

**Disaster Recovery and Build Back Better**  
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**Lecture - 35**

**Designing Culturally Responsive Built Environments in Disaster Context**

Welcome to the course; disaster recovery and build back better. Today, we are going to talk about designing culturally responsive built environments in disaster context. When we talk about the cultural responsive built environments in a disaster context, one has to understand the basics of the cultural issues and how especially, they are related to the built to meet needs and how they change from the pre-disaster context during disaster and the post-disaster context and over a long-run process.

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So, this is where, I would like to introduce you to the contribution of Paul Oliver's work on built to meet needs on especially the part IV on cultures, disasters and dwellings and he brings a number of cases along with it and how culture has been overlooked in the recovery process and as a result what kind of spaces are produced and as a response situation what kind of meanings have developed.

And this is where how development and culture are not related to each other in the process. We have also seen similar examples in the Tsunami recovery process in Tamil Nadu, the case of Tamil Nadu. So, today we will be covering about places in Turkey in the Mediterranean countries and also the recent Hudhud cyclone which my present work is also going on.

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In the strange landscape of Cappadocia in central Antolia, thousands of peasants live in dwellings carved out of tufa rock pinnacles, formed from ancient deposits of lava dust. On exposure to air, the soft rock hardens so that the interiors have firm walls, while the stone from the carved voids makes a secondary building material.

Central Antolia is earthquake prone and the tufa pinnacles can collapse, destroying the dwellings and causing loss of life.

Image source: Shelter  
edited by Lloyd Kahn

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So, the picture which you are seeing here is in the Cappadocia and also the central Antolian region of Turkey. There is a very different landscapes of these pinnacles, the tufa rock pinnacles which are spreaded over in the Anatolian region and these are basically formed from the ancient deposits of the lava dust and because of the exposure to the air this soft rock hardens so that the interiors can have the firm walls and the stone can be carved with some voids and which actually becomes a kind of living spaces.

So, in fact, if you ever look into the Turkey, it actually falls the fault line in the world which the global fault line which actually passes through the Turkey and Turkey is prone to the earthquakes and these tufa pinnacles being a very soft rock nature, they often collapse destroying many dwellings and also causing a serious loss of life. So, what you can see here is like you can see the frequent damages, which is occurring to these pinnacles and in fact, one is also very much concerned about how to protect these natural forms.

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Cavusin village (Old Greek town)

Cavusin is 4 km away from Goreme-Avanos road. Basically houses surround a mountain like massive rock. It is all messed up as a result of the erosion of the rocks over time and earthquakes.



Image source: <http://www.freelancetravelturkey.com/tr/turkiye/11/cappadocia/cavusin-village---old-greek-town-.html>

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In fact, there are some of the case studies in Cavusin village in the old Greek town which is about 4 kilometres from the Goreme-Avanos road. So, here it's a kind of big mountain which is embedded with a lot of dwellings which is intricate dwellings which are embedded like a mountain, what you can see is that all the dwellings, series of dwellings which are very organic nature of it.

And you can see that destructions have happened because of the frequent earthquakes and also the erosion due to the exposure to the air and also the rocks, the soft rock keeps falling down and a lot of destruction over there and during the earthquakes and of course, these communities were given an opportunity to go back and resettle in someplace but some have they denied going back, many of the communities they denied going back.

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Cavusin Cave Village

Image source: <https://www.wilflyforfood.net/2016/01/26/cappadocia-highlights-red-tour-with-bridge-of-the-world/>

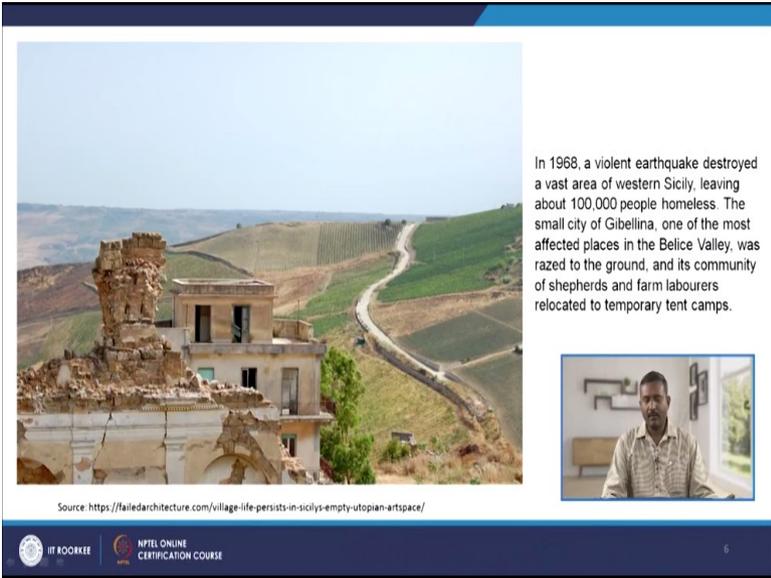
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And they came back and they try to settle in the you know, vicinity of this village, despite of knowing that this place is prone to earthquakes and there is a danger, they are going to live on this edge conditions but still, why do you think that these people have come and stayed here back. Here, we have to notice one thing; it is not just only on the matter of safety which communities have thought.

There is also the other aspect of their livelihood, which they also have which has actually attracted them back to it and that is why because it is being a tourist spot, so it has actually brought these people back and they started instead of settling in the above areas, they started settling in the bottom part in the foothill area and where they have some restaurants or some kind of economic resources.

So, that is where, the tourist economy is also an important aspect, how communities have believed that the livelihood is also a part of cultural resource and will go to another case in the same Mediterranean climate.

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In 1968, a violent earthquake destroyed a vast area of western Sicily, leaving about 100,000 people homeless. The small city of Gibellina, one of the most affected places in the Belice Valley, was razed to the ground, and its community of shepherds and farm labourers relocated to temporary tent camps.

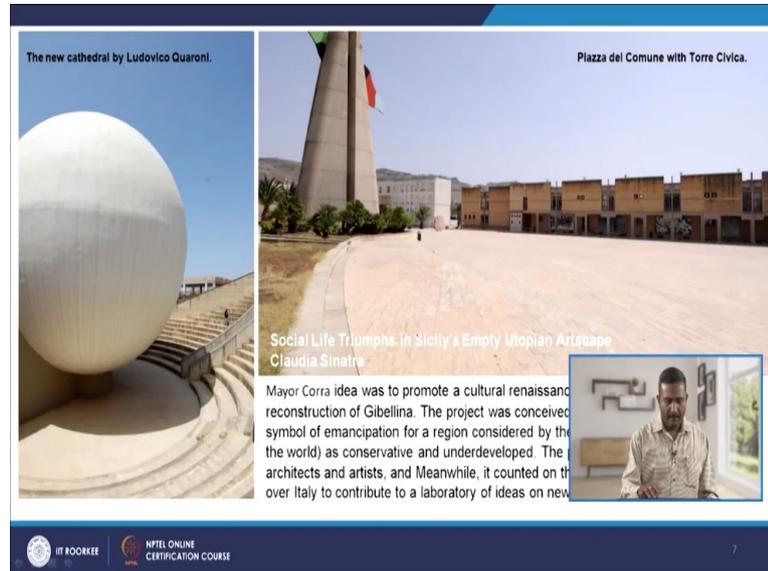
Source: <https://failedarchitecture.com/village-life-persists-in-sicily-empty-utopian-artspace/>

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In 1968, there has been a vast earthquake which has destroyed the restaurant Sicily almost leaving 1 lakh people homeless. There is a small city called Gibellina and this is one of the most affected places in the Belice Valley, which was completely razed to the ground and its community of shepherds and farm labourers relocated to the temporary tent camps. Now, when you talk about an earthquake-affected area, obviously, the whole trouble creates you know, a massive scene.

You know, that is very destructive scene for the people, they somehow under the immediate impact of a disaster, they tend to look for you know, first safeguarding themselves and try to look for an immediate shelter, so that is where they moved to the temporary tent camps.

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But then at that time, the mayor of that particular Gibellina, mayor Corra he talked about, he thought about how disasters could be taken as an opportunity rather the curse because disasters are the agents of change. So, why not take this as a golden opportunity and how we can build a society with these modernistic philosophies and ideologies. So, what he did was he promoted an idea of the cultural renaissance through the urban reconstruction of Gibellina.

And his vision like that is where we talk about a conceived space of the visionaries of the politicians, of the architects, of the intellect, how they want to perceive this space, the urban space and how it has to showcase the visions of modernity. Also, a symbol of emancipation for a region considered by the rest, so it want to be a model for the rest of the country. It is a showcase model, that it can show that this is how the modernism, is a modernist understanding of the place.

And how it can become a role model for the other cities, within the region and because when something has been affected and when someone is really working out on bringing a lot of thoughts and visions into the place-making process. It becomes a laboratory you know, a big laboratory, attracting various artists, various architects and various intellectuals coming from all over the Italy to contribute to make a laboratory of ideas on new forms of building.

So, how an art and architecture can come together, how we can actually revitalize the whole community and how they can actually you know, come up with this kind of aftermath of a disaster and how they can actually bring back to the normal and that to in a more of a modernistic understanding. So, what they did was, they brought a lot of artists, they develops lot of plazas and the piazzas.

Here, you can see that the Piazza del Comune, the community plaza with Torre Civica. It is a kind of civic plaza and here, you can see the new cathedral by Ludovico Quaroni and like that various artists have come to install their own ideas in the form of plazas, in the form of squares, in the form of monuments, in the form of buildings, in the form of housing, also some smaller level of artwork.

And in terms of the new dwellings, they actually aimed for about 50,000 people but today, unfortunately, only 5000 people lived there.

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The new dwellings

While the town was designed to hold 50,000 people, less than 5,000 permanent residents currently live there. If we add to this the fact that many of the grand public buildings and much of the infrastructure remain unfinished because of public funding mismanagement and political corruption, the general sense of emptiness across the city should not come as a surprise.

Furthermore, the typology of the new dwellings, with the front garden detaching the house from the street, separates neighbours even further from one another, changing the habit of front door, street socialising, and instead fostering isolation and segregation of uses.

Source: <https://failedarchitecture.com/village-life-persists-in-sicily-utopian-artspace/>

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And much of the housing, if you can see that they have these front gardens and they have these detached housing and the whole street, it was a vast street layouts that separates from the neighborhood you know, they are all like a row house aspect but that communal interaction gets missing in this process because that the Mediterranean countries they have this veranda concepts and the evenings sit outside, they chit chat with each other.

But now with the scale of the street and the footpath and the parking and the front garden and so the whole scale have taken away that the social interaction. In fact, instead of socializing it

has fostered the isolation and segregation of users that is how this project have ended up. In here, what you can see in this slide is the plazas.

Do you see any people, you know here the demographic understanding has been hyped a lot from 5,000 and they have aimed for 50,000 and the infrastructure is planned accordingly. Today, what you see is an empty plazas and empty cathedrals, so all together an empty one.

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Hidden and abandoned sculptures.



Few locals understood the connection between the artwork and the reconstruction of the city, despite the fact that artists and inhabitants closely collaborated in their realization.

The attempt to initiate a participatory process remained limited to the passive involvement of the population in workshops and activities organised by the artists. Indeed, rather than fostering active engagement for the co-creation of the artistic landscape and the city, the institutions washed their hands of their responsibilities, leaving the artists to try to fill the gap.

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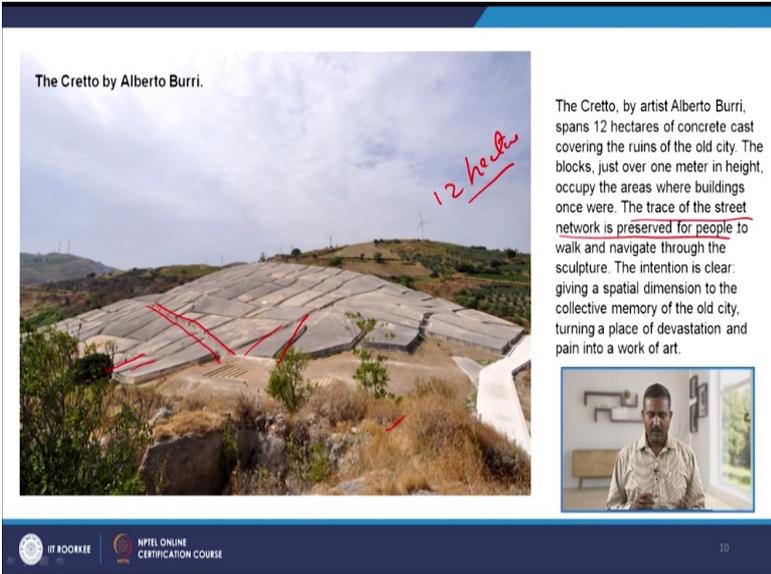
And the locals, few locals have understood the connection between the artwork and the reconstruction of the city, how art can actually bring encouragements with the people, how they can engage them in the participatory ways and you know, how they can realize this innovative way of connecting with the art and many workshops have been conducted by the artists coming from different parts of Italy.

And with the local citizens and in fact, rather than fostering active engagement for co-creation of the artistic landscape and the city, the institutions washed their hands on their responsibilities leaving the artists to fill the gap. So, in that process, what happened was because there is a lot of participatory activities working on and they could see that yes, there is a scope of engaging the public and gradually the funding.

Either the funding institutions or the organizing institutions, they try to wash away their hands that yes, why don't you guys carry on with your artwork you know and try to fill the gap and also there has been infrastructure, many of the infrastructures has remained unfinished because there has been mismanagement.

And also, some political corruptions and what they have envisioned about the city and what they have got is a complete vast scale of a city which is utterly silence. Also, what you can see is the Cretto which is designed by Alberto Burri.

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The Cretto by Alberto Burri.

The Cretto, by artist Alberto Burri, spans 12 hectares of concrete cast covering the ruins of the old city. The blocks, just over one meter in height, occupy the areas where buildings once were. The trace of the street network is preserved for people to walk and navigate through the sculpture. The intention is clear: giving a spatial dimension to the collective memory of the old city, turning a place of devastation and pain into a work of art.

12 hectares

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This is about a 12-hectare land; this is actually the old village where the whole village has got destroyed. Now, what they did was they put, they covered with almost a 1 meter height of the concrete blocks and these alleyways are actually the existing street network of that village so that they want to bring that memory of the skeleton of that village as it is in a kind of block model but one can imagine of the scale of this artwork.

It is, we call it as you know, it is a kind of concrete jungle you know 12 hectares of land has been concretized as a part of in the name of the art and it has been as a memory. So, they try to preserve this street network for people to walk and navigate through the sculpture. So, they can orient themselves, they can reflect that the memories where they belong to, where they used to live you know, that whole memories could be entitlement.

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Unmistakably, what the Cretto and Gibellina Nuova have in common is silence: the first is a city forever captured under a shroud of cement, 'archaeology of archaeology' as a reminder of the past; the second is a cemetery of houses, squares, monuments and unfinished infrastructure.



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But the whole thing you know, what you actually observe is the whole thing is now a silence place, unfortunately, the Cretto and the Gibellina Nuova which have been rebuilt. The common thing is the silence and why the silence is all about; I mean what are the factors that brought this silence. The first one, the Cretto which is captured under the shroud of cement, archeology of the archaeology, as a remainder of the past.

So, they are trying to reflect as a memory which is a completely studied for cement blocks and the second, is a symmetry of houses, squares, monuments and unfinished infrastructure. The second one is actually, is it is the houses which they are made for the people but still not many people are living here and not much of social aspect is there in Gibellina.

And there is also about the livelihood you know, how they can actually get their livelihood aspects of it. There are all many other factors which is related to it, so the scale has been in this what we are learning, a scale has been hyped and as a result of that what we are seeing is the infrastructural input has been mismanaged and an unfinished work has been held over, so in that way, in the name of beautification of the project but it has actually created a different ugly, unfinished parts.

And that way, it has also developed some kind of illegal spaces you know, that people just leftover these unfinished artworks or unfinished projects like that because of there was a funding mismanagement, there is the institutional, the way they looked at the these artists and the work. So, this whole thing has actually reveals us that the lack of understanding of the

local cultural needs and how the short-term, medium-term and the long-run adaptation process.

So, how one can think of the incrementality and one has not think about the incrementality you know. So, if this same project has been taught in a more of an incremental level, that would have been a better success.

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There is never just one cultural context for the providing of shelter following a disaster -there are always at least two. They are just distinct:

- the haves and have-nots,
- the powerful and the powerless,
- the relief organizations and the victims of disaster.



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In a cultural context, when we are providing a shelter, there is always two and they are very distinct. One is the haves and the have-nots, the powerful and the powerless, the relief organizations and the victims of the disaster. So, one is on upper hand and one is on the taking hand.

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Allen Barton's (1969) perceives disasters as part of the larger category of 'collective stress situations' which occur when many members of a social system fail to receive expected conditions of life from that system'.

During the relief operation, the traditional, local systems of organization are likely to be rejected in favour of the systems familiar to and exercised by the relief culture.

A victim culture is made aware of the failure of local, traditional, indigenous systems to anticipate the disaster when it happens.



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So, the moment when these NGOs when these agencies come into the picture, many at times what they do is they perceive the local knowledge, they perceive that this system, this particular social system has failed to receive the expected conditions of life from the system. So, that is where you know the larger collective stress situations took place that how the system has failed.

But then the many of the relief operations, when they come into the rescue or the rehabilitation projects, they try to reject and in favour of the systems familiar to an exercised by the relief culture. So, they either depend on the, they either rely more on what they have already executed and also the relief culture though they try to undermine the local systems, they try to understand, undermine the local traditions.

And a victim culture is always being made aware of the failure of the local, traditional and indigenous systems to either anticipate the disaster or be able to cope up when it happens. So, basically the moment you, the institution comes in working to serve you and that is where they see that this whole system has failed, they never see that how this has survived all these years, how they used to live, what are the mechanisms that they do have, so that complete ignorance of lack of understanding of the system that brings a big gap.

That is where such kind of situations you know when they were made aware that your system have failed that is where they leads to the loss of faith in the traditional leadership and hierarchies of the social and the religious order making the distressed community still more prone to the external influence. So, some of the options you know that they come with a ready-made options either from what they have already done before.

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Such situations and awareness may lead to loss of faith in traditional leadership and hierarchies of social or religious order, making the distressed community still more prone to external influence.

Illustration by Tania Sen Gupta; Source: Pasupuleti 2011

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And they just give you this is options why not you take one of these.

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Doreen Massey (1995) has argued that **'place' is a social construct**. In her view, **"we actively make places"** (1995:48) and **our ideas of place "are products of the society in which we live"** (1995:50).

**'Can the vulnerability of a place is a social construct ?**

Massey, D. (1995) "The conceptualization of place", in D. Massey and P. Jess (eds) *A Place in the World?: Places, Cultures and Globalization*. Oxford: Oxford University Press, pp. 45-85.

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Doreen Massey, a geographer she talked about place is a social construct and we actively make places and our ideas of place are the products of the society in which we live. On the similar context, can we not link the dialogue of can the vulnerability of a place is also a social construct because we are the responsible people, how we are making ourself vulnerable in that particular situation.

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**CYCLONE HUDHUD**  
Joint Rapid Needs Assessment Report  
Andhra Pradesh

12/19 October 2014

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They can only be concerned with the surface structures of society and such structures are further compromised when they are reduced to statistical terms.

**MEMORANDUM  
ON  
VERY SEVERE CYCLONIC STORM  
'HUDHUD'  
(11<sup>TH</sup> – 13<sup>TH</sup> OCTOBER 2014)**

**GOVERNMENT OF ANDHRA PRADESH  
REVENUE (DISASTER MANAGEMENT) DEPARTMENT  
NOVEMBER – 2014**

**CHAPTER-VI  
LOSS OF LIFE & PROPERTY**

Due to Cyclone and high speed gale winds, the following losses/damages were caused  
(Assessment - 45)

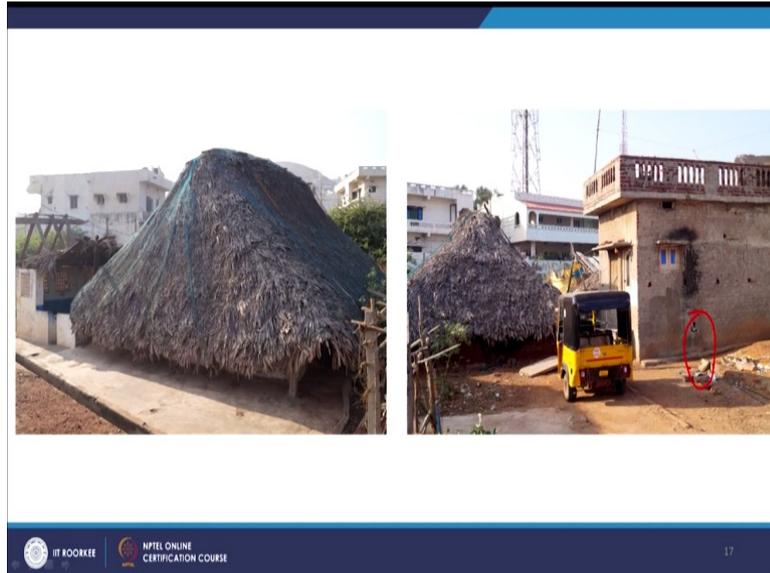
• Total No. of Districts affected	4
• Total No. of Mandals affected	138 (Severely - 52/Partially - 86)
• Population affected	10,27,14,88
• Total No. of villages affected	7287 (Severely 1148, Partially - 583) & hundreded 286)
• No. of People evacuated	222460
• Human Loss	61
• No. of Persons injured	102
• Total Cropped area affected	3.30 lakh ha.
• Estimated crop loss	Ru. 2287 crores
• Area with more than 50% crop damage	3.26 lakh ha.
• Replacement of fully damaged Fish Carts	824
• Street Vendors Stalls/booth	Replacement of fully damaged Rickshaws
	3615
	No. of Auto Rickshaws damaged
	190
<b>House Damages</b>	
• Total no. of houses damaged	200673
• Fully damaged (pucca+kutcha) houses	2430
• Severely damaged (pucca+kutcha) houses	11067
• Partially damaged (pucca + kutcha) houses	136384
• No. of Kuls damaged	47083
• No. of Cattle sheds	1176
• Estimated value of damaged houses	Ru. 5276.32 crores (Including commercial organizations and houses belonging to AP1)
<b>Animal Mortality</b>	
• No. of Cows/Goats Lost	1496
• Big animals	4468
• Poultry	46,34,706

Let's come to some of my own study which I am currently doing. This is on the Hudhud cyclone-affected areas. So, I visited some of the villages in Visakhapatnam which is in the coastal Andhra Pradesh and visited many of the government officials, the collectorates and the statistical department to see what other NGOs are working on and what kind of projects they are doing on and what how the damage statistics have been gathered you know.

So, many of these reports whether we talk about the damage statistics, how much loss of life is damaged, how much property has been damaged, they are narrowed down to the numericals, they are narrowed down to the surface structures of the society and they are often reduced to the statistical terms. So, you can say that estimated crop loss this much, area more than 50%, number of people evacuated, number of villages affected.

So, they are all narrowed down to numbers but that is where it is more to do with the economic aspect how much fund is required for it, how much investment is needed for that.

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If you look there is, these are some of the villages called Bheemunipatnam and you can see the traditional patterns of living, they have the thatched roof systems, which have a very low eaves because of the cyclone-affected areas and the coastal areas. So, they try to have this indigenous understanding of climatic, the local climatic conditions and it will also serving their way of life, how the fisherman's life is also celebrated and how functionally it works.

But if you look at the modern constructions, you can see even the drainage has left just alone like this, so which means the agencies are looked only at a house but not as a system of things, a settlement is not just only a group of houses, it is not just a thing, it is a system of things and it can incorporate the road layer network, the drainage systems, the electricity, the supply, water supply, so everything together that makes a habitat.

But here, when you go on an individual house for a house you build a house when NGO comes and build a house, you go away and that's it so what happens next, how it affects the neighbour, so that is where we are missing in that level. In many of the villages, where I have seen I visited that these damaged houses yes, they have been accounted that this has been partially damaged or fully damaged.

But then these are left isolated because they might have moved to other place or they might have been adjusted to in a new place but what happened to these. So, even after 10 years if you ever go to Latur earthquake affected areas or even in Tsunami, there are many villages we can see these damaged villages lying like that. So, there is no thought process of how one can even clean up this debris or how we can reuse these materials.

So, these are all many aspects one can think of, so what you can see in the whole village is bits and pieces of the rubble, which has been damaged by the cyclone or damaged houses in between you are building a new houses, so there is no understanding of the old part but only they are looking at what we are constructing, you know.

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For instance, this is a story of a house as a joint family house and many of these poor houses, the government has given only 5000 rupees as a kind of support to rebuild their house, the roof and the reality is 3 families still live in the same house. So, I was wondering how could they able to live in these houses. So, then they said, yeah we mostly sleep here being a coastal area we can sleep there because that 5000 was not sufficient for us to keep all the rules.

So, what we do is we negotiate with our neighbours and they sleep on the nights in their verandas. So, that is how, when you narrow down to numericals or you narrow down only to the 5000 rupees or a particular amount to be given, I think if you don't monitor it, how they are going to build up and after two years this is the case. So, I think this is where one has to look at.

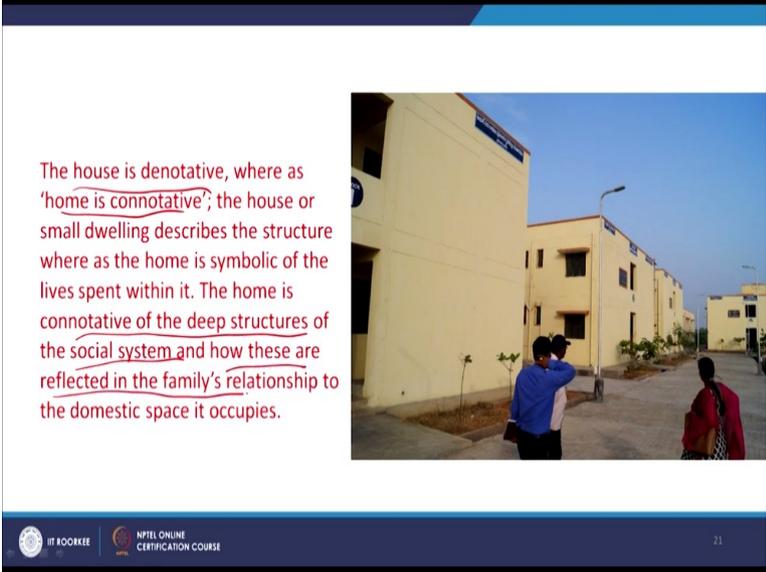
It is not how much you are providing but how much they have done and what needs to be done, this is where a reevaluation has to be done in these kind of cases. There is another case, like where different corporate agencies come like for example this was a project by Infosys Foundation where, as a part of their corporate social responsibilities, they try to come and deliver the housing solutions.

And when you look at this housing, they have a very good road network, they have very good houses, brick and concrete houses, this is slightly far away like 2, 3 kilometres; 3, 4 kilometers from the shore but then at least when I visited this place not many people have occupied this places, maybe now people might have taken but at that point of time not even a single person have occupied these houses.

I used to take some interviews with them and then I asked a fisherman why, they said our fishing needs are very different, we want to stay close to the seashore though we like a particular house but still our needs are little different. So, in gradual process, they also have worried about how the local politicians and their networks, how they can grab these houses on the name of fisherman's that is also one of the threat which even fishermen feel about.

So if, the fisherman has a different cultural need and similar to the Gibellina of understanding of the uniform and the standardized forms of housing and how it often gets rejected by the communities because of their cultural needs, livelihood needs.

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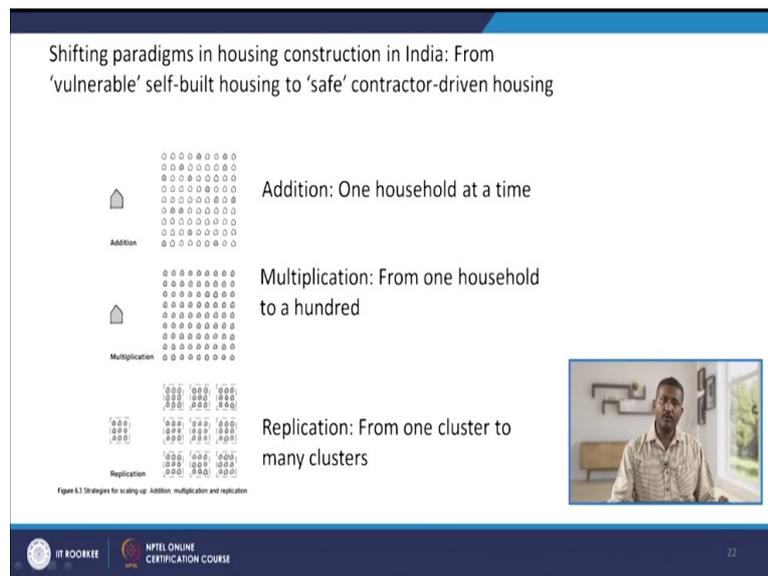
The house is denotative, where as 'home is connotative'; the house or small dwelling describes the structure where as the home is symbolic of the lives spent within it. The home is connotative of the deep structures of the social system and how these are reflected in the family's relationship to the domestic space it occupies.

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That is where, we say about the house is a denotative whereas, a home is a connotative. The house or a small dwelling describes the structure whereas, the home is symbolic of the life spent within it. The home is a connotative of the deep structures of the social system and how these are reflected in family's relationship to the domestic space it occupies. So here, what we are able to see is that it is not just the four walls which a house is all about.

It is about the family, it is about their social relationship, how the social space is created, so Henri Lefebvre talks from the conceived space, which the planners or the foundation have vision like this in a modernistic understanding and the perceived space, how they try to adjust with it and the lived space come with a longer run adjustments, longer than accommodation, how the habitual practices set this place with a different meanings, how they manifest these places with the cultural dimension.

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That is where the lived space comes into it and I think I will summarize on how in the first version of build back better by Michal Lyons and Theo Schilderman and Camillo Boana's work, how they even brought some of the compiled work of various scholars from different regions India, Pakistan, Indonesia, Bangladesh, Peru, Colombia, Turkey and all other places. So, the model which generally which has been followed in the reconstruction processes is one is an aspect of addition.

Like what they do is sometimes approach is through a singular NGOs like okay, there are 5, 6 houses this NGO will sponsor, another 5, 6 houses this NGO will sponsor, so that time the NGO only looks at that house, they only talked about one house, one at a time, one family because their contract is all about delivering 2 or 3 or 4 houses whereas in the multiplication model from one house to a 100.

So, here this is where the agency driven construction, so what they do is they develop a schematic or a model of a particular house and they replicate it whether it is a township, whether it is a cluster, so in that way, they try to develop as a uniform and the standardized

models of it and this is mostly as an agency-driven process. Whereas the replication, it is basically a cluster has been developed and that would be replicated in the whole settlement but here in this and this in the agency driven process what happens is you the agency will not consider a lot of differential aspects especially, in terms of space requirements, the communal response to it and the needs or the situational analysis, how it has changed before disaster and after disaster.

A woman loses her husband in the disaster, what happens to her, what kind of house she needs you know, so this kind of understanding is not really goes within this process because it's only takes for the model and how it is repeated for 100 houses whereas here, this involves a longer run engagement to understand each neighbourhood, a group of families.

It will take time but the problem with this is the media pressure will be there, the political pressure will be there, the institutional pressure will be there, so a lot of constraints which will add on to this aspect. In the second model of the contractor driven what they do is they try to develop a kit of parts approach.

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wall type 1

wall type 2

wall type 3

foundation type 1 foundation type 2 foundation type 3

Figure 6.4 A 'kit of parts' approach allowed flexibility within a standardized design

Discussing options

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For instance, they develop a template of walling material, the foundation and the roofing material or whatever. So, they try to give a template over and then people were asked to choose within that so in that way, the kit is provided and there is a little flexibility adopted in the standardized design process whereas in the second process of application, where Benny Kuriakose have worked on 2,000 designs for 2,000 houses.

So, that is where a deeper engagement is required with the community and they have to actually interact with the community and finally, they developed over 7 to 8 alternatives and again and one-to-one interaction with the architects has been allowed and that is why even the other further final modifications have been developed. This requires a very thorough bottom-up process of it.

I hope you understand the cultural issues and what are the ways of designing and how it has been overlooked and as a response what are the consequences of it and what are the various models of designing the housing. Thank you very much.