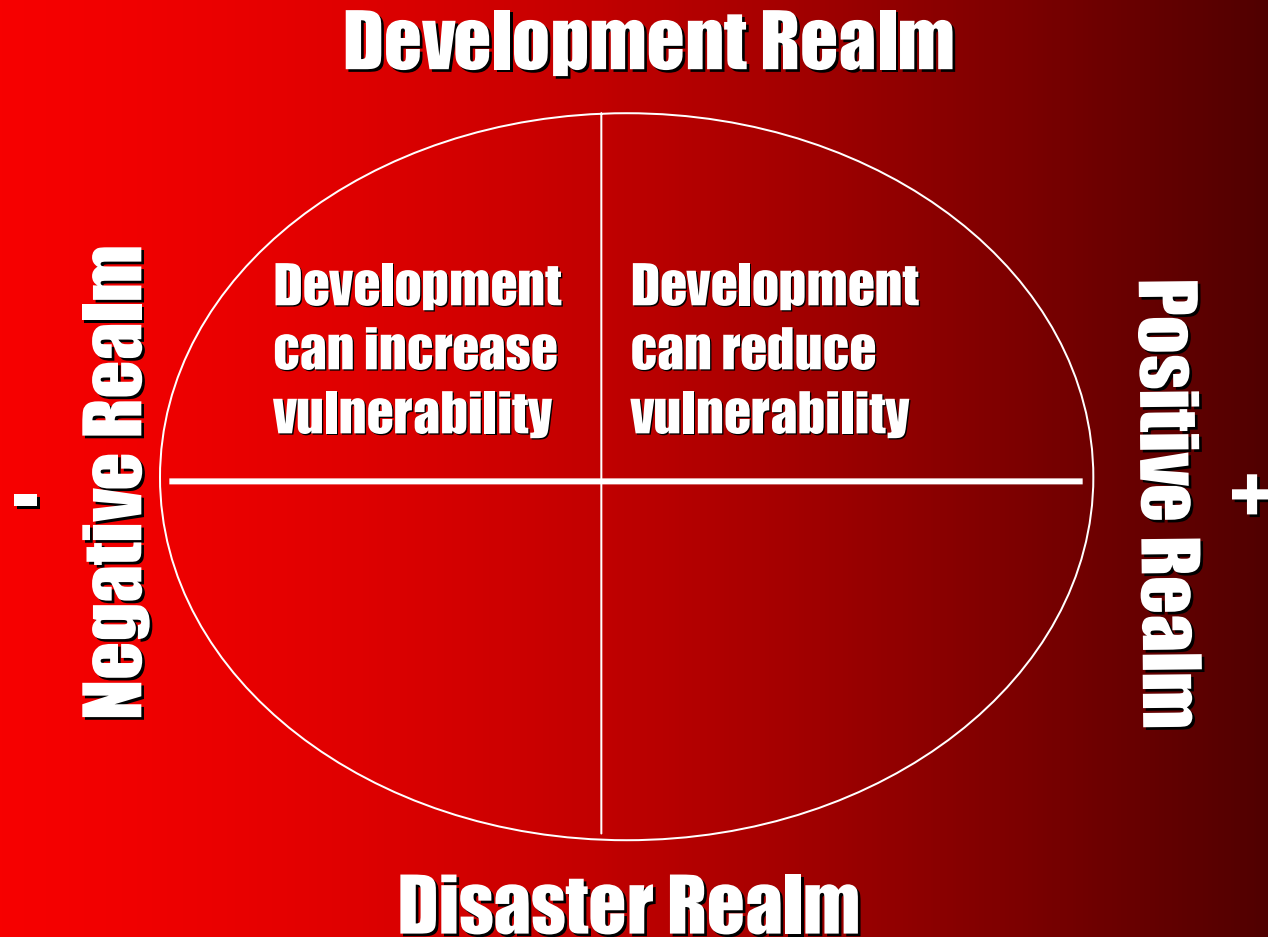
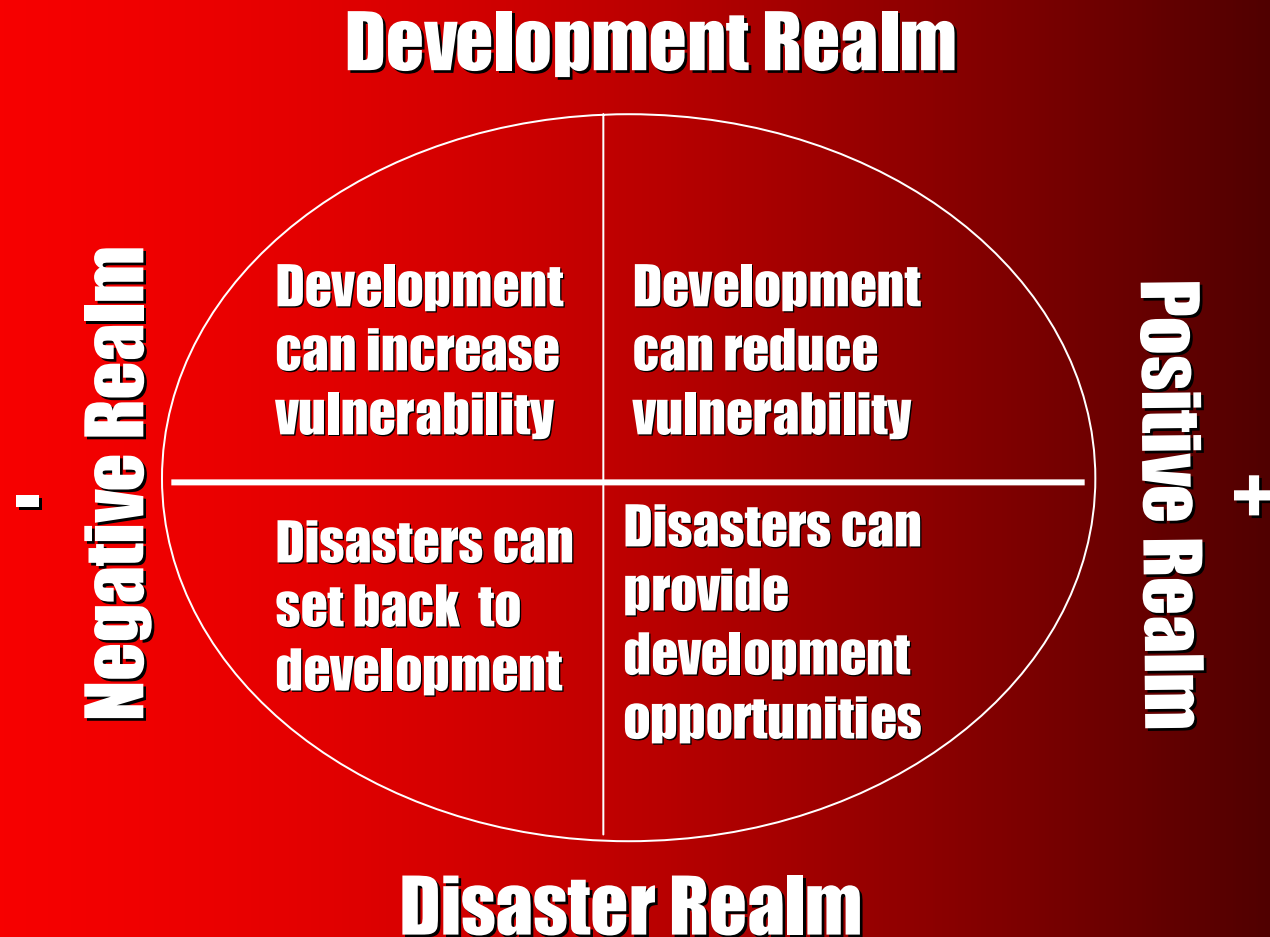


**Planning for Rehabilitation
and Reconstruction :**
Key Considerations

Disaster and Development



Disaster and Development



Objectives

1. Immediate

Return to normalcy

2. Medium to Long-Term

Increase the level of safety/protection of lives and property in a multi-hazard-prone state

3. Overall

Maximize the involvement of communities and community organizations

A. Service Infrastructure

- **Urban**

- Repair immediately to functional status
- Conduct detailed systems analysis for upgrade or possible installation of new safer systems – cost-benefit analysis to be based on increased safety, better coverage, increased capacity for future development

- **Rural**

- Carry out systems upgrade during repair to minimize cost

B. Income Generation

- **Urban**

- Conduct structural assessments to certify buildings so that businesses can reopen in usable buildings
- Minimize power/water/telecommunications service interruptions during the repair period
- Consider supporting a Jobs Bank/Exchange or Information Center to assist in matching the jobless with work opportunities
- Support projects which generate income within the affected areas
- Speed the approval of loan funds for disaster-affected businesses

B. Income Generation

- **Rural**
 - Ensure restoration of power/water/tel. (or availability of generators)
 - Assess need for temporary business sites. Consider designating a clear central site
 - Support NGO's and local community groups in organizing livelihood activities

C. Housing

- **Short-Term**

- Temporary shelter for those who have lost homes
- Out-migration to other urban areas, stressing services there
- Protection of belongings
- Structural assessments of damaged buildings
- How/where to restart income-generating activities
- Joint decision making about relocation of town/village
- Recover of building materials and removal of debris
- Reconnection of utilities

C. Housing

- **Medium-Term**

- Land tenure/ownership issues
- Financial/material resources to rebuild
- Timing
- Access to shelter information/experience in improved construction
- Inclusion of building standards for seismic areas for all types of construction

C. Housing

- **Long-Term**

- Upgrading of building code; preparation of building standards for specific areas
- Training related to the standards
- Training and required resources for inspection/enforcement
- Review/upgrading of construction materials standards, quality control

D. Schools

- **Return to function as soon as possible**
- **Conduct structural assessment and perform repairs before reopening damaged schools**
- **For more heavily damaged schools, do not reopen until repair and retrofit are complete**
- **Incorporate earthquake resistant construction techniques during construction of all new school**

E. Tourism

- **Ensure that workforce, transport and services are available and functioning normally.....**
- **Facilitate structural assessment and appropriate repair to hotel, guesthouses, sites of historic interest, etc.**
- **Communicate restoration of services & positive approach of media**
- **Conduct a detailed study of retrofit and other protection options specifically for cultural monuments and historic sites**

**Institutional
Arrangements for
Reconstruction
(Gujarat Experience)**

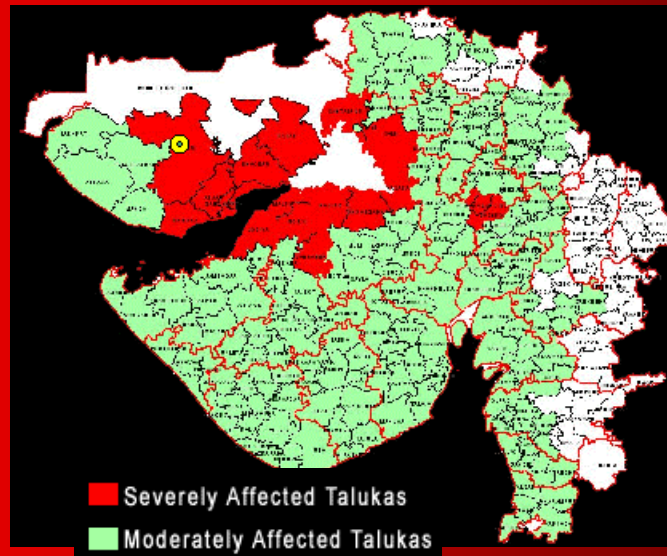
26 January 2001: The Terrible Human Tragedy

Earthquake of magnitude 6.9 on Richter scale

One of the worst earthquakes in the last 180 years

Over 11,00,000 homes affected by the calamity

Over 10,000 small and medium industrial units went out of production
50,000 artisans lost their livelihood



Reported lives lost 13,805

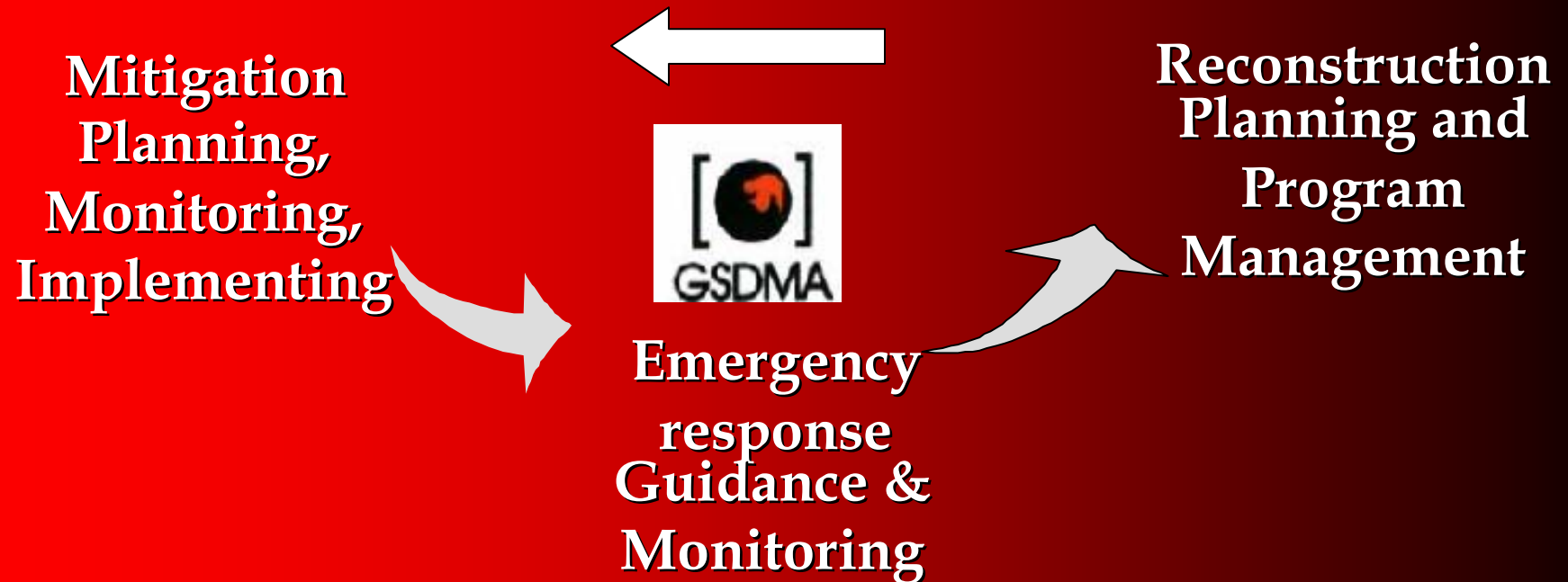
167,000 persons suffered injury

Around 50,00,000 people needed to be given immediate relief

Over 2000 schools, 300 hospitals destroyed

To co-ordinate the massive effort, a nodal agency was created –

Gujarat State Disaster Management Authority



... which effectively co-ordinates with all the entities associated with disaster management

PROJECT SCOPE & OBJECTIVES

- Promoting sustainable recovery in the disaster-affected areas, and
- Laying the foundation for sustainable disaster management capacity in Gujarat.

PROJECT OUTCOME

- Sustainable rehabilitation and reconstruction
- Reduced vulnerability through multihazard-resistant structures;
- Increased community risk awareness and preparedness for natural hazards through access to enhanced knowledge of hazards and disaster reduction techniques; and
- Enhanced emergency preparedness and response capacity leading to safety of lives and property.

RECONSTRUCTION & REHABILITATION

The reconstruction program has been designed to address the needs of beneficiaries comprehensively...



REHABILITATION POLICY

Short and Medium term Rehabilitation Policy...

28
Reconstruction
and
Rehabilitation
packages

Housing
(1.2 Million
beneficiaries)

Rehabilitation
of orphans and
women

Packages for
rural artisans

Packages for
capacity
building

Packages for
industry, trade
and services

Packages for
handicraft
artisans

Packages for
agriculture

Package for
tourism

MAJOR FUNDING AGENCIES FOR RECONSTRUCTION

Amount in Million US\$

World Bank	661
ADB	368
European Commission	37
The Netherlands	37
Go Gujrat	565
Go India	107
Others	70
TOTAL	1900

HIGHLIGHTS – Housing Reconstruction

- **Third party quality audit, whose inspected 2,38,785 houses**
- **Payment of installments after engineers' certification**
- **Joint ownership of house by husband and wife**
- **Insurance to 14 types of hazards**
- **Payment made directly in bank accounts**
- **Excise duty exemption for building materials procured in Kutch**
- **Minimal relocation and no secondary displacement**
- **Choice of relocation decided by village community**
- **Multi-hazard resistant reconstruction**

HIGHLIGHTS – Reconstruction

- Total houses repaired: **928,000**
- Houses reconstructed: **215,000**
- Public-private-partnership Housing Program: **42,528**
- Education – (Repaired): **42,678**
- Education – (Reconstructed): **8,212**
- **3560** additional classrooms have been reconstructed

COMMUNITY PARTICIPATION

- **Trainings and workshops**
- **Manuals**
- **Exhibitions**
- **Publications & audio-visual**
- **Benefit monitoring**

Benefit Monitoring

Findings of the survey

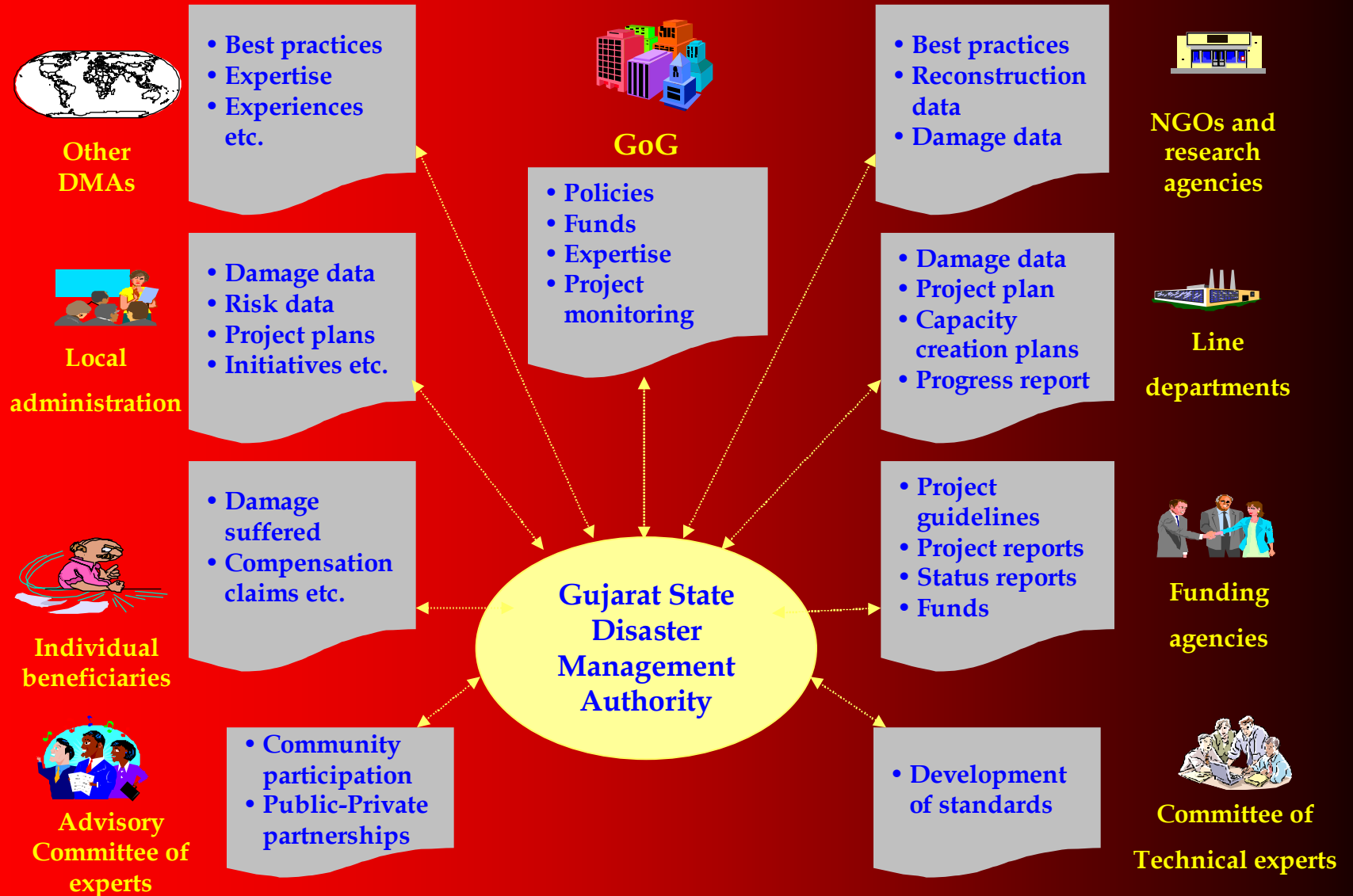
- The program has not only restored Quality of Life Index to the pre-earthquake levels but has also exceeded it
- Significant improvement in the number of better (pucca) houses. Overall sample has shown an increase of 35%
- 61% increase in beneficiaries living in homes with separate toilets
- Community and public infrastructure has been largely restored.
- Primary and secondary schools have been restored to pre-earthquake levels. More classrooms have been built in these schools.
- 57% beneficiaries are aware of housing insurance as compared to 6.7% before the earthquake

Benefit Monitoring Contd.

Findings of the survey

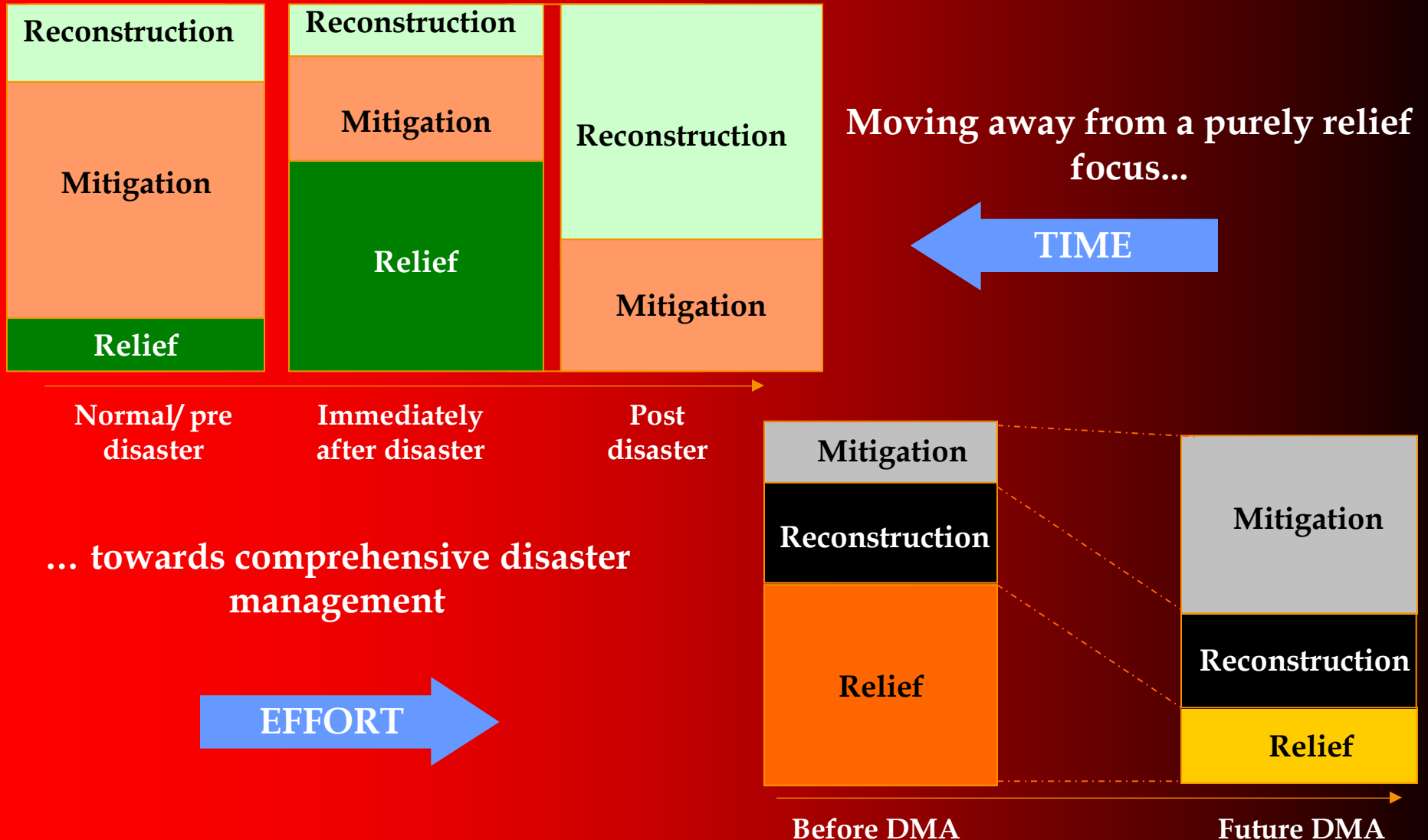
- The number of pipe connections has exceeded pre-earthquake levels.
- Agriculture: 90% of the beneficiaries had been able to obtain similar or more yield, while 87% were restored back to their original income or more.

INSTITUTIONAL FRAMEWORK



LONG-TERM VISION

Focus of Disaster Management in the future



What GSDMA has done

- Formulation of Policies
- Preparation of DM Plans
- Preparedness Initiatives
- Capacity Building
- Mitigation Measures
- Community Preparedness

Activities envisaged in future

- Institute of Seismological Research (ISR)
- GIS based DM
- Gujarat Institute for Disaster Management
- 3 regional centres for Emergency Response at Ahmedabad, Surat & Rajkot planned
- One chemical disaster response center at Vadodara & one response center planned at Bhuj

Activities envisaged in future

- 16 Observatories and 40 SMAs to be established/upgraded
- Certification of masons and engineers
- Provincial Fire Services
- Revision of Relief Manual

Feasibility Studies

Consultants have been hired for the following studies:

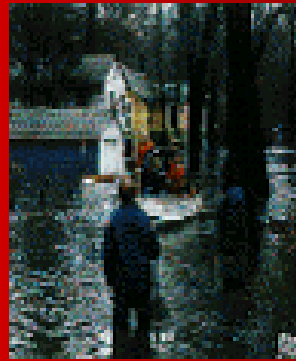
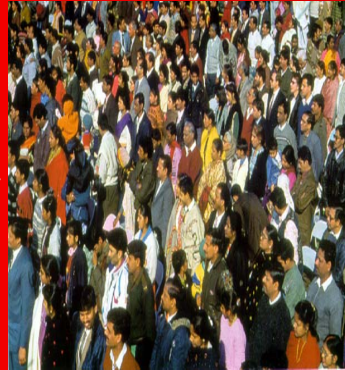
- Seismic Microzonation
- Review Of Building Codes
- Early Warning and Communication System
- Hazard, Vulnerability, Capacity and Risk Assessment

Hiring of consultants for the studies is in progress:

- Damage & Loss Assessment
- Establishment of Emergency Response Centres
- Information Technology for Disaster Management

VISION

Imagine a Gujarat where.....



Disaster strikes;

Communities react with sense of urgency but in a planned way

Only a few structures are damaged

... with a limited death toll

... and a limited impact on the state exchequer

- **Risk assessment**
- **Information monitoring**

- **Awareness**
- **Training**
- **Drills**
- **Contingency plans**

- **Planned development**
- **Policies, guidelines**

- **Contingency plans**
- **Rapid response mechanisms**

- **Risk transfer mechanisms**
- **Effective program management**

UN Sasakawa Award

- GSDMA has received the Certificate of Merit for the prestigious **UN Sasakawa Award for Disaster Reduction** for the year 2003

Lets hear the voices of future survivors & the program mangers.

They will depend on us to draw the right lessons from past “practices”.

**The End –
A New Beginning**





Recovery



The process undertaken by a disaster-affected community to fully restore itself to pre-disaster level of functioning.

Rehabilitation



Actions taken in the aftermath of a disaster to:

- assist victims to repair their dwellings;
- re-establish essential services;
- revive key economic and social activities

Reconstruction



Permanent measures to repair or replace damaged dwellings and infrastructure and to set the economy back on course.