WHAT HAS CHANGED AFTER GUJARAT EARTHQUAKE 2001?

V. Thiruppugazh
Joint Chief Executive Officer
Gujarat State Disaster Management Authority, India

On January 26th 2001, an extremely severe earthquake of Magnitude 7.7 Mw (USGS) occurred in Gujarat. The effect of the earthquake was felt throughout the Indian sub-continent. Over 7,000 villages in 19 districts were affected either severely or moderately. 13,805 people lost their lives and more than 1,67,000 were injured. About 1.2 million houses were damaged partially or completely. Social infrastructure and public infrastructure were severely damaged. More than 1,000 health units and 12,000 schools were damaged. Roads, bridges, Public buildings, Dams and irrigation structures were also affected severely. The total primary loss was about US $3,189 million and the secondary loss was about US $ 635 million and the tertiary loss was about US $ 2,097 million.

After the initial relief phase, Government of Gujarat launched a massive reconstruction and rehabilitation program in the affected areas. It was a great challenge to conceptualize a massive reconstruction program, yet within a very short period government announced a comprehensive reconstruction and rehabilitation policy which included assistance for restoration of private houses, economic rehabilitation, and reconstruction of public infrastructure, prepare the people to face disasters through community participation and multi hazard preparedness programs; human resource development; and livelihood support, based on sustainable economy and ecology. Gujarat State Disaster Management Authority was created as the nodal agency to implement the massive reconstruction program

The task accomplished
- Over 9,08,710(99%) houses repaired and 1,97,091 houses (89%) houses reconstructed
- 42,678 schoolrooms repaired (100%)
- 12,442 Schoolrooms reconstructed (152%)
- 3,391 public building repaired
- 1,245 public buildings reconstructed and work in 562 buildings in progress
- 5,223 km of transmission and distribution lines repaired
- Repair/reconstruction of 640 km of state highways & 3,061 km of rural roads completed
- Laying of 2,750 km of water supply pipelines including drilling of 222 deep tube wells
- Restored the livelihood of 2,00,000 families

Better houses, upgraded infrastructure, good hospitals and schools can certainly be counted as something that has changed for the better in the earthquake affected areas. A benefit monitoring study done through a third party captures the benefits, which have accrued to the affected people very well as outlined below.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Before the earthquake</th>
<th>After the earthquake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Pucca houses</td>
<td>66%</td>
<td>100%</td>
</tr>
<tr>
<td>Beneficiaries living in homes with separate toilets</td>
<td>32%</td>
<td>53%</td>
</tr>
<tr>
<td>Insurance of reconstructed houses</td>
<td>6%</td>
<td>49%</td>
</tr>
<tr>
<td>People knowing what to do before, during and after a disaster</td>
<td>0%</td>
<td>80%</td>
</tr>
<tr>
<td>Employment level among women</td>
<td>42%</td>
<td>92%</td>
</tr>
<tr>
<td>Water supply through pipelines at home</td>
<td>30%</td>
<td>34%</td>
</tr>
<tr>
<td>Quality of life index</td>
<td>1.00%</td>
<td>1.143%</td>
</tr>
</tbody>
</table>
Though the changes as reflected by the benefit monitoring study is impressive, what really can be counted, as the most important change is the approach and attitude of government and people towards disaster management itself.

Before Gujarat earthquake the disaster management was basically governed by Gujarat Relief Manual”. The entire approach was to provide relief after the occurrence of the disaster as per the guidelines laid down in the Relief Manual.

The Gujarat earthquake resulted in a paradigm shift in the policy of the Government from relief and humanitarian assistance oriented post-disaster intervention to a pro-active prevention, mitigation and pre-disaster preparedness. Comprehensive Gujarat State Disaster Management Policy was declared in November 2002. Legal and Regulatory requirement for effective disaster management resulted in enactment of the Gujarat State Disaster Management Act in March 2003. Gujarat is the first State in India to enact an act for disaster management.

Long-term disaster management capacity building has been made part of the reconstruction and rehabilitation program not only to ensure sustainable reconstruction and rehabilitation but also to reduce vulnerability and reduce risk. Various structural and non-structural measures and training and capacity building measures have been initiated on a large scale in Gujarat which has permanently changed the way the government and the communities cope up with disasters in Gujarat.

The Gujarat earthquake did not only result in changes in focus from relief to mitigation and setting up of institutional mechanism for the same in Gujarat, but has brought about a major change at the national level towards disaster management. At the National level, emphasis now is being laid on disaster mitigation. The planning commission has recommended for utilizing 10% of the plan funds for pre-disaster mitigation and planning. A national level disaster management authority on the lines of GSDMA is being worked out at the central government level. Draft bill on National Disaster Management has been prepared. Many of the lessons learnt and best practices of Gujarat initiated after the earthquake is being replicated at the national level and at the state level in other states including setting up of disaster management authorities and enactment of bills etc.

The approach and process of Gujarat earthquake reconstruction is now being looked at as a model for reconstruction in the earthquake affected areas in Bam and Tsunami reconstruction in Srilanka, Indonesia and in the tsunami affected south Indian states.

The various initiatives undertaken for integrating reconstruction and long-term disaster management capacity building have resulted in a major change in the way reconstruction programs are being done in India and the neighboring countries. This has in turn resulted in a major shift towards prevention and mitigation of disasters from the age-old relief oriented disaster management in India.