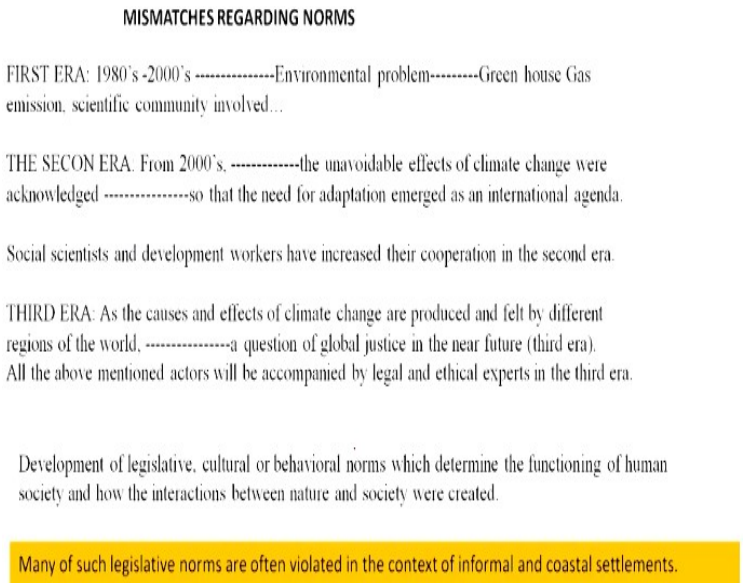

Where we have also the knowledge mismatches in the norms when we talk about the climate change, it was when it was discussed in the 80s which was the first era from 80s to 2002 it was mostly focused on the greenhouse gas emissions. Where the most of the scientific community are involved, it is an environmental problem.

Whereas in the second era from 2000s this has been seen by the International agenda, and also the social dimension come into the picture where the social scientists and the development workers have increased their cooperation in the second era.

In the third era it also looks from the you know this has been felt by other countries and other regions. So this is become a question of global justice in the near future that is where the legal dimension came in third era which is, and this is where we need to talk about develop of certain legislative cultural and behavioral norms which determine the functioning of human society and how the interactions between nature and society were created. So many of these legislative norms were often violated in the context of informal and coastal settlements. For example, the coastal regulation zone which was formed in 1991 and revised 19 times until the tsunami have struck. But then they were barely implemented.

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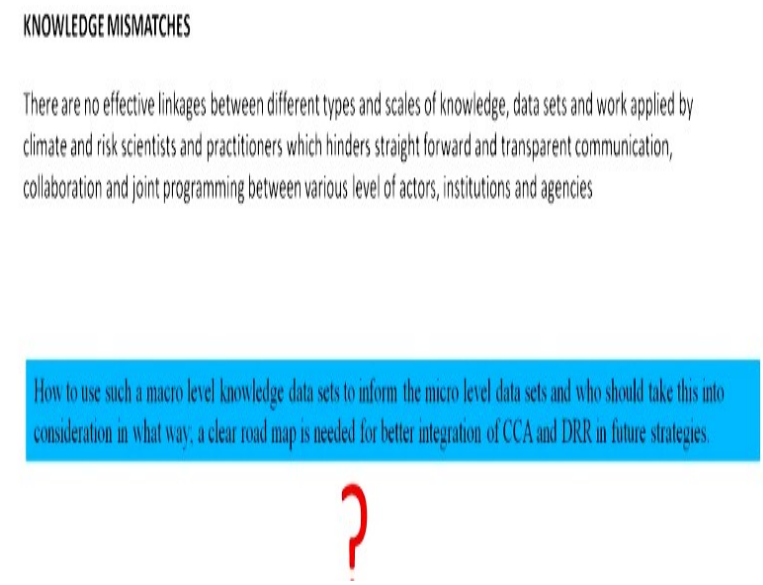

Also the knowledge mismatches when we talk about different scales, different data sets, different climate and risk scientist's practitioners which they do not bring the transparent communication and collaboration and joint programming between various levels of actor's, institutions, and agencies. So there is all this actually leads towards an important question of how to use this macro-level knowledge data sets to inform the micro-level data sets.

And who should take this into consideration, in what way a clear roadmap is needed for a better integration of CCA and DRR.

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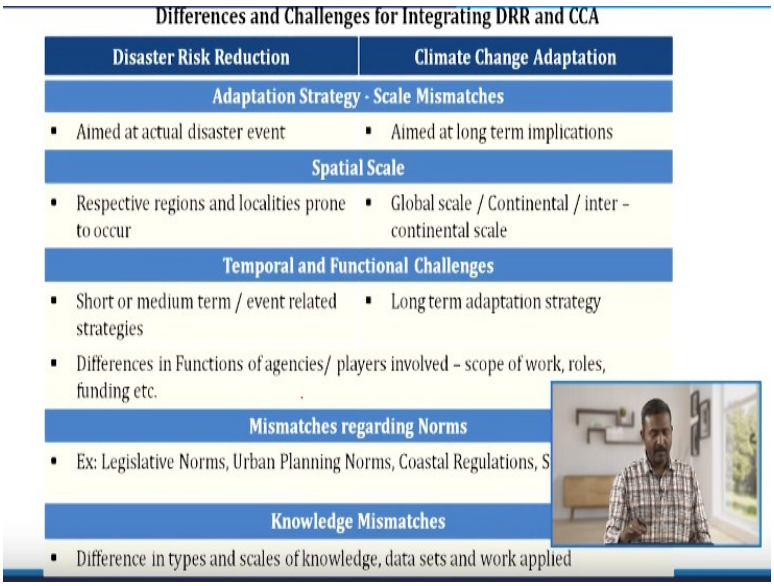

So to summarise whole aspect we see that differences and challenges we have disaster risk reduction and the climate change adaptation. This because it is aimed at the adaptation strategy which tells of scale mismatches because it is aimed at disaster event, it is a long term implications. A draught is not just only a matter of one month, it may come from years of years or together.

Whereas the spatial scales respective to regions and localities prone to occur, well it is a global scale sometimes is a continental and intercontinental impacts. Temporal and functional challenges; because this is more to do with the short and medium-term and mostly to the event related, and this has more of a prevention and also the long term adaptation strategies. Here the differences in function of agencies plays players involved and what is the scope of work roles and funding, because at the end of the day, funding is the most important part.

Mismatches regarding the norms: when we have the legislative norms, urban planning norms, coastal regulations how they enter do not relate to each other that is one aspect. Knowledge mismatches when we say the different types and scales of knowledge data sets and work applied.

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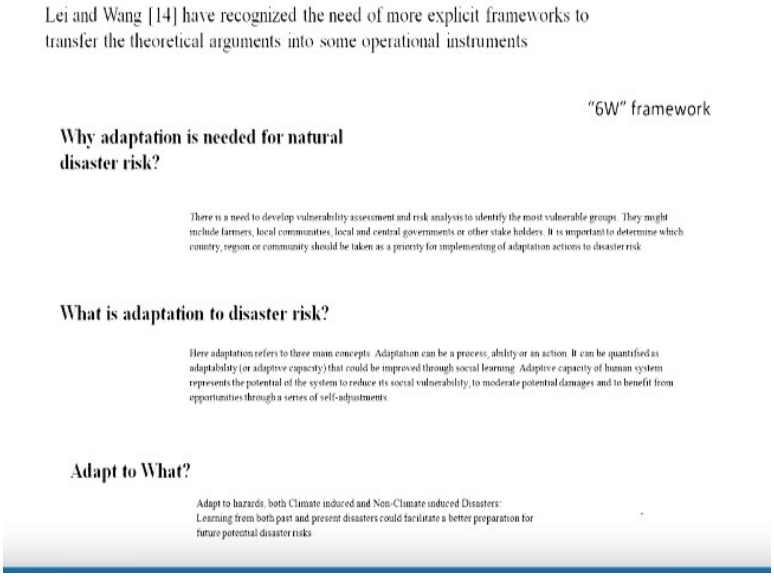

So for this Lei and Wang they actually come up with more explicit frameworks they call about "6w framework". So they talk about why adaptation is needed for natural disaster risk, what is adaptation to disaster risk, and adapt to what, who has to adapt?.

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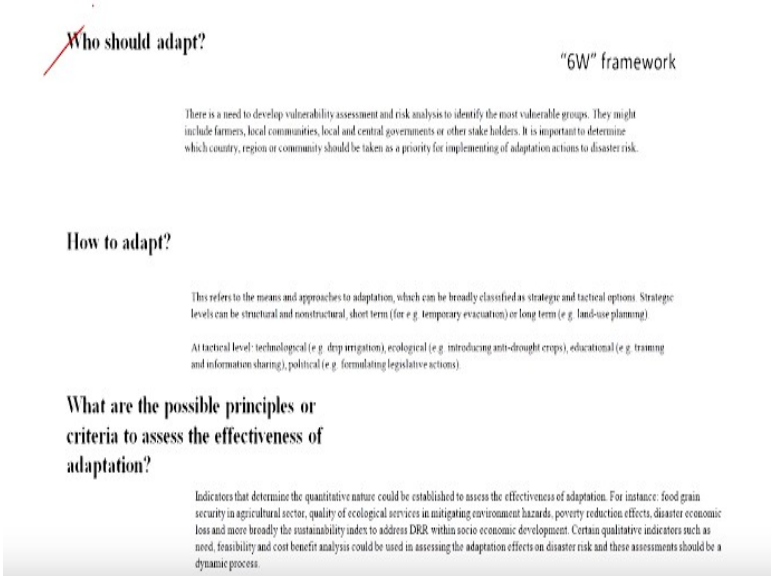

Who should adopt? How to adapt? What are the possible principles or criteria to assist effectiveness of adaptation?.

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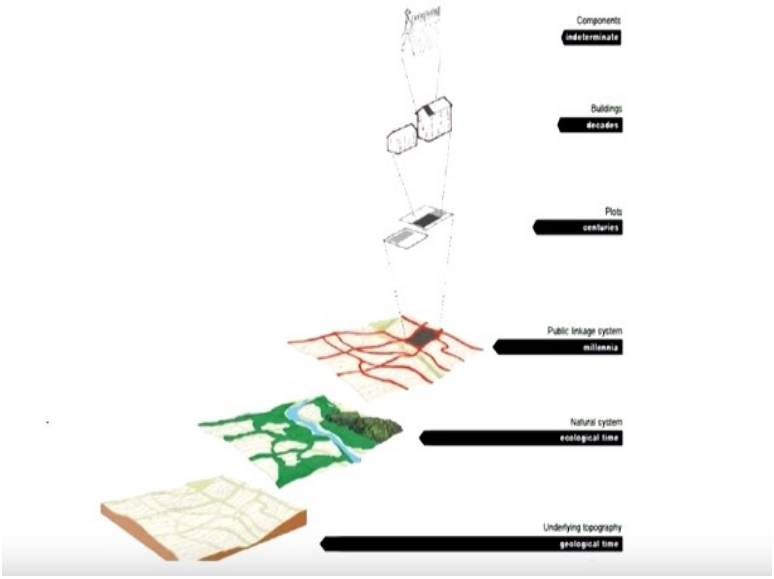

So there is a brief summary of this whole 6w framework has been listed out and now one of the important understanding from a built environment perspective what we can see is there is a scale mismatches. The spatial levels data so it is always if you look at the built environment we as a planners or architects we only look at the plots buildings and elements. We completely ignore the underlying topography and the natural systems ecosystems, and the public linkage systems so they all are interrelated to each other so one has to see the different sets of data how they can

come together, and how can macro-level information can be informed the micro-level information.

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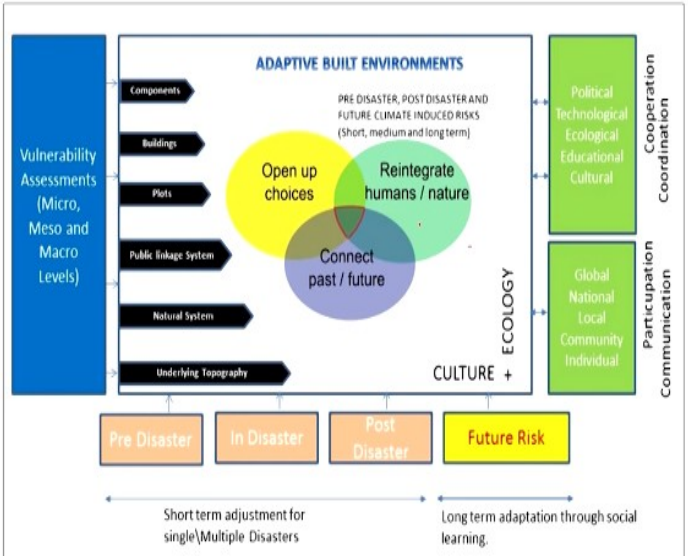

So it is where in my current ongoing study I developed this framework where we have the spatial dimension and which has also the vulnerability in impacting on these, and there is also the adaptation process both pre-disaster in disaster post-disaster and the future risk which has a short-term and medium-term of single and multiple disasters. And this has a long-term adaptation through social learning. And here we can see that how the nature and culture can come together.

And this also talks about how the adaptive built environments open up choices, connect past and future, and how it can reintegrate the humans in nature for which cooperation coordination between various agencies political, technological, ecological, educational and as well as the participation and communication across various segments the global actors in the National. So all these things has to come this is a very holistic framework which we worked on.

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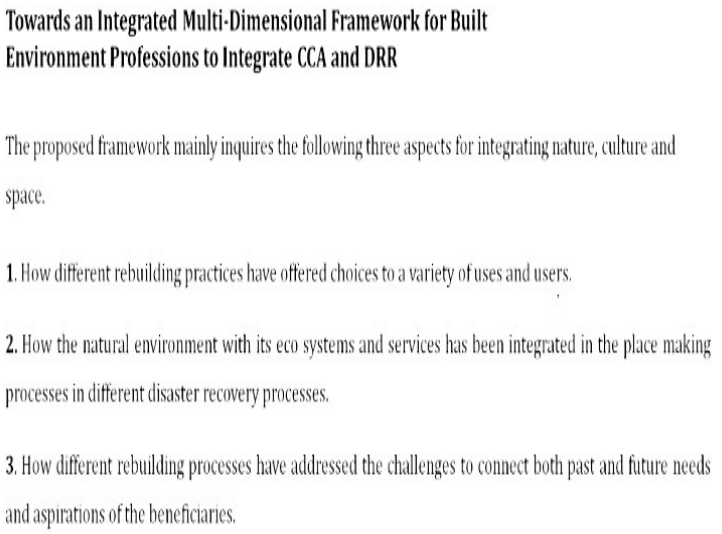

And when we talk about an integrated multi-dimensional framework, so it investigates on three aspects; one is how different building practices have offered choices to variety of users and users, how the natural environment with its ecosystems and services has been integrated in the place making process in different disaster recovery process. At the same time how different rebuilding processes have addressed the challenges to connect both past and future needs and aspirations of the beneficiaries.

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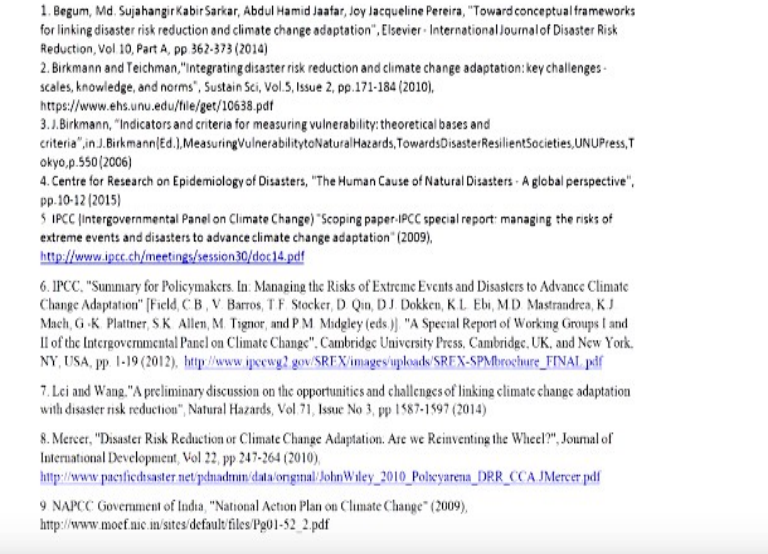
1. Begum, Md. Sujahangir Kabir Sarkar, Abdul Hamid Jaafar, Joy Jacqueline Pereira, "Toward conceptual frameworks for linking disaster risk reduction and climate change adaptation", Elsevier - International Journal of Disaster Risk Reduction, Vol 10, Part A, pp 362-373 (2014)
2. Birkmann and Teichman,"Integrating disaster risk reduction and climate change adaptation: key challenges - scales, knowledge, and norms", Sustain Sci, Vol.5, Issue 2, pp.171-184 (2010), https://www.ehs.unu.edu/file/get/10638.pdf
3. J.Birkmann, "Indicators and criteria for measuring vulnerability: theoretical bases and criteria",in J.Birkmann(Ed.),MeasuringVulnerabilitytoNaturalHazards,TowardsDisasterResilientSocieties,UNUPress,Tokyo,p.550 (2006)
4. Centre for Research on Epidemiology of Disasters, "The Human Cause of Natural Disasters - A global perspective", pp.10-12 (2015)
5 IPCC (Intergovernmental Panel on Climate Change) "Scoping paper-IPCC special report: managing the risks of extreme events and disasters to advance climate change adaptation" (2009), http://www.ipcc.ch/meetings/session30/doc14.pdf
6. IPCC, "Summary for Policymakers. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation" [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. "A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change". Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 1-19 (2012), http://www.ipccwg2.gov/SREX/images/uploads/SREX-SPMbrochure_FINAL.pdf
7. Lei and Wang,"A preliminary discussion on the opportunities and challenges of linking climate change adaptation with disaster risk reduction", Natural Hazards, Vol 71, Issue No 3, pp 1587-1597 (2014)
8. Mercer, "Disaster Risk Reduction or Climate Change Adaptation. Are we Reinventing the Wheel?", Journal of International Development, Vol 22, pp 247-264 (2010), http://www.pacificdisaster.net/pdnadmin/data/original/JohnWiley_2010_PolicyarenaDRR_CCA.JMercer.pdf
9. NAPCC Government of India, "National Action Plan on Climate Change" (2009), http://www.moef.nic.in/sites/default/files/Pg01-52_2.pdf

So there are few references listed out so one can actually go through that. Thank you.