

Impact of Earthquake on Infrastructure

Category	Before Earthquake	Extent of Damage
Electricity	56 households had electricity connection	Severely affected
Water Supply	Supplied under the Mumvara Group Water Supply scheme	Severely affected
Educational Facilities	1 Primary school and 2 Anganwardi	Totally damaged
Health Facilities	None	--
Panchayat Building	One	Partially damaged
Religious Temple	1 temple and 2 mosques	Totally damaged



So, electricity supply, educational facilities, one primary school they all were devastated by this earthquake.

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Extent of Damage of the Houses in Ludiya Village

Type of house	Bhungas	Kaccha	Pucca	Kuccha-Pucca
Totally destroyed	5	50	36	13
Irreparably damaged	7	41	30	22
Reparably damaged	13	17	13	16
Little damage	3	1	45	4
No damage	8	2	0	1
Total	31	111	84	56

Here are the detail extent of damage of the houses in Ludiya village, totally that destroyed Bhungas was 5, whereas the Kaccha, Pucca house was much higher, Bhungas were little damage or repairable damage or irreparable damage, but it is mostly the most affected at the Kaccha, Pucca houses let us see whereas, it is only 5 to 7, okay.


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Reconstruction

Reconstruction in this village has been done by Manav Sandhya in the existing settlement

Housing

- Total 235 houses have been built.
- Each family had been provided with two traditional Bhungas and a chowki along with facilities for a separate toilet and bathroom.




Electricity

- There are 170 metered connections in the village
- Street light was provided

Water Supply

- Water is supplied under the Mumvara Group Water Supply scheme.
- Villagers get water quite regularly
- Each cluster has one under ground water storage tank



Telecommunication

- 11 households have telephone line in this village
- A line had been provided to post office. Villagers also use this telephone

Educational Facilities

- 2 primary schools and 1 Anganwadi have been reconstructed within 3 months
- The secondary school has been constructed

All the Schools has been Reconstructed in Ludiya

Newly Built Bhungas in Ludiya Village

Reconstructions; total 235 houses were rebuilt and each family was provided 2 traditional Bhungas, Bhungas style that is prone to resilient to earthquake and resilient to cyclone that we found that was less affected by the earthquake, this style with the help of NGO's, people reconstructed these Bhungas and Chowki along with the facilities for a separate toilet and bathroom.

So, each household they received 2 Bhungas, 1 Chowki and one toilet for, and 170 metered connections through the village were given to the electricity, water is now supplied by Mumvara group water supply scheme, the villagers get quite regularly the water supply, telecommunications was given to 11 houses and other educational, 2 primary schools and Anganwadis were rebuilt, all the schools were reconstructed in Ludiya.

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Neighborhood Cluster, Ludiya Village



The Cost of each DU is Rs. 56000 – Much Cheaper

More than 40 % DU is electrified and Telephone facility is provided to the village

All the villagers have got the Ownership of House

New Village Layout is well planned and also accepted by the village community

A Well Maintained DU



Villagers have designed their own house



Villagers working for building their own house

Legend:

- Green: Open Spaces
- Blue: Public / Semi - Public
- Yellow: Residential
- Grey: Road

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Neighborhood clusters; so they decided that they need to the people should interact with each other, so they made a very close neighborhood that is extending their kinship structure or their clan structure and accordingly, they were given divided the group into a cluster, and new village layout was well planned and also accepted by the villagers.

Villagers have designed their own houses; therefore; the dwelling units is very well maintained. The cost was much significantly lower that is only 56,000 Indian rupees that time and 40% of the dwelling units is electrified and telephone facility was provided and people participated in the reconstruction and rehabilitation process, here is a file per picture.

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Peoples Involvement/Self Help in Various Aspects

Training Programme
The NGO Volunteers with the help of Government trained village labourer to built earthquake resistance building

Selection of Target Group
The whole village

Decision Making
Villagers had took every decision

Design
The villagers have decided the layout of the village, Dwelling unit plan,


Finance
Each household gave Rs. 2000

Land:
Muslims have given the land for Naya Vas to Harijans and in return Harijan has given their labour for the construction of Muslim houses.

Labour
One members from each house have given voluntary labor for two months.
Self help groups were organized
Their construction skill had been utilized

Building Materials:
local material like sun-dried bricks, 'khaj' straw; branches of the 'babool' tree were used

Women Participation
Women worker had participated as a labour but they did not take any decision.



Villagers are working to construct their house in Ludhiana village

Implementati
Time: The whole project had been completed within 7 months

Cost: Cost of each Bhungas is Rs 22000 and cost of each Dwelling unit is Rs 55000

Table No. 17 Level of Satisfaction in Different Aspects in Ludhiana Village

	Very Bad	Bad	Satisfactory	Good	Very Good
Shelter					
Water Supply					
Health					
Tele-communication					
Education					
Community Building					

Source: Primary Survey, 2005

Table No. 18 Prioritization of Aspects Acc to Weightage in Ludhiana

Prioritization of Facilities	Weighted Average
Shelter	
Electricity	
Water Supply	
Health	
Tele-communication	
Education	
Community Building	

Source: Primary Survey, 2005

So, people who are involved into the decision-making process, they design their own houses, finances they provided 2000 Rupees to build these houses, Muslims provided land to Harijans and in return Harijans given their own labour. Also, each one member from each house they should provide labour, building materials; they used the local building materials like sun-dried bricks, Khaj straw, branches of the babool tree were used.

Women also participated so, people who were very satisfied with these projects, particularly with shelter, very good water supply, and the cost of the one Bhungas is around 22,000 and each cost of the each dwelling unit was 55,000.

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Peoples Involvement/Self Help in Various Aspects

Training Programme
The NGO Volunteers with the help of Government trained village labourer to built earthquake resistance building

Land:
☐ Muslims have given the land for Naye Vas to Harjans and in return Harjan has given their labour for the construction of Muslim houses.

Selection of Target Group
The whole village

Labour
☐ Five members from each house have given voluntary labor for two months.
☐ Self help groups were organized
☐ Their construction skill had been utilized

Decision Making
☐ Villagers had took every decision

Design:
☐ The villagers have decided the layout of the village, Dwelling unit plan.


Building Materials:
local material like sun-dried bricks, 'khaj' straw, branches of the 'babool' tree were used

Finance
☐ Each household gave Rs. 2000

Women Participation
Women worker had participated as a labour but they did not take any decision.

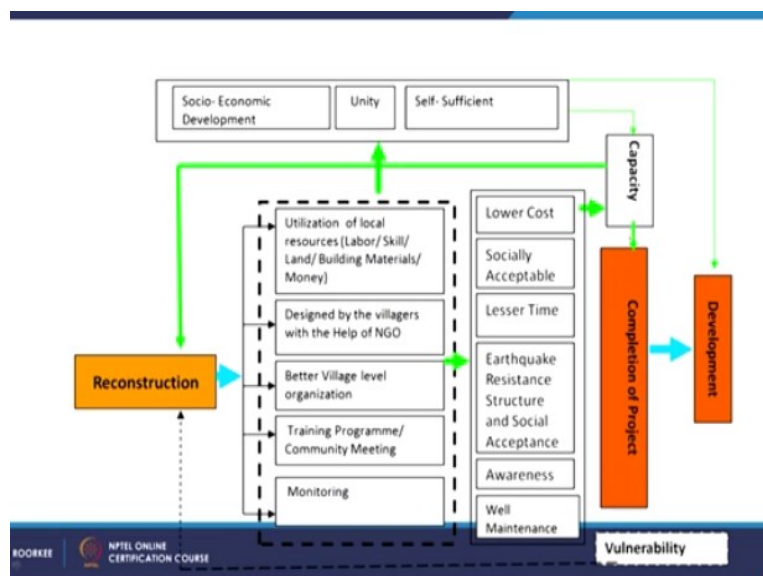
Time: The whole project had been completed within 7 months

Cost of each Bhungas is Rs. 22000 and cost of each Dwelling unit is Rs. 55000



The whole project was completed within 7 months.

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So, they use the local skill, labour, land, building materials and money designed by the villagers, better village level organization they had, they conducted training program, monitoring and therefore they have low-cost socially acceptable and earthquake-resistant building.

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Type – III Owner Driven Approach

Village : Bitta

Location: 85 km from Bhuj

Area: 4sq km

Total Population: 1062

Caste/ Communities :
Numerous communities are there

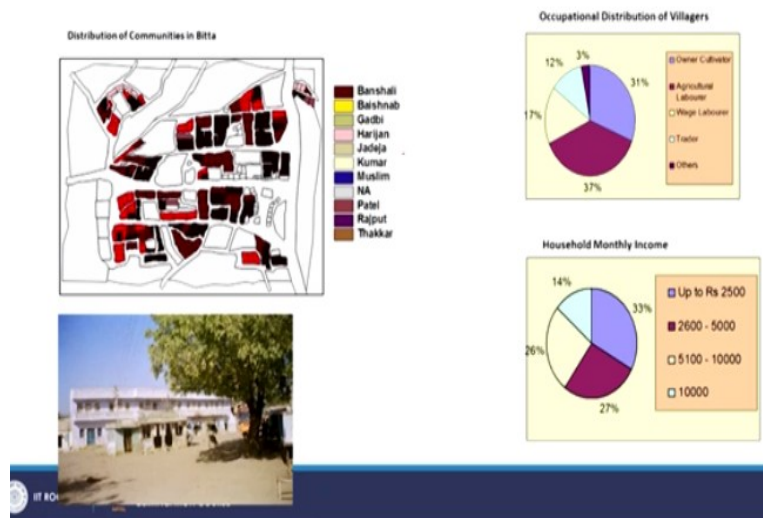
Literacy Rate: 57%

Occupation :
Animal Husbandry, Agriculture, Trading



Another one is the owner-driven approach in Bitta village, 85 kilometer from the Bhuj, total population is around 1000 and here it was the existing layout. You can see, they have some commercial stops, building, land use and most of the residential yellow and some public and semi-public, it was the biggest village among these 3 villages.

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This was the village bus stop and here a lot of Banshali, Baishnab, Gadbi, so lot of distribution of communities are you can see here. Now, occupational distribution of villages; they are mostly involved as a cultivator and agricultural labour, some are self-employed, wage labourer are also there. And traders; 12% are traders, some people are rich like 26% + 14%, they have more income than 10,000 rupees.

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