A study of post disaster Reconstruction and Rehabilitation project for the Gujarat Earthquake in India

SYNOPSIS
2001年1月26日インド西部のグジャラート州でマグニチュード7.7の大地震が発生した。数千人の被害者を出したこの災害に対して、グジャラート州政府は大規模な復興およびリハビリプログラムを開始した。本研究では、グジャラートのカッチャ地域の都市計画を対象とし、市町村参加過程について分析することを目的とする。分析結果は市町村参加アプローチは将来の都市計画に対して影響力があり、既存の法令を修正する必要と共に、政府と地方自治体の参加を可能にするような方針することが求められる。本研究では、カッチャ4町の中で、工事および復興計画の計画が進んでいる4町に限定する。

1. Introduction
Many countries now support the need for greater public participation in planning. As Conyers (1982), has argued that the three important reasons for encouraging public participation are – It acts as a means of gaining insights of the local conditions and needs of local people, without such basic information to help identify public preferences correctly, plans are unlikely to be successful. Individuals are more likely to be committed to plans if they are involved in their preparation and that people have a democratic right to be involved in their own development (Potter, 1985). This gain particular importance in the post disaster development due to the involvement of number of various governmental and non-governmental agencies in reconstruction. Studies (Jigyau, 2000; Engel & Salazar, 2001) of reconstruction following the Latur earthquake in Maharashtra (in 1993) illustrate that village plans drawn with participation and using traditional technologies were successful in meeting the needs of the local people than simply importing the modern techniques. In Japan, after the Kobe earthquake, the Japanese government faced heavy criticisms due to the lack of public consultation in planning (HIC, 1996; Miyamoto, 1996) and the rehabilitation of people took a long time even after the reconstruction of large infrastructure projects. Following the earthquake in Gujarat in 2001, most national and international reconnaissance teams stressed the importance of community participation in the Reconstruction and Rehabilitation (World Bank, 2001; IITB-EDM, 2001). The Government of Gujarat in its Rehabilitation plan, considered community participation as one of the "guiding principles" in the implementation (GOG, 2001) of rural and urban reconstruction.

1.1. Purpose of Study
This research aims to study the Gujarat Earthquake Reconstruction and Rehabilitation project particularly the town planning of the four urban centers in the epicentral region, Bhuj, Bhachau, Anjar and Rapar. Public participation differs in rural and urban areas in Gujarat and for this research the participatory approach in Bhuj is studied in comparison with that in Kobe and

with that to planning in India.

The study is based on the development plans, policy documents, literature published by the Government, reports of various agencies and data collected through discussions with government officials, NGOs, local people during my field visit.

On January 26, 2001 at 8:46 local time, an extremely severe earthquake, measuring 6.9 (7.7 as per USGS) on the Richter scale struck Gujarat, the western state of India. The earthquake caused extensive damage and affected 7904 villages in 21 districts of the state. The final death toll stood at over 13,800 and about 167,000 were injured. More than 1.2 million houses were destroyed or damaged. Many schools, health centres, hospitals, public buildings and water supply, electricity, telecommunications were damaged and disrupted. Many small and large-scale industries and thousands of cottage industries were affected. There was a heavy loss of livestock in the region.

90% of all deaths and 85% of all asset losses were in Kutch where 4 towns & 400 villages were affected. Most damage was concentrated in the vicinity of Anjar, Bhachau and Bhujs towns. In these locations, all types of buildings suffered extensive damage (World Bank, 2001).

2.1. Overview of Gujarat
The state of Gujarat lies on the west coast of India having 25 districts and a population of 50 million (2001) with 66% rural population. Gujarat is prone to many natural disasters like droughts, cyclones, floods and earthquakes. Kutch is remote and poor but is a home to large wealthy community with social networks in Mumbai or abroad. Most villages and sections of the
towns are organized into caste or community neighbourhoods.

2.2. Emergency Response

The government was taken unawares by the magnitude of the catastrophe. The army, paramilitary, police force, and many state and central government employees were sent for relief operations. The community members immediately mobilized and the strong nongovernmental organization (NGO) network national and international rallied to support community efforts.

3. Planning Framework in India

In India, planning and development is regulated by a master plan or a development plan in accordance with the State Town Planning and Urban Development Acts. Town planning scheme based on the concept of land readjustment is a popular mechanism. In TPS the owner receives compensation for the land contributed and he pays a part of the increment in the land price as development charges. Formal objections and suggestions from citizens are invited during planning stages as per the Act.

3.1. Public Participation

Much of the current discussion of citizen participation in India is limited to the improvement of the low-income groups. With the 74th amendments in the Constitution in 1992, the municipal councils or the urban local bodies are empowered as a third-tier government. The mandatory participation in urban planning is based on the Town Planning & UD Acts of the state. In spite of this, the participation remains limited to slum networking, services provision and environmental issues.

4. The Hanshin-Awaji Earthquake, Kobe

The Hanshin-Awaji Earthquake in Kobe on January 17th 1995 killed more than 6000 people and more than 400,000 houses very damaged or destroyed. Communities played a very important role in preventing fires and rescuing neighbors before the arrival of the local authorities. The earthquake affected a large number of elderly citizens living in the congested inner areas of Kobe.

4.1 Formulation of Reconstruction Plan

The draft city plans drawn within 2 months by the municipalities for reconstruction were criticized for its lack of sufficient dialogue and that large projects were favored.

4.2 Reconstruction of Urban Areas

In Kobe city, with the Emergency Earthquake Reconstruction ordinance “Disaster restoration promotion districts” were designated and depending upon the public agency participation and regulation “black”, “gray” or “white” districts were designated. In the black zones, statutory planning projects like land readjustment/redevelopment were adopted. These areas were not damaged in the war and land patterns and old buildings with problems of very narrow roads and densely built up dilapidated, wooden houses. The earthquake damage due to building collapse and fire was immense in these areas.

4.2.1 Land Readjustment Projects

One-third of Japan’s infrastructure was developed through this method of Replotting. Open space was to be created by having land owners contribute 10% of their land to the city without compensation leading to a great deal of controversy over this decision made with little participation of residents. Therefore, the project was split into two stages, the planning on districts to be covered and infrastructure such as roads and parks decided was the first stage. The planning on more neighborhood minor streets and block parts, was to be decided considering the demands and opinions of the residents.

4.3 Community Action

The Great Hanshin-Awaji Earthquake, has been called the dawn of new age of volunteerism. More than 1.17 million volunteers participated in emergency relief work or whatever work they could.

4.3.1 Machizukuri organizations

These organizations of residents, private agency and others with an interest in the area’s restoration existed in Kobe before the earthquake and had undertaken neighborhood improvement projects. After the earthquake, more than 100 Machizukuri organizations were formed in the damaged areas based on existing self-governing associations or town associations and served to voice the wishes of the residents and to submit proposals to the City government. The activities of the ranged from preparing alternate plans for redevelopment/readjustment projects in the black areas, undertaking joint housing or cooperative housing projects in the white areas etc. Many readjustment projects in the black areas were undertaken successfully.

Today, Machizukuri organizations are a very big part of the urban planning system and are encouraged by the local planning bodies.

5. The Gujarat Earthquake Reconstruction and Rehabilitation Project

The Gujarat Earthquake Rehabilitation and Reconstruction Project prepared by the State government aims to rehabilitate through the provision of housing, social amenities, infrastructure, and livelihood support. Gujarat State Disaster Management Authority (GSDMA) was established to coordinate the relief and reconstruction. Assistance packages for death, injury and loss of residential property and economic revival were announced.

5.2 Housing

About 1.2 million houses were destroyed or damaged in Gujarat. “Owner driven construction” was adopted in reconstruction of housing in Gujarat wherein financial assistance for reconstruction, retrofitting and repairs in rural and urban areas was provided under government’s assistance packages. Partnership with the private sector and NGOs was encouraged for the reconstruction in rural areas. The reconstruction in the rural areas is progressing very rapidly and is nearing
completion due to the involvement of many external agencies. Decisions as to the relocation, village layout, building materials are made by the village council and the funding agency. In many cases the villagers are involved in actual construction as well.

5.3 Urban Rehabilitation

The four urban towns of Bhuj, Bhabha, Anjar and Rapar were badly hit. The town of Bhachau was completely devastated. These towns are micro-centric cities with the “Walled city (Ganatal)” in its traditional centre and hub of all activities. Natural disasters, encroachment, unplanned development, non-earthquake safe traditional constructions lead to the vast damage. High population density with traditional inward looking residential blocks to apartments facing the narrow streets characterize the Walled city.

GSDMA Policies, Supervision & Fund Management

GUDDC Implement Infra. & Procurement Consultants

MUNICIPALITY
Maintenance & Services

After AIDA’s

Area Development Authority
TP, Regulating Development, Relocation (Rehab. & Infra.

Agencies Involved in the Implementation

<table>
<thead>
<tr>
<th></th>
<th>Bhuj</th>
<th>Bhabha</th>
<th>Anjar</th>
<th>Rapar</th>
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</thead>
<tbody>
<tr>
<td>Popn.</td>
<td>121205</td>
<td>18408</td>
<td>51200</td>
<td>16466</td>
</tr>
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<td>Area</td>
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<td>0.29sq.km</td>
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<td>Damaged Houses</td>
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<td>10000</td>
<td>5082</td>
<td>1873</td>
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<tr>
<td>Existing Land Use</td>
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<td>8508/A</td>
<td>2564/A</td>
<td>639/BIA</td>
</tr>
<tr>
<td>Planning Issues</td>
<td>No planning efforts, Loosely regulated, Violation of Bylaws, encroachments, Lack of open spaces, Organic Road network, Very narrow streets/lanes no hierarchy.</td>
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In these towns Statutory Planning in accordance with the Gujarat Town Planning and Urban Development Act, 1976 was adopted. Development plans were better road layouts, more open spaces were proposed. For minimum dislocation from the Walled city, the deduction of land from the plots was proportional to the size of the plots, with smaller plot owners getting minimum or no deduction at all. This was met with minimum resistance due to the large number of small sized plots in the Walled Cities.

5.4 Relocation & Rehabilitation

The owners of plots under the partial (G4) and total (G5) collapse category could opt for in-situ construction or volunteer to relocate to the relocation sites. Financial assistance for housing reconstruction as per the government’s package would be provided to the owners. As per the new building regulations only G1-1 construction would be allowed and the tenants of multi-storied building were provided with option to buy the land with the help of NGOs.

5.5 Public Participation

The citizens groups and NGOs that have been involved in the urban reconstruction are; “Samaj” (Community/Caste) Groups, Citizens’ groups interested in planning, Local NGOs and those coming after the quake, Large international Voluntary organizations and specific interest groups. Most of the NGOs are working in Slum networking, information dissemination and temporary settlements in the urban areas. The town planning consultants, NGOs and the CBOs organised stakeholders meetings, for information dissemination and building consensus for the plans.

5.5.1 Mandatory participation

The public participation in the Town Planning of the towns was in two stages. In the first round the planners for Bhuj consulted the people for Data collection, to identify the issues and problems through SWOT analysis. The second round consisted of presenting the plans for criticism and building consensus on the planning principles.

5.5.2 Group Relocations

In Bhuj, three relocation sites, Rawalvadi, Mundara road and RTO, all situated from about 1-3kms. Having a total of 3223 plots were selected. The neighbourhoods and communities in Bhuj were very strong. Even the residential blocks were facing inwardly into courtyards in many places. There were many group initiatives in the process of relocation and people belonging to the same community, tenants, families formed groups and opted for relocations. Out of a total of 5900 applications for relocation in the three sites of Bhuj, 3161 have been accepted and the plots have been allotted to 2668 of them. The building permissions also have been sanctioned to more than 1000 houses. (GSDMA 03)

In Bhachau, 99% of the buildings collapsed. 35% of the houses were vacant (retained by families outside Kutch for sentimental values). Two relocation sites were designated and after rigorous campaign of identification of beneficiaries, 313 applications were received. 78 of them were considered eligible for allotment after verification of their documents. 313 out of 10000 (3%) beneficiaries could be eligible.

5.6 Analysis of Participation in Gujarat
Kobe, Japan

Bhuj

Bhachau

Urban City Plan announced within 2 months by the municipalities.
Plans made with little participation of residents - Caused great deal of argument and criticism.

Designation of Disaster prevention districts (Black, grey and white zones).

Statutory planning of projects (redevelopment / rehabilitation) adopted in black zones as per Special Act for Disaster Area

Urban Development plans for the 4 towns prepared by the state government in 4 months by May 2001.

Town planning consultants (TCP) appointed for the four towns. Surveying and preparation of final DP, town planning schemes (TPS) started. TCP responsible for citizen consultations.

Statutory planning adopted in accordance with the Comprehensive Planning and Urban Development Act, 1976. Development Plan (DP) for the future development of the towns.

Town planning schemes for the densely populated inner walled city areas with traditional buildings, narrow streets unplanned growth.

Bhuj DP for an area of 15 sq km

Bhachau TPS for 0.27 sq km

1. Infrastructure & districts for redevelopment (March '95)

2. Neighborhood level

3. Market streets, parks

4. Grievances

5. Land Acquisition

10% land to be contributed for open spaces. Many displacements from inner areas.

Machhizuri organizations formed - alternate planning - cooperative housing, block reconstruction etc.

Neighborhood citizen meetings, Machhizuri newsletters etc.

Machhizuri organizations of district planning with help of Machhizuri planners/consultant.

Machhizuri as an intermediary between Govt. and people.

Housing planned by the govt. in the suburbs.

The need of importance of the condition of the inner walled city areas was realized by the people following the earthquake. Therefore, much of the town planning adopted with the information and consultation has been accepted by the residents. Many planning decisions were proposed to the residents prior to the earthquake like widening of roads, diverting heavy traffic outside, restriction of building heights etc. and the earthquake was regarded as an opportunity to improve the pre-earthquake condition.

In-spite of the owners getting to reconstruct the houses on their own, it is felt that the pre-earthquake traditional courtyard system of housing clusters will be lost. There are ongoing discussions about the developmental charges to be levied on the properties.

The involvement of the NGOs in the rehabilitation of the slum settlements/poor and the government's decision to provide them with land for construction would be result in improving their living conditions. However, the influx of construction workers from different parts of the country in Bhuj /Bhachau might create new squatters which cannot be neglected. The tenants that were not provided with any assistance for rehabilitation were provided with the option of buying land in the relocation sites due to rallying by NGOs, and resident groups.

It is evident that the Gujarat earthquake reconstruction project has provided solutions to some of the problems (housing in suburbs, loss of communities, conflict between demand and supply) faced in Kobe with the active involvement of NGOs for rehabilitation of the vulnerable groups of society and limiting the relocation from the walled city.

Although conventional methods such as public meetings, newspapers were adopted by state policies, planners, NGOs, citizens towards enabling participation, the local government's attitude remained unenthusiastic.

This was the first time such an opportunity was made available to the people and these efforts will lead to construction of better towns in terms of physical conditions and sustainability.

6. Conclusion

Machhizuri and volunteerism rose after the Kobe earthquake in Japan and machhizuri organizations have become a big part of urban planning system and are encouraged by the local planning bodies through district planning and machhizuri ordinances. The distrust in the government's performance, growing public interest in city development and the great appetite for reading and awareness in the Japanese people are possible reasons for such an increase.

In India, however, there are questions as to the continuance of people's activities in the municipal government in Gujarat given the indifferent response of the local government in the reconstruction. The urban local bodies are empowered by the constitutional amendments but in reality the municipality lacks the technical, financial, legal capacity and also the willingness for planning with people. There is strong need for the modifications in the Town Planning Acts and the municipal acts to increase the levels of participation to that of more active nature than the just information and consultation as demanded by the Acts.

The community groups involved in planning/ awareness could be empowered and can work with the local government in planning and mitigation. It is very important to create awareness about disaster mitigation as the careless attitude has started to rise up again.

The project was under progress during my visits which was the main limitation to this research. Also, I was unable to maintain contact with many in Gujarat after my return.

References:

5. GOC (2001). "Gujarat Earthquake Reconstruction and Rehabilitation Policy".