

## **The Great Mother destroys her home**

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Recent floods in the Valley of Indus river have caused damages of biblical proportions. Bridges and roads were destroyed, thousands of hectares of productive land were washed away and countless houses and shops disappeared.

According to UN sources the humanitarian crisis is somewhat larger than the three natural disasters of the last decade together. These disasters include the tsunami in Indonesia and the earthquakes in Kasmir and Haiti. The toll of 1700 killed people in the Indus floods is rather misleading, hiding the real scale of the catastrophe which displaced more than 14 million people.

Indus river valley is the home of more than 100 million people who rely on it completely for drinking water, irrigation and other water consuming activities. For the people of the valley, Indus is the "Great Mother".

The statistics of recent natural catastrophes show that the number of events, the number of lives lost and the magnitude of damages in the infrastructure and the economy grow exponentially with time. Obviously each case has its own characteristics which influence mainly the vulnerability of the society and the environment to withstand or trigger the natural hazard. However talking about floods, the two more or less common factors which cause catastrophic floods are:

- a) The magnitude of the natural hazard that is the high intensity and the large depth of total precipitation. In the case of the Swat valley (within Indus river basin), a depth of several hundred millimeters of torrential rain was recorded over a 5-day period which is an incredible amount of rain.
- b) The mismanagement of Indus basin in which more than 100 million people live. As it is known, Indus is one of the great rivers of the world with a total length of 3200 km starting from the Tibetan plateau and

discharging into the Arabian Sea. It is also known that extensive deforestation has been taking place for decades leaving the slopes of the river unprotected. As a result, no obstacles can delay the surface runoff, creating conditions of uncontrolled floods in the low productive lands. There are reports for organized deforestation driven by a "timber mafia" according to a Guardian report from the area.

Therefore heavy rain and large amounts of sediment and mud created an incredible catastrophe. The concentration of sediment carried by the river is so high that the biggest earth-fill dam of the world, the Tarbella dam constructed on the Indus river, is gradually filled with sand so it practically works as a run-of-river structure.

As time goes by, it becomes evident that countries cannot afford to protect their people from natural hazards which are increasing in magnitude and frequency. The humanitarian crisis caused by the floods in Pakistan show that unexpected events with incredible magnitude can happen anywhere but they are more catastrophic in cases of environmental mismanagement and non-existent preparedness. *Proactive planning* of each country and well organized international cooperation is probably the fundamental efforts for preventing or mitigating natural disaster in an uncertain and probably worse future.