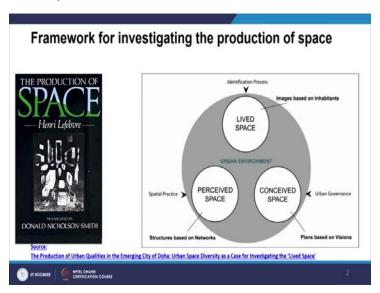
International Studies in Vernacular Architecture Professor Ram Sateesh Pasupuleti Department of Architecture and Planning Indian Institute of Technology, Roorkee Lecture: 18

The Second Birth: Lessons from Disaster Recovery

Welcome to the course International Studies in Vernacular Architecture. Today, we are going to discuss about the concept of the Second Birth in the Context of Disaster Recovery from various lessons from the disaster recovery. In our last class, we did discussed about the concept of Bourdieu second birth, where people are forced to live some other place and they need to know a set of rules. So, that is where we discussed about the concepts of fields and games, because every game is followed with certain set of instructions and it has been played in a particular fields.

So, when the concept of field changes and the concept of game has to be adjusted with this set of instructions with that particular game. So, this is where it takes time for anyone to adapt to the new set of practices. So, this is where we are going to discuss about few disaster recovery aspects. And then we try to understand how the concept of space is produced. So, when we talk about the produced, we one of the important theory we discuss is the production of space by Henri Lefebvre.

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Where he talks about three concepts which is conceived space, because each of these space in the post disaster context, it is conceived by a certain visionaries. In the previous lectures, we did discuss about Mayor Kairos visions in the reconstruction of Ghibelline. Now, similarly, so, every disaster is an opportunity of a change. So, how they envisioned this particular change, how it informs the physical space. So, that is what we refer to the conceived space, whereas, the perceived space, it is based on the way people live, the spatial practices, how it shapes with the communities how they dwell within that particular space.

But then as a habitual processes, how they develop a particular emotions and attachment to a particular place. That is where we refer to the concept of a lived space. Of course, I am just explaining this theory in a very superficial manner, so that, every common man can understand it, but it is a very deeper concept of which he talks about the production of space. Today, I am going to discuss about three studies. One is my own study where I did in Gujarat earthquake study and the second one is a secondary study from the Build Back Better, El Salvador case and the third is the tsunami recovery.

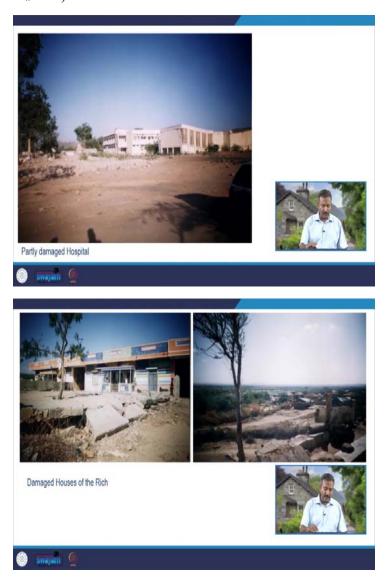
Again, it is my own research study. So, I am going to discuss about some of these interesting relations, how spaces have been transformed, what kind of mechanisms have worked, what did not so, that is what we are going to discuss. So, somewhere in 2002, when I was working in for a study purpose in Gujarat, in which, in Kutch district, where it has hit by a massive major earthquake and many of these dwellings have been demolished and they were damaged, they lost many lives. And when I visited a couple of villages and I did my work on that.

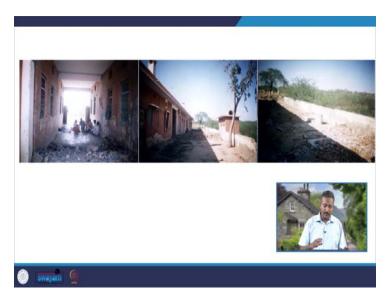
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So, some of the, images of that time restriction, some of the schools were damaged, some of the hospitals were damaged, some of the historic forts were damaged, some of the industrial godowns were damaged, a lot of destruction, but what you can actually observe is here, some of these traditional houses, which we which are built with the wattle and daub constructions like Bhonga. The majority of them they survived for that major earthquake, whereas, many of the houses which were built with brick and concrete houses, they are mostly suffered with damages, especially in the corners, in the junctions, that is what we can see on the technical points of it.

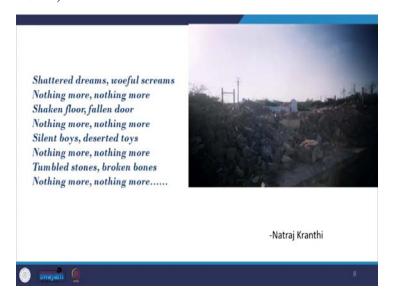
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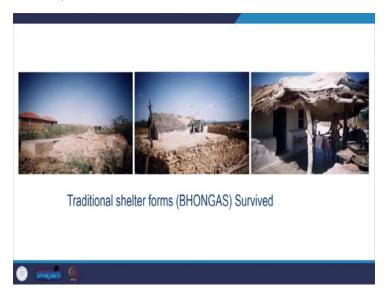
Again, this is one of the image of the partially damaged hospital and some of the houses which were damaged partially and because when it is come partially damaged people were not able to live there and some of them they vacated the houses and obviously some of them who are homeless, they started living in these damaged houses. So, these are some of the important understanding, which I have got from the initial fieldwork.

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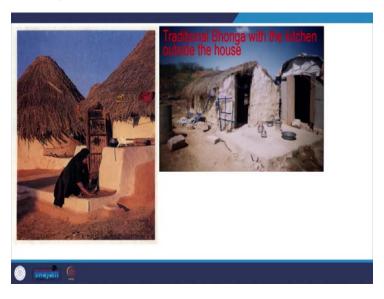
So, one of my friend Nataraj he just spelled out in this way, shattered dreams woeful screams nothing more, nothing more, shaken floor, fallen floor, nothing more, nothing more, silent boys, destroyed toys, nothing more, nothing more, tumbled stones, broken bones, nothing more, nothing more and this was a scenario of the immediate impact of the disaster.

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And as I just said about the traditional forms, the traditional house forms which are referred as a BHONGAS in the local language, they survived and many of them they are some of them are built on a raised to stone wall and the made with a wattle and daub, these are some of the evidences and the whereas, the brick and concrete houses completely have demolished and these are the houses which were built by the compressed stabilized blocks later on after the post disaster by different NGOs.

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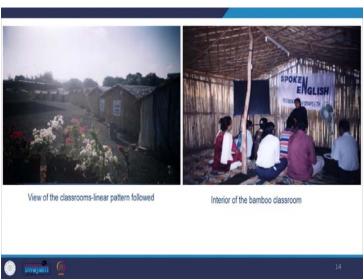
So, these are the typical form of this dwellings, you can see these wattle and daub constructions, which are again putting these kinds of mud construction and this is called otla the raised platform, so, where the woman perform the domestic activities like cooking food or cleaning certain things and they also do maintain regularly.

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The interior of these places and exteriors and some of these common facilities, they have these community halls, they have these small commercial space and religious buildings and people have developed some kind of small open bathroom.









So, when I said large infrastructure has been affected, first of all schools is also a major fact, the one of the important buildings, which affected the children's future because many of them they are not able to go to school so, they are almost in the first one year the schools were closed and because they were shut down and different NGOs have come forward and they constructed with a temporary materials like the bamboo classrooms, the some of them they were constructed with the paper pipes, laminated paper pipes and the dining hall was made with the temporary with the canvas, tents.

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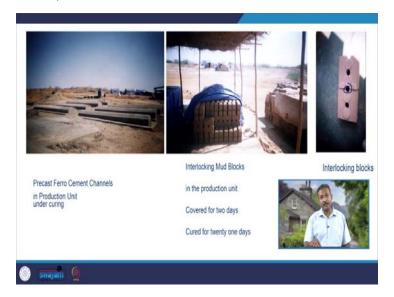




So, similarly, certain sieving machine training center for providing an alternative livelihoods and training for the computers. That is where they are done with a small trusses and so, this is a kind of temporary rehabilitation efforts, which has taken place, whereas, when we move on from the stage one, which is a disaster impact and then we move on to the immediate relief and rehabilitation, which is a temporary phase, but then at some point of time, they have to really search for locations for the permanent shelter and also what are the resources on how we can build that.

So, this is one aspect of where the technology transfer took place from the Auroville and they have adopted the compressed stabilized earth blocks, the interlocking blocks, where they talked about sand 60 to 65 percent, silt and 10 to 5 percent, clay about 15 to 20 percent and gravel about 10 to 15 percent. And of course, they make sure that the salinity is not greater than the 1200 ppm and pH values not less than 7. So, in that way this is a small manufacturing unit at Kutch Nava Nirman Abhiyan. Today, it is referred as Hunnarshala.

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And so, similarly, the ferro cement channels, the compressed stabilized block, these are the mud blocks and they cover with for two days and then later on they dry it for about 21 days, so, these are the interlocking blocks because so that the vertical reinforcement also can be placed in between these blocks especially at the corners.

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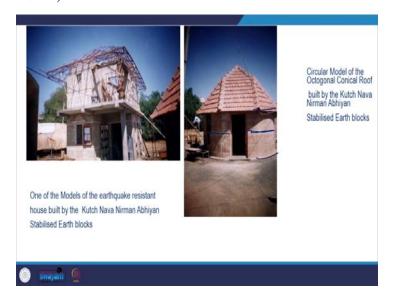
So, there are also other technologies, which have been adopted in the disaster recovery program. This is a photograph from Nirmithi Kendra in Hyderabad, where they have talked about the guy in the interlocking so they have designed some kind of precast frames and these hollow brick models where they put these blocks into these frames and that is how they formulate these either roof panels or the wall panels like that.

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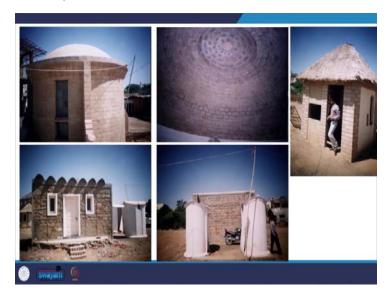
And in Gujarat again, you have these geodesic domes, which will also construct they are all earthquake resistant, but similarly, this is a model which we have constructed by the Nirmithi Kendra.

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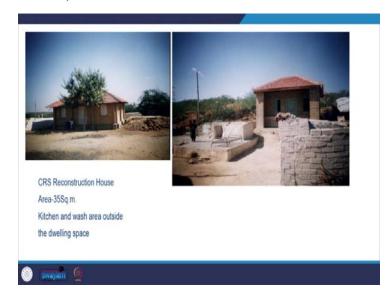
And in Kutch Nava Nirman Abhiyan or did constructed about using the CSEB blocks about G+1 stories and something similar to the boonga structure where there is a circular house and which has intermediate bands there is plinth band, sill band and the roof band. And similarly, it has a kind of octagonal conical roof structure, which reflects to the traditional housings.

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They also adopted some Ferro cement channels, the spheroidal domes and they have these prefab toilets, so, variety of inputs, which has been given based on for time modern interface in the modern and traditional forms.

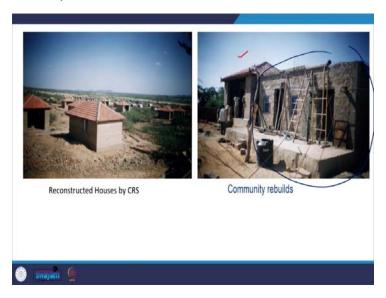
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So, these are the some of the houses in the village which I was studying, it was actually adopted by the Catholic Relief Services and there are many other NGOs who were working at that point of time and what you can actually see is, what they did was, they built exactly at the same location where the house was, so, then that way the skeleton remains the same, maximum in cases where the houses completely destroyed, they either make it adjacent to that. So, there are some other NGOs who have built up these concrete technologies characters, they have built with concrete houses and this is again a hospital which was built even which can adapt to the nine ritcher scale.

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So, but interestingly, what one can notice is next to this particular NGO provided house, they started building using their local stone and local masons, they started building a stone

shelters, this is where their local understanding of their house so, in fact, they were attached to this kind of housing before and in fact, this community themselves, they have started building these things.

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So, this is something which we have to understand at that point of time. Of course, there are many studies later on, which have studied on Gujarat earthquake and but interestingly, what is important in Gujarat earthquake is the public participation. They engage the community in the construction work and train them and the GSD may issued certain guidelines for retrofitting and the newer constructions.

And so, in that way, this is one of the case, where we can actually refer with the significant amount of public participation, the community engagement and it was very easy for them, because most of the people actually they are either the craftsmen or they are having some tendency of working with these laborious activities.

So, in that way, it was very easy to mount them and to train them into the construction work so that they can able to supervise the housing process. So, many of the NGOs have worked on that process. So, we come to a second study. This is from the Build Back Better, which is edited by Michal Lyons and Theo Schilderman and in that the editors brings forward many different cases from India, Nepal, Bangladesh, El Salvador, Peru, Colombia, Kenya. So, I am just showing one example of the El Salvador case where he talks about the progressive housing and how it works.

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So first of all, I think everyone is aware that this is where we are talking about the El Salvador, which is the very smallest country in the Central America. And there is one is the poverty 48 percent of the inhabitants of the El Salvador live in the poverty or in an extreme poverty.

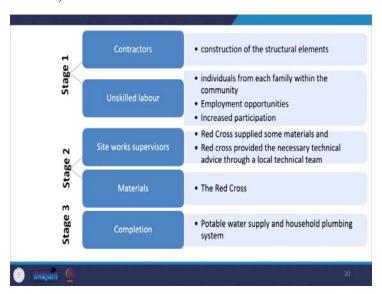
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So, the NGOs like the Spanish Red Cross and the Salvadoran Red Cross, they come together and they started working on this progressive housing as a solution. And so, what does it mean because you see, how this the core house approach which is progressive housing because the courthouse they immediately developed a code dwelling unit and then they give it to the inhabitants, but then later on, they gradually develop it, but here in the progressive housing, it

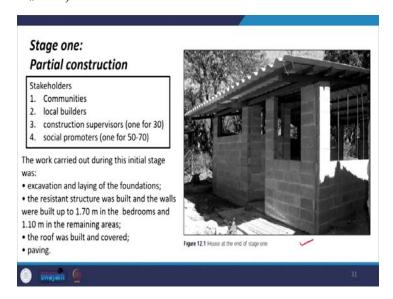
goes in an incremental way in a different stages. For example, I think every one of you are aware of this Alexandros work, so, where we talk about the housing units, which are delivered to the dwellers, the above one and gradually, after some time how they modify these houses is almost like 100 percent incrementality.

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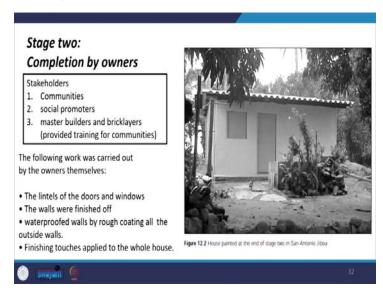
So, in one of their projects, what they did was they have divided into stage 3, 3 stages of work and stage 1, the contractors and unskilled labor. Here, they are talking about the construction of the structural elements and the individuals of the each family member within the community and employ creating some employment opportunities and the increased participation. Whereas the stage 2, it talks about the site work supervisors and the materials. So, Red Cross have supplied some materials and necessary technical advice. And again, the Red Cross have supported this and then here the completion the potable water supply and the household plumbing system.

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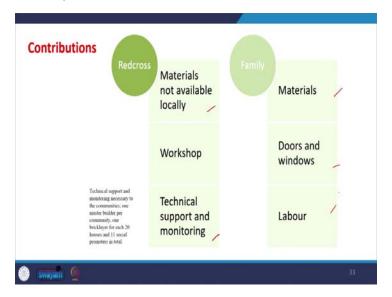
Let me show you how it works. So, in the stage 1, which is a partial construction, so, that will the basically do the excavation, laying the foundation and they build an earthquake resistant structure. And they just give this kind of skeleton, what you can see house at the end of the stage 1, you have these spaces for windows, where you have spaces for at the sill level and there is a roof, the basic structure is given to them.

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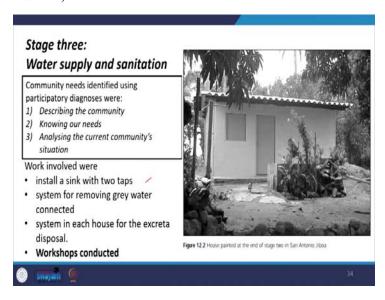
And this is the second stage is completed by the should be completed by the owners. So, what they should do is, the lintels of the doors and window, so, they purchase, they put some money forward and then they try to do the finishing touches of the whole house.

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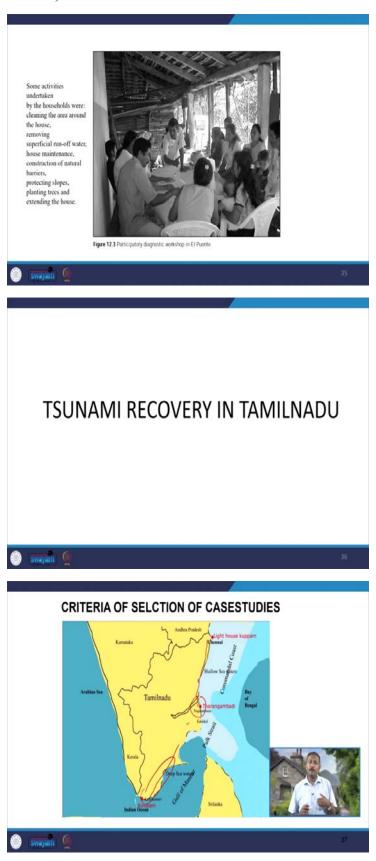
And similarly, if you look at the contributions, the Red Cross has given materials that are not available locally, the workshops has been conducted the technical support and monitoring, but the family bought some materials like doors and windows and the labour, they also contributed to certain labour.

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And stage 3, they need to complete this with the service point of it water supply and sanitation. And so, here they installed something with the two taps and removing the gray water connected systems that remove the gray water, so like that there are some participatory workshops which were conducted.

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So that, they are not only given something but they are trained in that so that they can manage it in a longer run. Of course, there was some issues with the for especially with the land tenure how do they purchase because some of them who are not recognized within this program, they are not they are avoided in this. So, obviously, there are issues with the land tenure, how we can procure that and for them, they were not able to get into this program. So, there are other challenges in this particular participatory approach.

So, now, we talk about the third case of the tsunami recovery in Tamil Nadu. Here I was working in Tamil Nadu and I did three case studies, how did I selected my case study, so, I visited almost 17 villages in 6 districts and I visited the most affected and the least affected and I also visited the institute constructions on the relocated as well. So, in that way, like when I was traveling around, I could see the land of the northern part is more or less the fairly plain and whereas when you move towards the south, it has a small hilly topography.

And also, here mostly, I whenever visited these villages, they are mostly from the Hindu communities here, I could able to get the mixed communities and most of the South or southern part of Tamil Nadu I could able to get the Roman Catholic communities. So, and also the northern part is more of a shallow water seas and the deep water seas. So, obviously, when we talk about shallow water in the deep water, the deep water will have more fish and that is how it has given more economical standard of these fisherman.

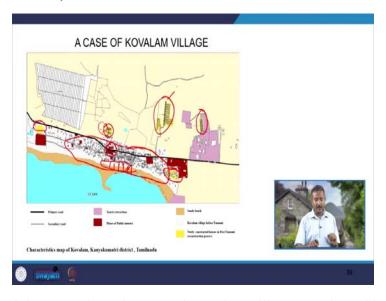
So, I have selected one Dalit island and one Tharangam a village called Tharangambadi where even Danish people live still there some of them and the Muslim people and the fisherman communities. But this is a completely a Roman Catholic community Kovalam. And here the traditional Panchayat is the church.

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So, I have been doing work on a participatory approach where I was almost living like a life of a fisherman, going to fishing with them, talking to them, understanding the daily behaviors, understanding the daily situations and this has given me a greater understanding how the society performs, it is not a very shallow understanding, because after spending months and months with them, so, everyday behavior, how I was able to understand their festivals, how they have changed.

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So, this is one of the case where the case of Kovalam village, so where this is a traditional village and you have these ceremonial buildings, the churches in the center, that is the village center. So, after the tsunami, what they did was they moved these affected houses almost 88

houses were affected in this region and they identified these 88 houses and they have to move back because there is a coastal regulation zone, which implies that okay, you cannot construct anything beyond these 500 meters, so in that way they have able to found some of these lands, which are government owned lands.

And first initially they made as a project of 88 houses and the church has approached some NGOs, the church has approached from NGOs and they have actually given some support of the construction of the dwelling. So, the land belongs to the government. And then in that way these 88 houses were gone there.

And later on the church realize why not we take this as an opportunity and why not we address the pre disaster vulnerabilities. So, that is where they have many frequent disputes with the neighbors, the water supply issues. So, in that way, some of these villagers came forward and they put some money forward and they bought some other lands.

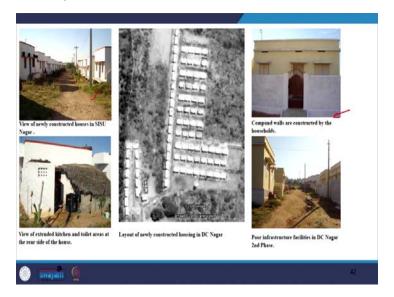
And then the church has approached with other NGOs and they supported their construction activities. So, in that way, the church plays an important role in identifying and bringing together. So, one of the important difference what happened was these people who were earlier having a houses, but now they are having a 10 year tenure, they are on only after 10 years, they will get their tenure.

But whereas these people, they bought the land, so from the beginning, they had their ownership. So similarly, after that the rule have changed then later on, they bought two more colonies here and then they started developing. But what kind of changes has happened?



So, earlier, these are the traditional forms, many of them are joint families, there are about 400 households, but then, after the tsunami, they are all scattered, they were disintegrated into nuclear families. And that is how it became 1000 households after the post tsunami. So, this is a traditional housing pattern, they used to have a community well and nearby is very narrow alleyways, what you can see here, these are some of the kind of traditional pattern of these houses because they are living in a coastal side and it is very hot. And so in that way, they used to always have a shade in these places.

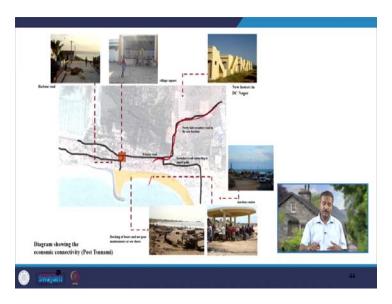
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But whereas the newer constructions, it has followed more of a kind of urban lifestyle where the gridiron patterns or the very linear patterns have been followed. And each house they have, when they were allotted like this later on the communities they started building a compound walls and they were given houses but then there were for the initial years, they were having issues with the water supply and sanitations. And people started extending the kitchens at the rear side because these are the fishermen communities, they cook outside.

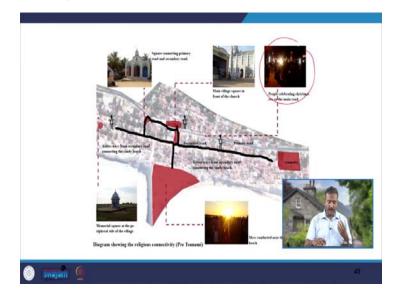
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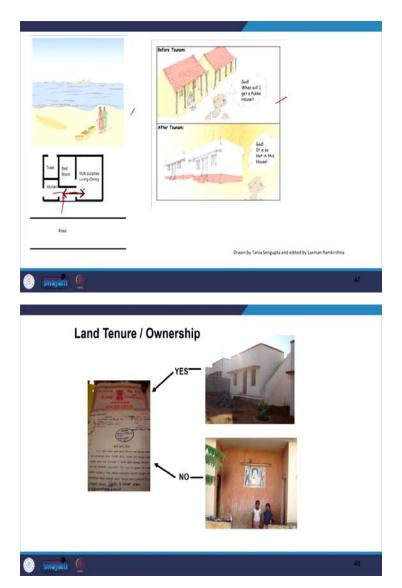




So, that way, this is auction center and they know their harbor. So, in that way, everything was near and dear in the Old Village setup, but then after the relocation, they almost have to walk for about 2 kilometers by taking their diesel, the net, the gas, anything, their food, anything, which they have to carry for the sea purposes, the fishing purposes, so, they need to travel 2 hours, so about 2 kilometers. So, in that way, what happened was, the distances have increased.

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And earlier, the woman used to see that, their man is coming on and they were able to go and take some food and wait for them, but now they cannot see their boat. So, now in that way, they are not able to go and wait for them. And obviously when the men come back from sea they are very hungry and they do not find the food and automatically they will become furious and then they show all their anger on their house, the family members. So, this how a small aspect of not seeing not meeting their family members with the food also have certain implications with their relationships.

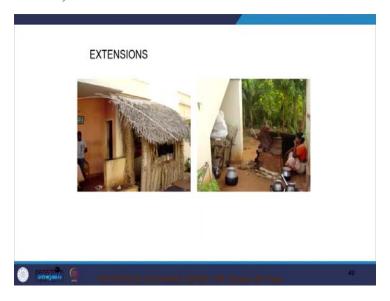
And earlier, they used to participate in the church activities regularly. But now because they are not able to travel for 2 kilometers by walk, especially the older woman, elderly people who are not able to come to church regularly and whether it is an economic needs, whether it is a cultural need, everything has become far away. And in fact, when they were living in

these style houses, that is where when they were realizing, what kind of one should I get a new house, a pucca house was a brick and concrete house.

So, after the tsunami, when the NGOs have asked them what kind of house you would like to have, so that is where exactly they said we want a pucca house, but that is exactly what given to them. But now they realize it is very hard, it is not to their climatic needs. And similarly, the layout of the, in fact, the kitchen they want to take the food from the kitchen, from which is facing to the outside to the multipurpose room. So, in that way they are according to their cultural norms. They do not want to take the food, show the food to others and take it to the other room.

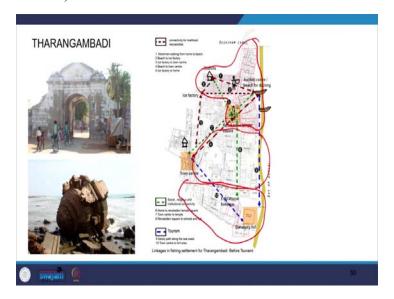
And also, the toilets, they some of them, they did not like these attached toilets and then they oriented that from the other side. And in fact some of them they even constructed a toilet outside like, as I said, the land tenure and the ownership the people who were the 88 houses, they got only after 10 years but the people who put the money for the by purchasing the land, at least they got the tenure, which indicates imagine if they have to get married or if they have to spend some for any emergent activity. So, they cannot sell these houses for the 10 years.

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Now, some of these women, they have actually extended their house friends or shops for the economical needs, because some of them they lost their husbands, they extended their kitchens.

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And similarly, this is a second case in Tharangambadi, so Danish colony and this is Masilamaniswara temple. And here if you see, just want to explain this part of this settlement is occupied earlier by the Danish you have the Dansborg fort and they have some of the colonial buildings here. And this part is mostly predominantly occupied by the Muslim community it was goes back to the pre-colonial Muslim houses. And this is mostly the fisherman community, you can see the spatial understanding how it is very vast in size and shape. And then it goes back to the fisherman's very closely knitted community.

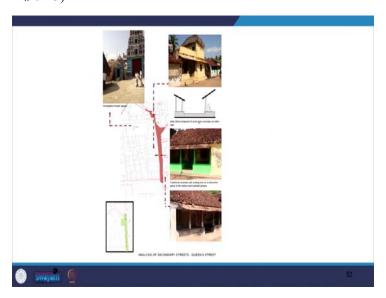
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After the relocation here SIFFS was working, South Indian Federation of fishermen societies was working on it and Dr. Benny Kuriakose architect and they have actually done a concept

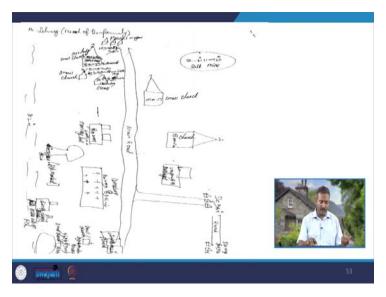
of the houses and they actually did the whole habitat mapping exercise for this particular settlement. And then they were able to identify some land nearby. And then that is where the new cluster some of these affected people, they were all migrated to the newer place.

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And the older settlements, if you look at it, they have these traditional houses, tile roofs with the verandas. The whole street networks are very friendly in nature because they are referred as talking streets in the evenings, everyone sit outside and talk.

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And when we actually also gather certain information through their mental maps, like when we asked them about how do you understand about displays, how legible is these places and how it has changed. So, some of them, they were able to draw some mental maps, but some of them they were not able to draw any mental map.

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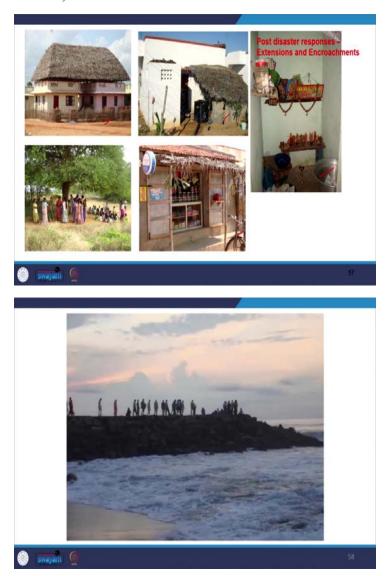
So, because for the first time they were touching the pencil, so in that way, what we did was we given the maps of previous settlement and the post tsunami settlement before tsunami and after tsunami. And when we say give a hint of a landmark, let us say this is a temple Renuka Devi temple, then they say my house was here, then they say I used to move around this Princess Street to drop my child in the school, go to the market here, go to the ice factory here, go to the harbor here. So, in that way, he used to map all these points.

The same thing when I refer to the school as a landmark, they knew my house is here, then I move around my children goes like this. But this mental map is a very important phenomenon, because it actually given us a hint that why there is a it is weakening the social networks across the communities. Because earlier there is Muslim and the Hindu and the Christian communities, they were all linked with this Princess Street. So, whether for the need of educational institutions or anything, they travel in the street, but today after the tsunami, they are not able to walk down in the street.

So, in that way, many of them when their interviews, they said we are feeling very bored because my friends were not there, feeling isolated, we did not understand what it is. But now with this map, we were able to see even a small walking pattern, create certain network, create certain interaction and it has changed completely after the tsunami.



And again, this is again a Dalit island, which I was used to go these are about 11 to 14 villages and we used to travel every day by boat and then study about their houses, we did some focus groups. And so here also you can see there already before the provision has been handed over to the community, they already started expanding their kitchens and everything.



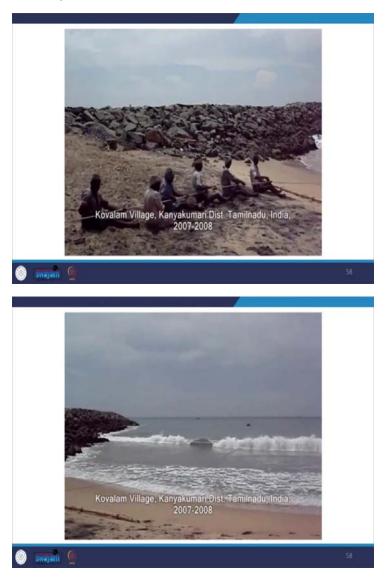
So, as a result, what you actually see here is a variety of encroachments and their extension so for example, in these two houses, two of them two brothers have got the house in the same street, so immediate and as an adjacent man. So, what they did was they constructed a single roof to represent one family, the extension of the kitchen at the rear side and this woman she lost her husband and with she is left over with three children and she got a house. But how shall she survive?

So, that is where she started expanding, extended a shop in front of the house and they have given a toilet but then a toilet was converted as a puja rooms because they were not comfortable as per the vastu considerations and though they were given some limited public space stay opportunities, people started encroaching the nearby places and they started

making other children playgrounds and now at this point of time they even made this as a small school. And I am going to show you a small video of the how the people the respondents, how they have responded, what are their understanding? So, this is going to be a small video.

(Tamil audio being played from 30:31 to 33:01)

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Unknown speaker: They feel very bore since they were interacting with them they are sharing their burdens and the other thing. Since they let it, they do not feel comfortable here. The long their company.

(Tamil audio being played from 33:16 to 37:54)

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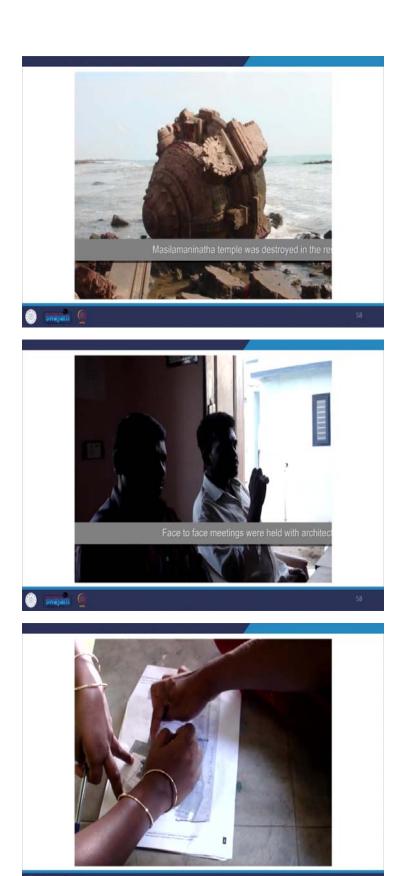


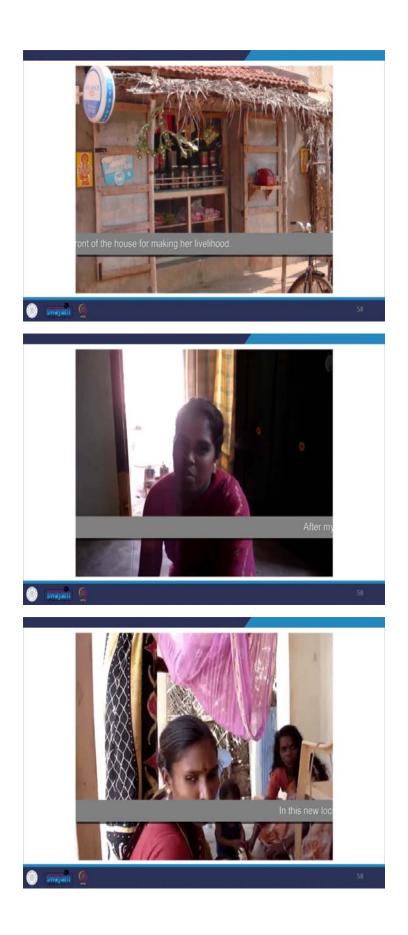




















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Professor: Again, I have visited these places again after 8 years. Now, what I can see in these newer clusters initially they were given a small house like this, but today these houses have been modified in this manner, they extended their porches in the traditional pattern, they brought these Mangalore tiles or they have these tiled roofs and wherever the spaces are leftover, they convert it as a small church for so that they put the sea sand and even the elderly woman can sit there and pray. And they made a bell tower which reflects exactly the same way of what the earlier parish church is there in the old location.

So, in that way, many modifications you can observe, they are bringing back the traditions and so, in all these three aspects, what we have to three studies, what we have to learn here is, first of all the traditions, they do not disappear, with time they transform, they transform and they get they negotiate with the modernity. They negotiate and they try to establish a particular place for them, like in the case, what we have seen here is they even brought the symbolic and the semantic versions of it, so, were they brought in the same color, the same style, they built a bell tower.

And when I have to observe how the people have adapted, it is not just 1 year or 2 years, but when I started looking at 8 years, it have given me a completely different picture of what I have seen 5 years before or 7 years before. So, in this way, we conclude this lecture that yes the concept of second birth to exist but this in the disaster context, the people are positioned into a new field, whether it is Gujarat earthquake whether it is a Latur earthquake whether it is El Salvador.

So, they have to adjust with certain new challenges, whether it is a land tenures, whether it is a layout of a settlement, whether it is a neighbors, whether it is a services. So, they have to negotiate with this thing. They do negotiate. And at the end of the day, what we actually see is they bring back certain things and that is where the traditions negotiate. And they tried to accommodate what they got also. In that way they tried to adapt. So, this is what we learn with this process. Thank you very much.