions, and responsibilities must be assigned based on a clear identification of the "customers" or target groups, their needs, the most effective ways to meet them, and the resources needed. This approach can help to identify critical decision, action and control points where risk assessment and management can come in.

**Box 2**

| **Damage Caused by the Event** | |
|---|---|
| Dead | 68 |
| Missing | 14 |
| Injured | 130 |
| Damaged homes | 342 |
| Damaged shops and businesses | 82 |
| Damaged public transport vehicles | 86 |
| Damaged private vehicles | 31 |
| Damaged economic units (formal commerce and street commerce) | 945 |
| | |
| **Resources Mobilized** | |
| Individuals mobilized | 10.313 |
| Solidarity campaigns organized | 29 |
| Institutions that participated | 39 |
| Machinery employed | 990 |
| | |
| **Financial Resources (in US$ millions)** | |
| International cooperation | 16.7 MM $us |
| National cooperation | 5.4 MM$us |
| La Paz municipal government | 3.2 MM$us |
| Total | 25.3 MM$us |

All of these issues have figured prominently in the discussions under way in Bolivia to make SISRADE fully operational in such a way as not to encourage organizational rivalries and structural conflicts that may hinder effective risk management.

Once the rules have been agreed upon, it is the hope that adverse situations such as that of 19 February 2002 will not have the same cost in lives and assets for the population of Bolivia.

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