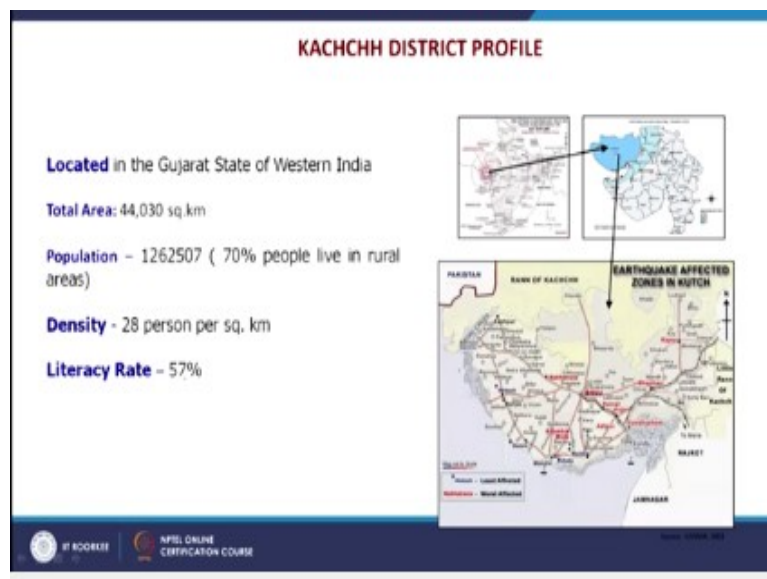


Disaster Recovery and Build Back Better
Prof. Subhajyoti Samaddar
Disaster Prevention Research Institute
Kyoto University, Japan

Lecture – 04
Build Back Better – People’s Perspectives

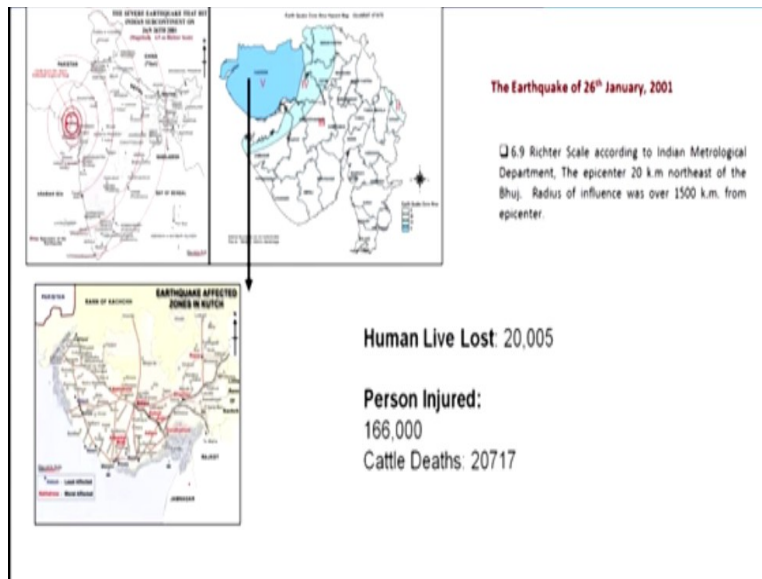
Hello everyone, welcome to the lecture series on disaster recovery and build back better, in this lecture, I will show you some people's perspective on a Reconstruction and Rehabilitation work, we call “build back better people's perspective”.

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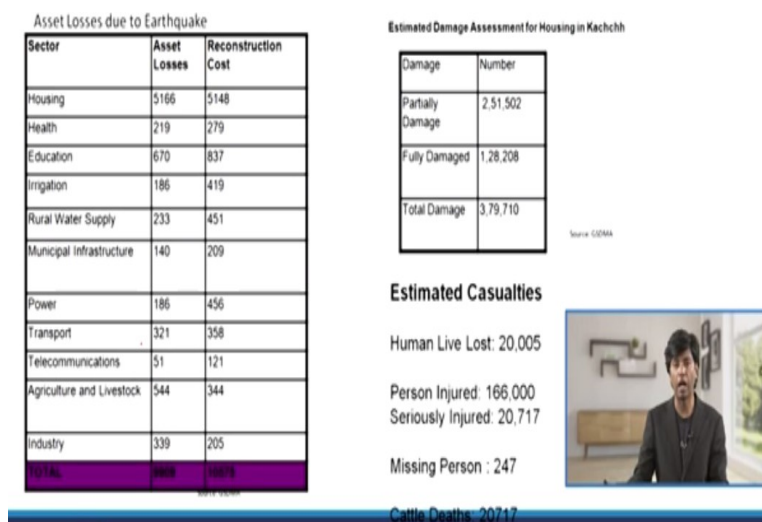
I will talk from Gujarat earthquake rehabilitation and reconstruction, in 2001, there was a big earthquake in the western part of India in Gujarat state particularly in Bhuj region which is a population of 1 million and 28 persons per square kilometer, literacy rate at that time was 57% and it has an area of 44,000 square kilometers.

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So, on 26th January 2001, there was an earthquake of 6.9 Richter scale, according to Indian Meteorological Department, the epicenter of that earthquake was northeast; 20 kilometres northeast of the Bhuj town, and the tremor and the effect was felt 1500 kilometer radius from the epicenter, and approximately 20,000 people were died and another 1, 60,000 people were injured.

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And you can see the asset loss due to earthquake, housing sector is one of the most affected area estimated damage assessment for housing in Kutch was that there were 2.5 lakhs houses buildings residential buildings were partially damaged, 1.28 lakh residential buildings were fully damaged or collapsed, total damage was 3.79 lakhs, human life lost was 20,000 around seriously injured 20,000, person injured 1.66 lakhs.

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There are also lots of cattle dead, here are some of the picture of Gujarat earthquake, you can see the devastations that happened there.

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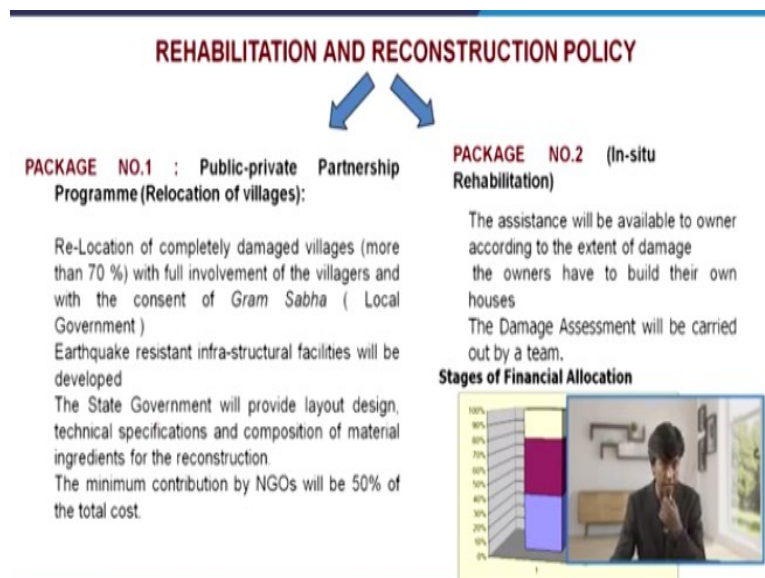


And, you can see that it was everywhere the devastations you can observe through these pictures, just for your references.

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Here is also some more in the villages, remote areas and also in urban areas.
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So, after the Gujarat earthquake, the Gujarat Government declared rehabilitation and reconstruction policy, we are focusing here at the housing sector, residential buildings, there were mainly 2 packages were available. One; package one is that relocation of completely damaged villages like, if there was a damage of more than 70% buildings are affected partially damaged or fully damaged, then this village will be relocated to other place.

Of course, it depends on the consent of Gram Sabha, the local government there and there they will build earthquake resistance infrastructure facilities, and the state government will provide layout design, technical specifications, compositions of material ingredients for the

reconstructions, and the minimum contributions, if any NGO is going to adopt a village, their contribution should be 50% of the total cost.

Now, this is basically for the relocations. The other package was given for in-situ, and that is that if the village is partially or completely collapsed, devastated, damaged then, there if the people do not want to relocate to a another place, then it could be in-situ development and if the owners of the buildings, the citizens they want to build their own house, then government will directly provide them financial assistance.

In case that assistance will be given directly to the owners, 50 % of the cost. Before that, there will be a damage assessment carried out by a team of government, and the allocated money will be given in 3 phases. First; just after the sanction of the project, they can get 40% of the; around 30% or 40% of the money you can see this graph and then when you finish the lintel level, you get another 40% or 35%.

Then, the rest of the money will be delivered the assistance after the completion of the entire reconstruction.

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Category	Plot Area (sq.m)	Construction Area (sq.m)
Landless Agricultural labourer	100	30
Marginal Farmers up to 1 Ha land Holding	150	40
Small Farmers between 1 – 4 Ha land Holding and others	250	40
Farmers with more than 4 Ha land Holding	400	50

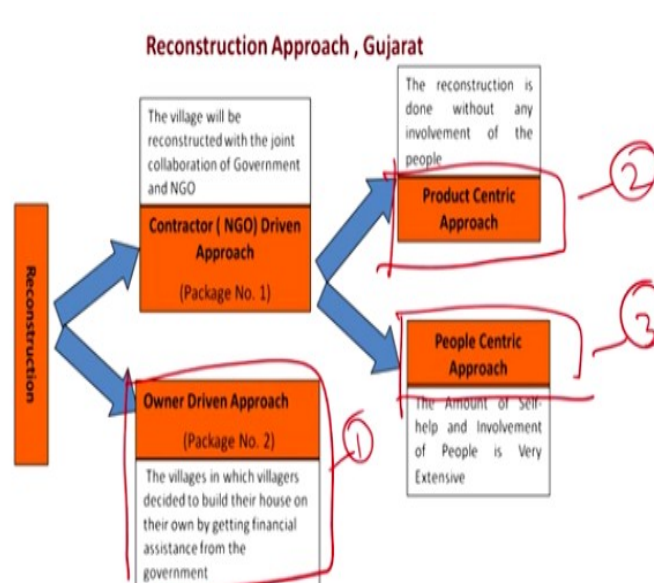
Category	Extent of Damage	Assistance
G5	Completely Destroyed House	Rs. 3000 Per Sq.m Up To a Maximum of Rs. 1 Lakhs
G4	Damage Up To 50%	Up to Rs. 4500
G3	Damage Up To 50%	Up to Rs. 4500
G2	Damage Up To 50%	Up to Rs. 4500
G1	Damage Up To 50%	Up to Rs. 4500
Hut Fully Collapsed		Rs. 7000

For this is the category of different kind of assistance, like, for the landless agricultural labourer, the house that will be built, plot area would be 100 square meters and the construction area would be 30 square meter, marginal farmers up to 1hectare landholding, they will get 150 square meters plot area and within that 40 square meter of construction area.

The small farmer, between 1 to 4 hectare landholding and others, they can have 250 square meter plot area and the construction area will be 40 square meters.

Farmers with more than 4 hectare land holding, they can get 400 square meters plot area and construction area would be 50 square meters. They have different categories of damage assessment; G5 to G1, so G5 which was completely destroyed house, they can get that time Rs.3000, Indian rupees per square meter up to a maximum of 1 lakh and then the rest of the will got; and those who have other huts; in case of hut, they can get a 7000.

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So, actually the one of the objectives of Gujarat rehabilitation and reconstruction is to build People-Centric Reconstruction and Rehabilitations, the program should be people-centric. Now, the 2 packages we mentioned here of rehabilitation and reconstructions, from that different approaches of rehabilitation and reconstruction may emerge, but we can actually take out of that many, 3 very prominent models or approaches of rehabilitation and reconstruction of the Gujarat.

One is from the package 2, there is owner-driven approach; in that case, the villagers in which villagers decided to build their own house, they will get the money from the government and they will construct their own house. So, they will get an assistance and government will help them to install, rebuild physical and social infrastructure, and the owners they will construct their own house by getting assistance.

They can also contribute their money, this is we called owner-driven and also there is the kind of NGO or contractor driven approach that can be 2 types; one is product-centric approach and people-centric approach. This product-centric approach where it is done by the NGO itself, it is mainly NGO driven or agency driven. People's-centric approach is more like a collaboration of partnership between people and the private agencies or NGO's.

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So, we have total 3 categories of models; 1, 2 and 3. So we can see clearly here also that there is one package from package number 2, there is owner-driven. And from package number 1, there are 2 that are NGO driven and community NGO partnership approach.

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Post – Disaster Interventions

Emergency Relief Operations

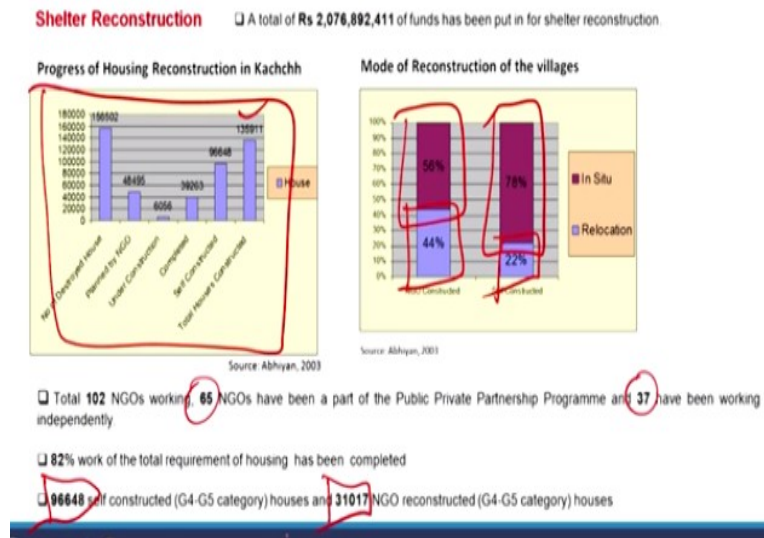
- The local community, RAF, Indian Army and NGOs helped in rescue operation.
- Rs. 1,00,000 was made to the next of kin of each of the deceased person.
- Rs 1250/family as household kits was provided.
- Assistance given for Cattle Death Like for Goat – Rs. 150, Bull- Rs. 750, Cow- 2,500



What they have done in Gujarat; post-disaster interventions, they Rs.1 lakh was made to the next of kin of each of the deceased person, Rs.1250 rupees per family was given as the

household kits was to provided and in case of cattle death, different amount of money was given like for goat 150, for bull 750 rupees, for cow 2500 like that.

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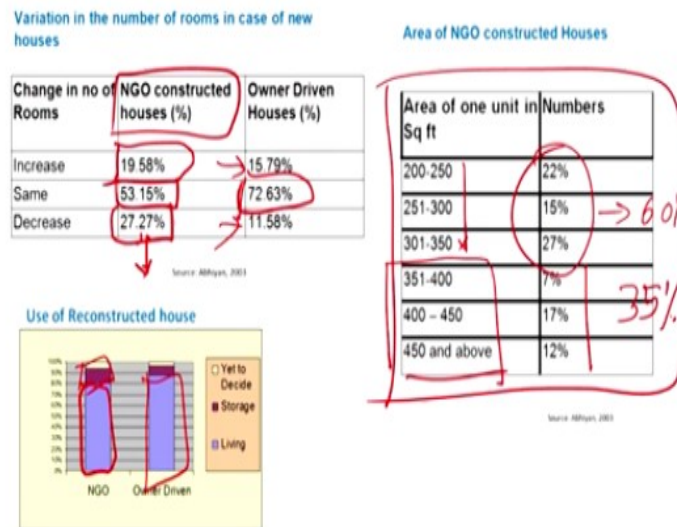
Shelter reconstruction; some of the reports here; now, progress of housing reconstructions in Kutch, number of total destroyed houses was 1 lakh 56,000 little more than that in Kutch area, and that was planned by the NGO was around 50,000 among them, the under-construction house right now that time 2003 was little more than 6000, completed almost 40,000 thousand little less than that.

Self-construction that is owner-driven basically is around 96,000 to 97,000, and the total houses constructed were 1 lakh 35,000 thousand that time. The mode of reconstructions; NGO constructions you can see that even in case of NGO mostly, it was 56% was in-situ but is a great number of also relocated house, in case of owner-driven or self-constructed majority are in-situ development, only 22% is relocated buildings.

So, total 102 NGOs; 100 NGO's were involved working on reconstructions, 65 of them have been a part of "public-private partnership" program and 37 out of them is working as independently without much collaborations with the local people. 82% of work of the total requirement of housing by 2003 were reported as complete, 96,000 or little more than that was owner-driven or self-construction house under the category of G4 and G5 damaged category.

And, another 31,000 was NGO reconstructed houses.

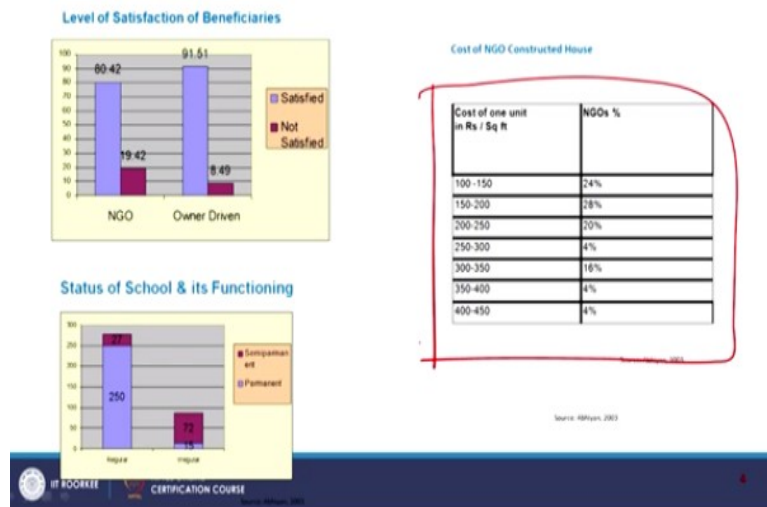
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Now, what was the variation in the rooms in case of new houses, is it increased, decreased, remain same? When NGO constructed, increase is around 20%, what they had before they received more built-up area, or rooms that is 20%, most of the cases is same but also significantly 27% compared to 20% increase that decrease, whereas in case of owner-driven, it did not increase much also, did not decrease much, it remains most of the cases the same, the total area.

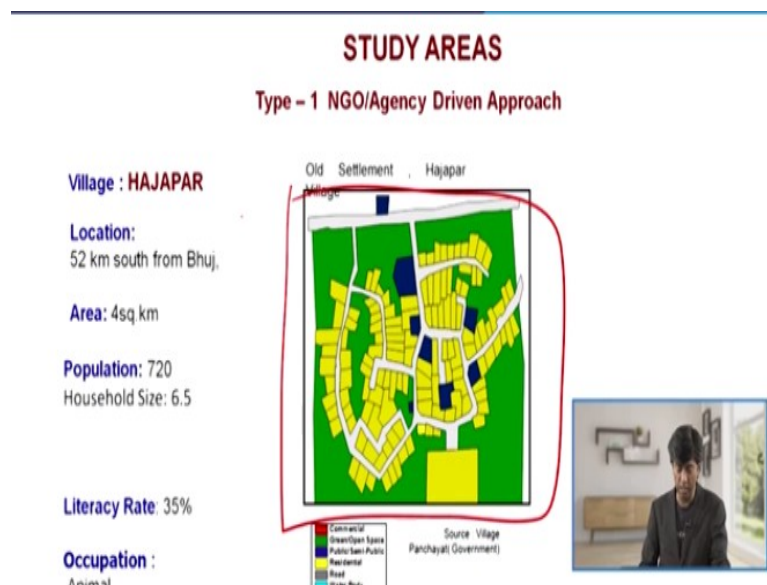
Use of reconstruction house; are they really using these houses according to a Abhiyan survey in 2003, NGO houses are almost also very significantly people are using, owner-driven of course but NGO-driven also some people are not using around 20%. Area of NGO constructed house, you can see this table mostly from 200 to 350, this is around 50%, around 60% of the total stock and this is from 350 to 450 or above, this is around 35% or little more than that.

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What was the level of satisfaction according to the Abhiyan 2003 survey, an NGO called Abhiyan that NGO 80% people that those buildings were constructed by NGO 80% are satisfied and in case of owner-driven, 91% were satisfied. The status of school mostly regular and some are irregular of course and here is also the list of cost of one unit in Rs is per square feet by NGO okay.

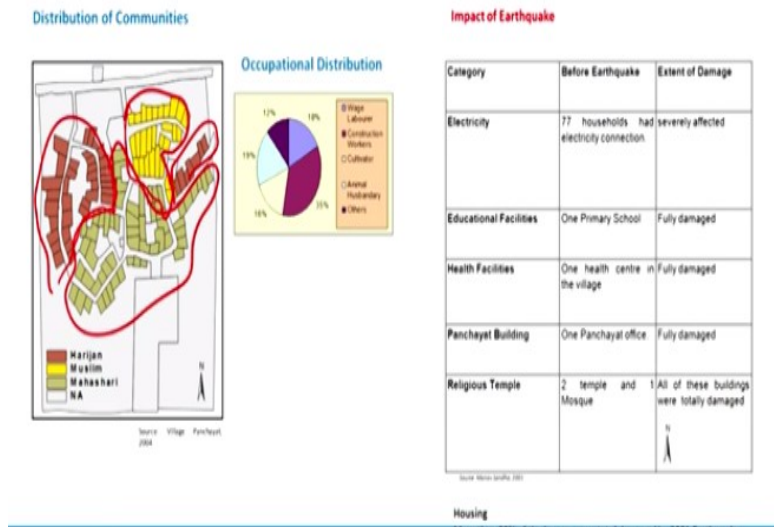
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Study area; we conducted surveys in 3 areas, I would like to show in different approaches and models and their case studies. One is NGO agency driven approach in Hajapar, that is 52 kilometers south from Bhuj, area is of the village is around 4 square kilometer in total including the agricultural land, population is 720, household size is 6.5, literacy was 35%, their main occupation is animal husbandry and agriculture.

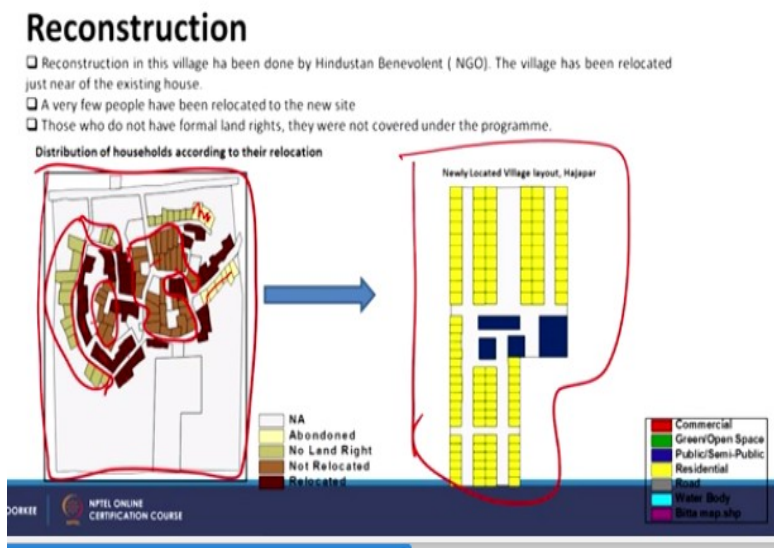
This was the old settlement of Hajapar you can see this organic settlements, the yellow ones are the residential area, these greens are the agricultural areas and the blue are public and semi-public areas.

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A distribution of communities; you can see that the Harijans and Muslims, they are on the outskirts one side is a very segmented community, they prefer to live in one segments and also, the other caste that is Maheshari, they are in one sector they are, so they are 3 groups category you can see. The electricity line, educational facilities, one primary school, health facilities, one health centre, Panchayat building and two temples and one mosque were all destroyed.

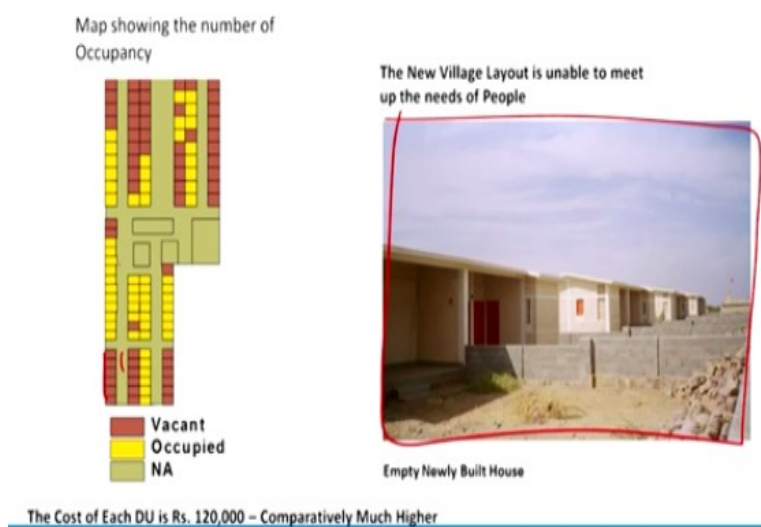
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More than 80% of the houses were totally damaged by 2001 earthquake. The reconstructions, so this was the existing before the earthquake that was the layout and this was the newly located village layout. You can see here that these yellow colours are abandoned places and some people who do not have any land rights in this area, no land rights, they do not have any formal land rights and many people they did not relocate it.


They developed their; build their own house in their own, some people only a minor group of people, they did not relocate it, only a minor group in dark maroon, they were relocated.

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This is the number of occupancy in the new, you can see these new constructed house is lying empty, the cost of dwelling units was 1 lakh 20,000 Indian rupees according to that time comparatively much higher. So, most of the houses are vacant, only yellow part you can occupied and you can see here that many people did not actually relocate it to the newly constructed house because it is a totally different layout and people did not accept that one.

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Health Centre was Built - but nobody using



Educational Facilities
 A primary cum Secondary school had been built

Telecommunication
 It is still absent at new site, but some people in older settlement have this facility

Electricity
 The Whole relocated site had been electrified

Panchayat Office:
Panchayat building has been reconstructed

They have health center but, people are not using that. Ayurvedic health centre also, this is not used by the people, the schools are there is primarily; primary school, this is working well, people are using it, people are sending their kids there, panchayat office is rebuilt, electricity installed, telecommunication system was installed.

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Constructed own house

Those who moved to new settlement, have not got the full ownership of House. It has been given as a Lease



Still live in temporary shelter

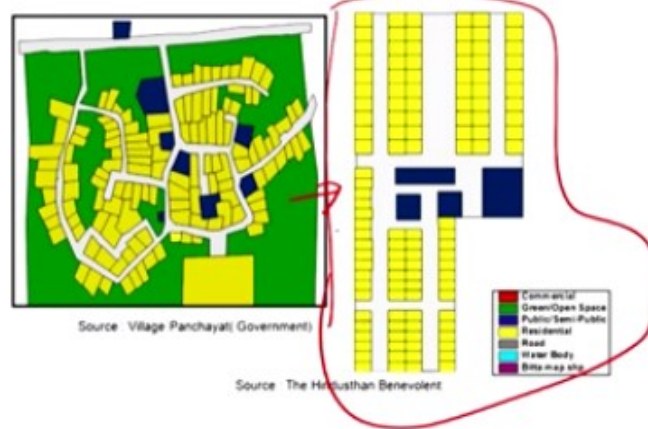


Unoccupied houses

Constructions; those who are rich they did not relocate better off and they build their own house in the damaged side, some people who did not have the land tenure rights, they constructed temporary houses or got a temporary houses and remaining there, they were not included into the reconstruction projects and the newly constructed projects remain unoccupied.

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Old Settlement . Hajapar Village



Because, these people preferred to live together, they did not like this new iron-grid pattern of layout, it was done by the Hindustan Benevolent.

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<p>Peoples Involvement/Self Help In Various Aspects</p>	<p>Land :</p> <ul style="list-style-type: none"> <input type="checkbox"/> Govt Had provided land for new site. <input type="checkbox"/> Villagers did not give any land 	<p>Women Participation</p> <p>No participation of women any phase of reconstruction</p>
<p>Training Programme</p> <p>No training programme were organized</p>	<p>Finance</p> <ul style="list-style-type: none"> <input type="checkbox"/> No contribution by the villagers 	
<p>Allocation of Financial Assistance</p> <p>The financial assistance for reconstruction had been directly given to the NGO</p> <p>All the houses affected by earthquake had been taken under this scheme. But those who have not formal land rights were not included under this programme</p>	<p>Labour</p> <ul style="list-style-type: none"> <input type="checkbox"/> Villagers did not contribute any labour. <input type="checkbox"/> Villager labour force were also not utilized 	<p>Cost: Cost is high</p> <ul style="list-style-type: none"> <input type="checkbox"/> Rs. 1 lakh in case of 40sq mt/d U <input type="checkbox"/> Rs 80000 in case of 30sq mt-D U
<p>Decision Making</p> <ul style="list-style-type: none"> <input type="checkbox"/> The villagers were not involved with any part of reconstruction and they did not have any coice to take decision 	<p>Building Materials:</p> <ul style="list-style-type: none"> <input type="checkbox"/> No Utilization of locally available building materials. <input type="checkbox"/> Contractor brought the building materials from outside. 	<p>Organization</p> <p>NGO and Sarpanch Monitor the reconstruction work, But majority of the decision was taken by NGO</p>
	<p>Design</p> <ul style="list-style-type: none"> <input type="checkbox"/> Entirely by the NGO 	
	<p>Time:</p> <p>The whole project had been completed 1 year and 2 months</p>	

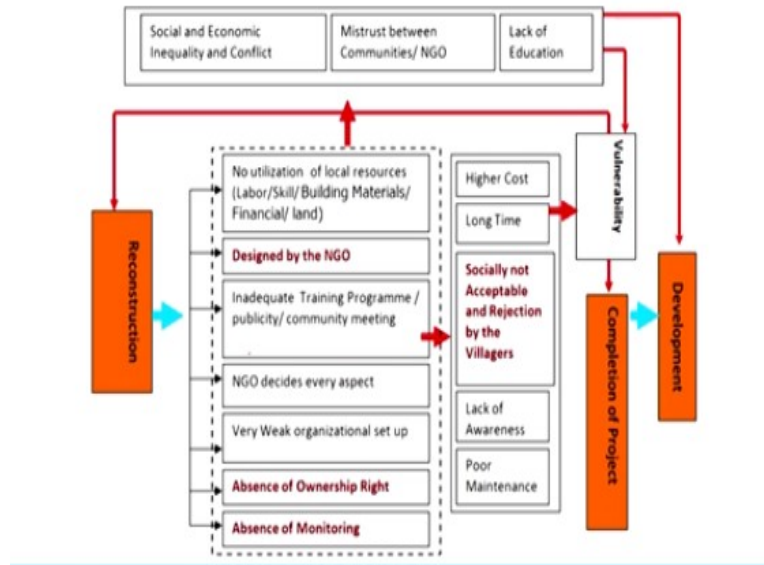
There was no training program, allocation of financial assistance given to the NGO directly and decision makings, villages were not involved into the decision-making process, government has provided the land for new site, villagers did not share any part of that, no contribution for the villagers financially, they did not contribute any labour for the reconstructions.

Building materials; all building materials for these reconstructions were locally available building materials, contractor bought the building materials from outside, entirely designed by the NGO without any involvement of the people and it took 1 year 2 months to finish this

project, women participations was not there and cost was Rs.1 lakh in case of 40 square meter dwelling unit and Rs. 80,000 in case of 30 square meter houses.

And organizations; NGO and Sarpanch monitored the reconstruction work but majority of the decision was taken by NGO.

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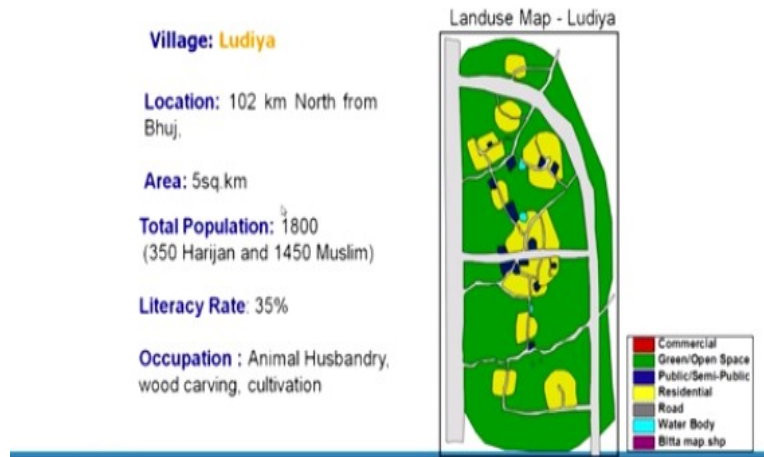


So, what do we see here that no utilisations of local resources designed by the NGO, no training program, NGO decide every aspect; very weak organizational setup and absence of ownership right, people refuse this one and absence of monitoring also. As a result, this project was very high cost and took some time but it was most way that socially not accepted, it was rejected by the villages and the project did not help to enhance people's awareness and the houses are poorly maintained.

So, actually that is increasing their vulnerability, mistrust between communities and NGOs and lack of education, so this had in case of contracted driven approach.

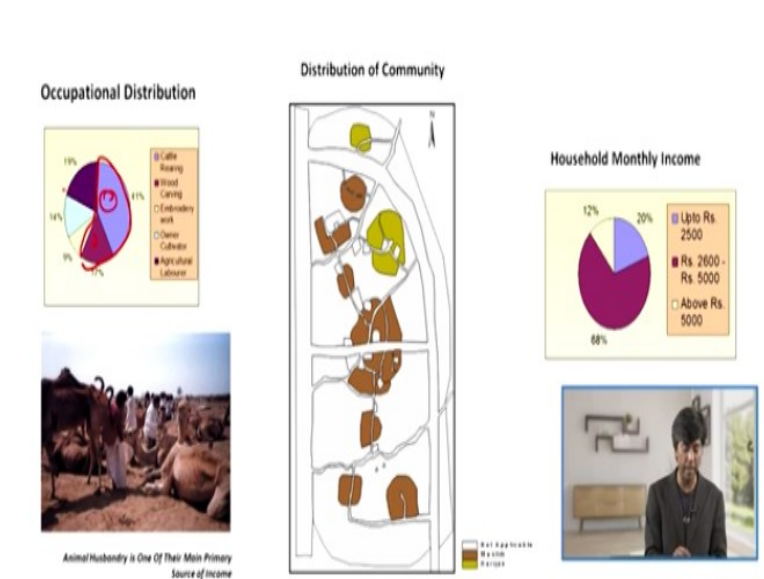
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Type - II Communit-NGO Partnership Approach



In community NGO partnership approach, we have Ludiya village, there is 100 kilometer north from Bhuj, area is around 5 square kilometer, total population is 1800 mainly by Harijans and Muslims population comprised by literacy rate was 35%, there also occupation was animal husbandry, wood carving and cultivations.

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You can see that most of the people are involved in cattle rearing and wood cravings, so 50% of them are in cattle rearing and animal husbandry and some are also involved in agriculture around 20% of populations. And distribution of community also, you can see that there is a segregations that Harijans are there and here are the Muslims populations, these two communities and there is a poor community basically around Indian rupees 2500 to 5000, this shared the entire pie almost 90%.

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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 Sandhan 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 purchase office. Villagers also use this telephone

Educational Facilities

- 2 primary schools, 2 Anganwadis and 1 school have been reconstructed
- The boundaries school had also 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

IT ROORKEE
NIEL ONLINE CERTIFICATION COURSE

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 he village, Dweling 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

SKM: 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: **Two** 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				1	1
Health		1			
Tele-communication			1		
Education					1
Community Building					1

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	

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 Naya 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
 One members from each house have given voluntary labor for two months
 self help groups were organized
SKB: Their construction skill had been utilized

Decision Making
 Villagers had took every decision

Design
 The villagers have decided the layout of he 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.

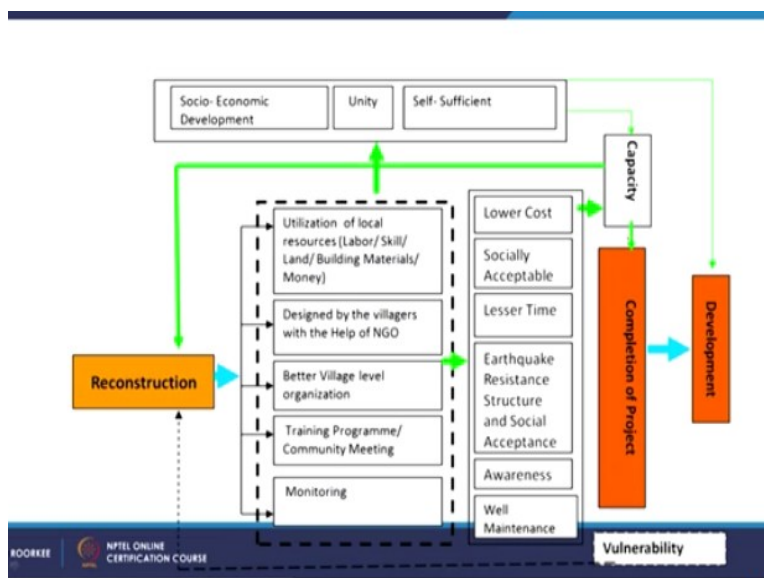
Time: The whole project had been completed within 7 months

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%

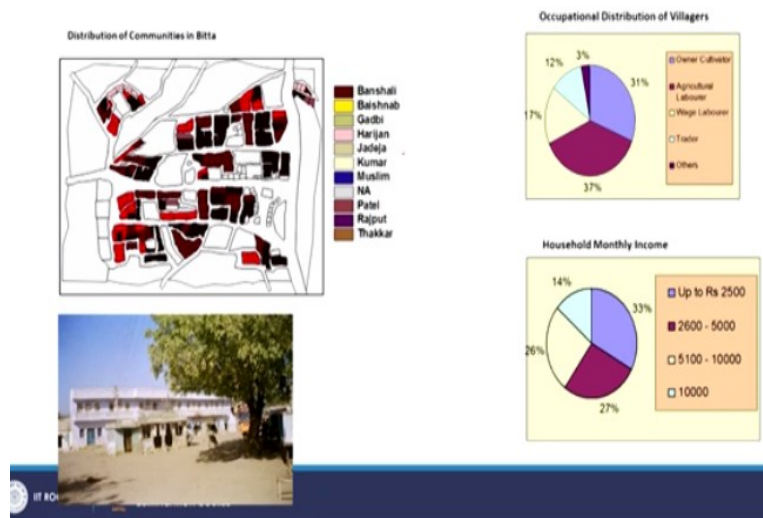
Occupation :
Animal Husbandry, Agriculture, Trading

Landuse Map, Bitta



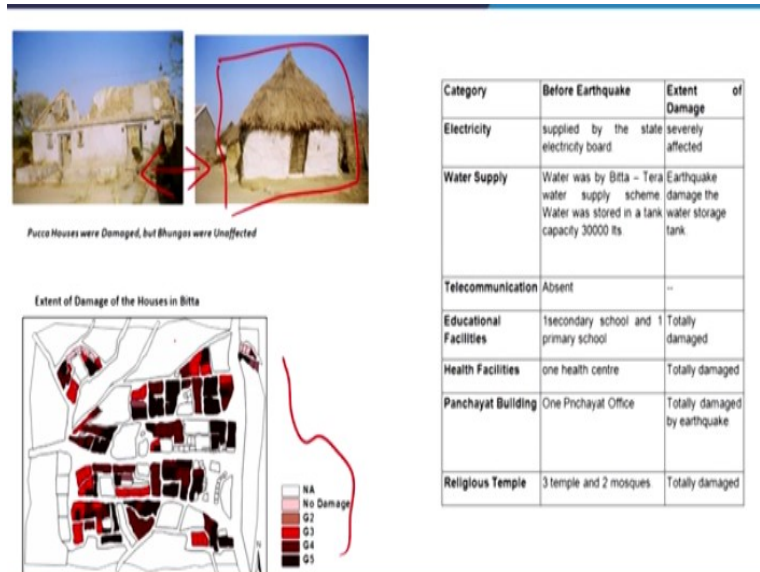
Another one is the owner-driven approach in Bitta village, 85 kilometer from the Bhuj, total population is around 1000 and here it was the existing layout. You can see, they have some commercial stops, building, land use and most of the residential yellow and some public and semi-public, it was the biggest 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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And some are poor, 33% around so, this showing that Pucca House or concrete house broken, but whereas, Bhugas remain there without any impact of earthquake, here you can see the damage level of the houses those partially how they was affected in different category and educational facilities were done, health facilities were done, panchayat.

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Reconstruction
The Village had been reconstructed in the existing site. The villagers get assistance from Govt.

Housing
The villagers have built their own house by getting financial assistance from Government.

A Thakar House Built after Earthquake

Electricity
There are 153 metered connection in the village

Water Supply
Presently 3 tankers of 10000l capacity are supplying water

Educational Facilities
The Secondary School - Built by The Times of India . The government of Gujarat built two primary schools

Secondary School Built by the Times of India

Panchayat Office
New Panchayat office has been build by Village panchayat fund.

Religious Buildings
The community has built all the religious building.

So, people receive money from the government and they reconstructed their own house, they also added money into it. Here is the Thakar house built after earthquake, there were 153 meter connections in the village, presently three tankers of providing water supply, they reconstructed government reconstructed the school, panchayat office was reconstructed also, religious buildings were reconstructed.

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Peoples Involvement/Self Help in Various Aspects

Organization

There was no organizational set-up to control or guide the activities of villagers except the government engineer.

Selection of Target Group

All the earthquake affected house

Training Programme

No participation of villagers

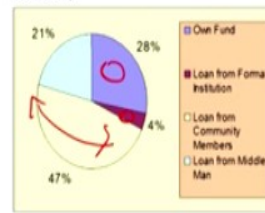
Decision Making

Owner has took every decision.

Finance

Except the government compensation the rest of the amount was Contributed by the owner

Source of Money



Financial Contribution of the Villagers



People build their own house but there was no training program, people actually borrowed money from the government rest of the money; not borrowed but they got the assistance from the government and the rest of the money they provided, and source of money 28% is the own money, they receive the loan from formal institution also, the community Mahajan's or own local Kings, relatives they provide money.

So, these are some of the financial contributions from difference so, a great number of people contributed the dark one you can see that they spend money for their own house like 50,000 or more than 30,000 thousand.

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Contribution of Labour by the Villagers in Bits



- For the construction of School the labour also hired from outside.
- The panchayat office, religious buildings has been built by using local labour.

Skill:

- Only lower caste group use their skill for the construction of House .

Land :

- Except 5 households, all had built the house on their own land.

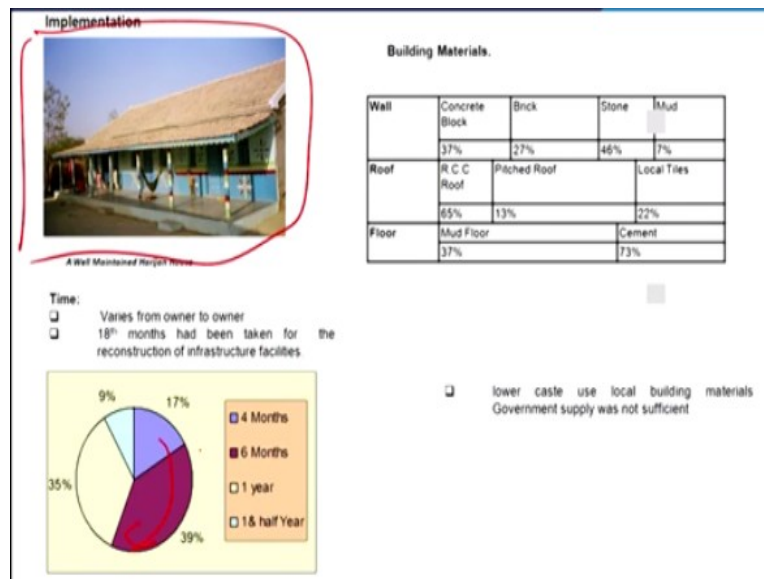
Women Participation

A very few women from lower caste group participate in reconstruction.

Here is the contribution of the labour for their own, most of the people they did not provide their own labour but they hired labour, you can see these all are hired labour and some few

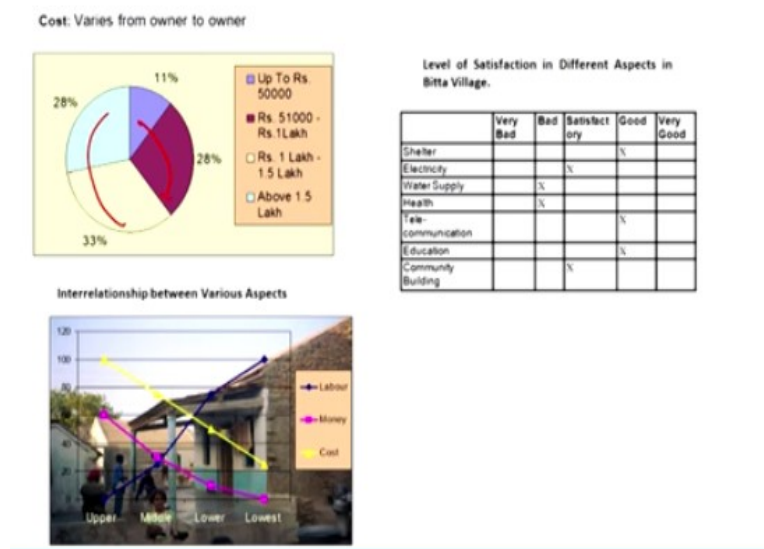
people especially the Harijans and some low caste groups, they contributed labour for their own constructions.

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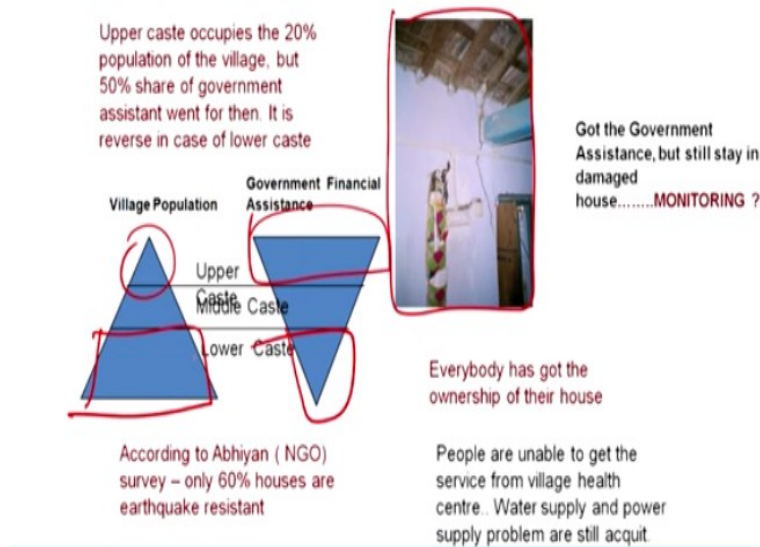
Here was it was since they built their own house, they were satisfied and they constructed and it is well maintained and most of the houses by 4 months to 6 months, a 50% reconstruction took place and for the wall, they use concrete blocks, bricks, stone. Roof; mostly RCC but also people use local tiles, mud, 35 % for the floor, cement 73%.

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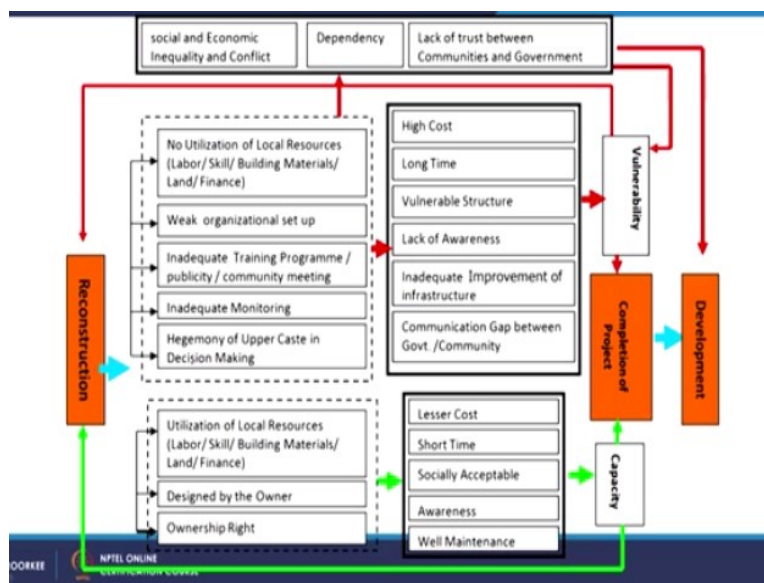
The cost, it varies from owner to owner, in some cases it is; the lowest one is 50,000 to 1 lakh and but it is a highly cost like 1.5 and more in many of the cases. People were very satisfied as per the shelter and electricity, but they were not happy with the public infrastructure.

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And some received the money from the government, but did not use it, did use it for other purposes so, they have less monitoring, and upper-class people are very less but they receive more assistance from the government. Whereas, lower caste people they are the majority in numerically but they receive low assistance according to some survey, and according to Abhiyan, only 60% of houses are earthquake resistance in this village.

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So, no utilization of local resource, weak organizational setup, inadequate training, inadequate monitoring, hegemony of upper caste in decision-making. Therefore, they have high-cost long time vulnerable structure, lack of awareness and so it is creating that lesser cost, short time socially acceptable that was the model we found.

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Table 3 Levels of public participation in different post-earthquake reconstruction approaches in Kathmandu

Criteria of successful public participation	Reconstruction approaches and representative villages		
	Donor driven approach Birta village	Community-NGO partnership approach Ladysa village	NGO/agency driven approach Happa village
Process-based factors			
Early engagement	✓	✓	✓
Stakeholder representation	✗	✓	✗
Clear and agreed objectives at the outset	✓	✓	✓
Continued engagement	✗	✓	✗
Fairness	✓	✓	✗
Power to influence decision	✗	✓	✗
Capacity building	✗	✓	✗
Good facilitation	✗	✗	✗
Local knowledge	✗	✓	✗
Resource availability	✓	✓	✓
Outcome based factors			
Successful implementation	✓	✓	✓
Transparency and accountability	✗	✓	✗
Minimal cost	✗	✓	✗
Owning	✓	✓	✗
Conflict resolution	✗	✗	✗
Cost effectiveness	✗	✓	✓
Self reliance and community empowerment	✗	✗	✗
Effective time management	✗	✓	✓

✓ = Completely.

✗ = Partially.

X = Nohow/ None.

So, we can say that it is the community NGO partnership approach that worked much better than others.

Thank you very much.