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Drought Vulnerability and Risk Assessment
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We are talking about what are the different kinds of drought which people are trying to kind it out and what is the type of inconvenience that happens. Now when you want to -- that is what we are going to talk about in the drought vulnerability and risk assessment.

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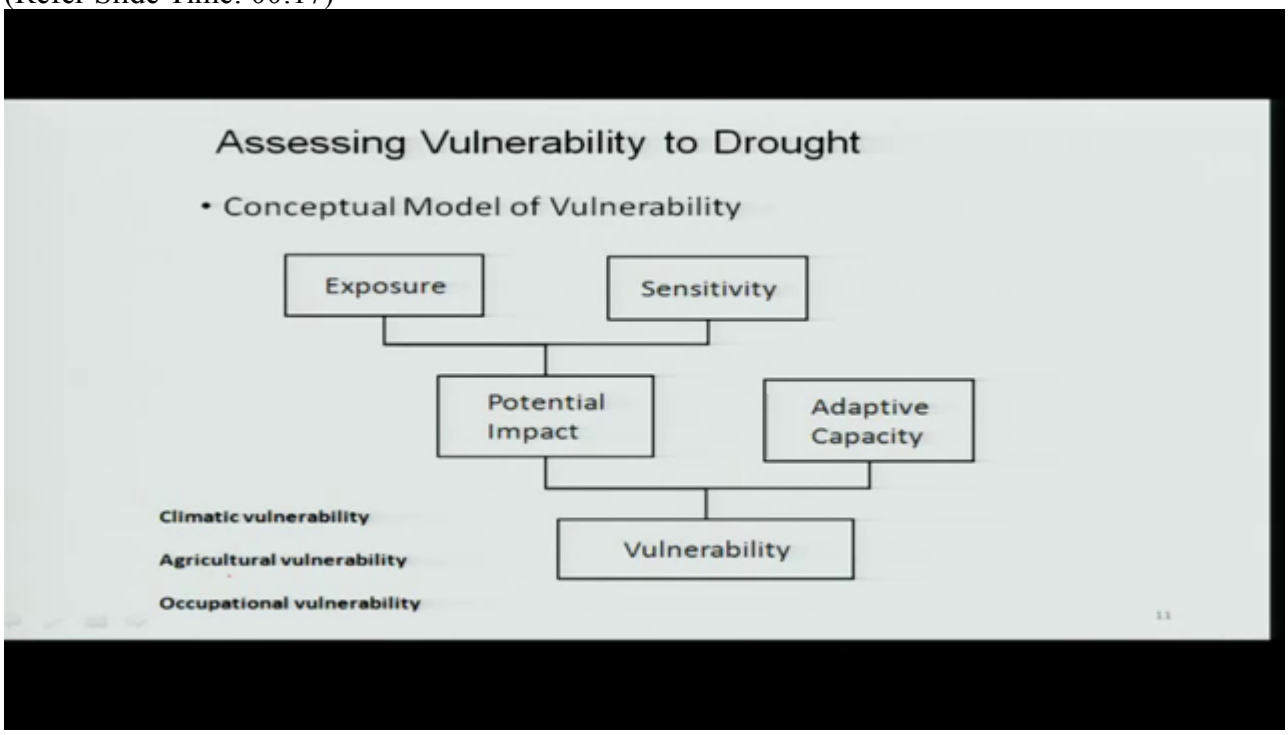

When you talk about assessing the vulnerability to drought, there are conceptual models which will tell you about how do we do that. And it could be a climate-based vulnerability or it could be a agriculture-based. What is the climate based vulnerability is the rainfall temperature and things like that. Whereas the agriculture vulnerability it is a vulnerability due to the non availability of water of growth plant -- plant growth is stunted, so that is what we call it as a agriculture vulnerability. Occupational vulnerability is another one which is based on the livelihood.

Now how we -- this type of vulnerabilities can we do that is one is exposure, exposure in the sense you are doing an activity, that activity is likely to be affected because of the thing. Now here in this case what you are doing is if you are based on the rainfall to much and also your irrigation is required then your crop is likely to be done. Sensitivity is if there is going to be a slight change in the temperature or the rainfall conditions the crop is very sensitive, so that is what is known as that.

Adaptive capacity is with all these deviations in the weather parameters then how people are able to cope up with the classes or cope up in the reduced outputs are reduced crop yield. So that everything put together that is what the we call it as a vulnerability. Vulnerability is nothing but how vulnerable are sensitive those people who are in those regions due to a change in the -- due to the occurrence of a drought or not drought that means availability or non availability of water that leads to the livelihood issues.

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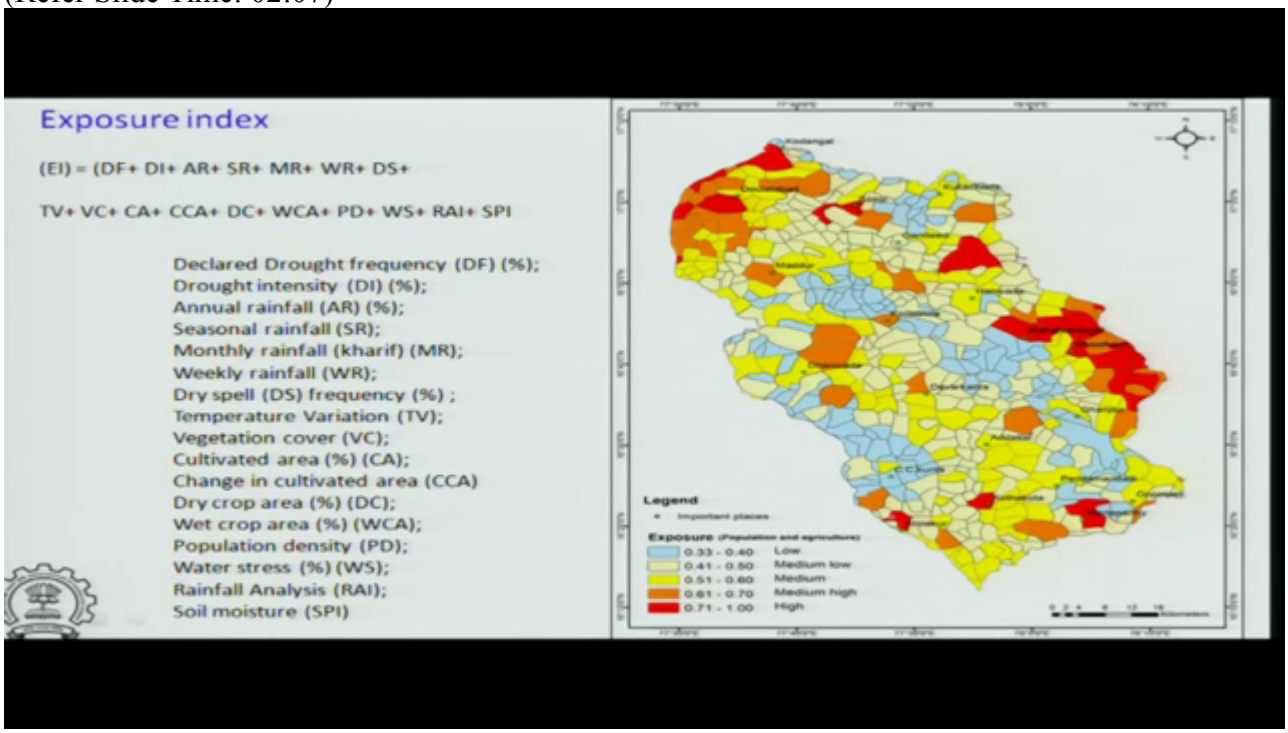

Okay. Now that is what is how can we do? What is a exposure? Exposure is nothing but is can be it about if you are there in a particular region where it is a drought prone, that is drought happens at a different frequently and because they depend on the rainfall then it is the rainfall which matters that is for a water purposes this is depending upon whether it is annual rainfall or seasonal, monthly of that kind of category, then the temperature, the fluctuation in temperature either towards the higher side or towards the reduced temperatures that will also is likely to affect the crop growth.

So, that is where the temperature variations and vegetation cover, this is the vegetation growth and the type -- how the vegetation growth is affected by the deviation in temperature condition, temperature and rainfall condition or water availability conditions whether what type of cultivated area. If it is a cultivated area we have the we have not -- we are looking for crop production for a planning purposes, so we expect some mount of yield from those areas. If that is not coming up then we have that – when we have the national level food security which is in going to be in trouble.

Now the population density is another factor. In addition to the when you have a water sources it need to be shared amidst the population as well as towards the agriculture too. So, now these are all the different parameters which are used in identifying the exposure to drought. When you look at this particular place what is added is everything is given here ranking and weightages depending upon the past history and then it is added. How the exposure of population and the agriculture due to the drought condition they have been grouped into very high to low depending upon the cumulative score based on the exposure ratings.

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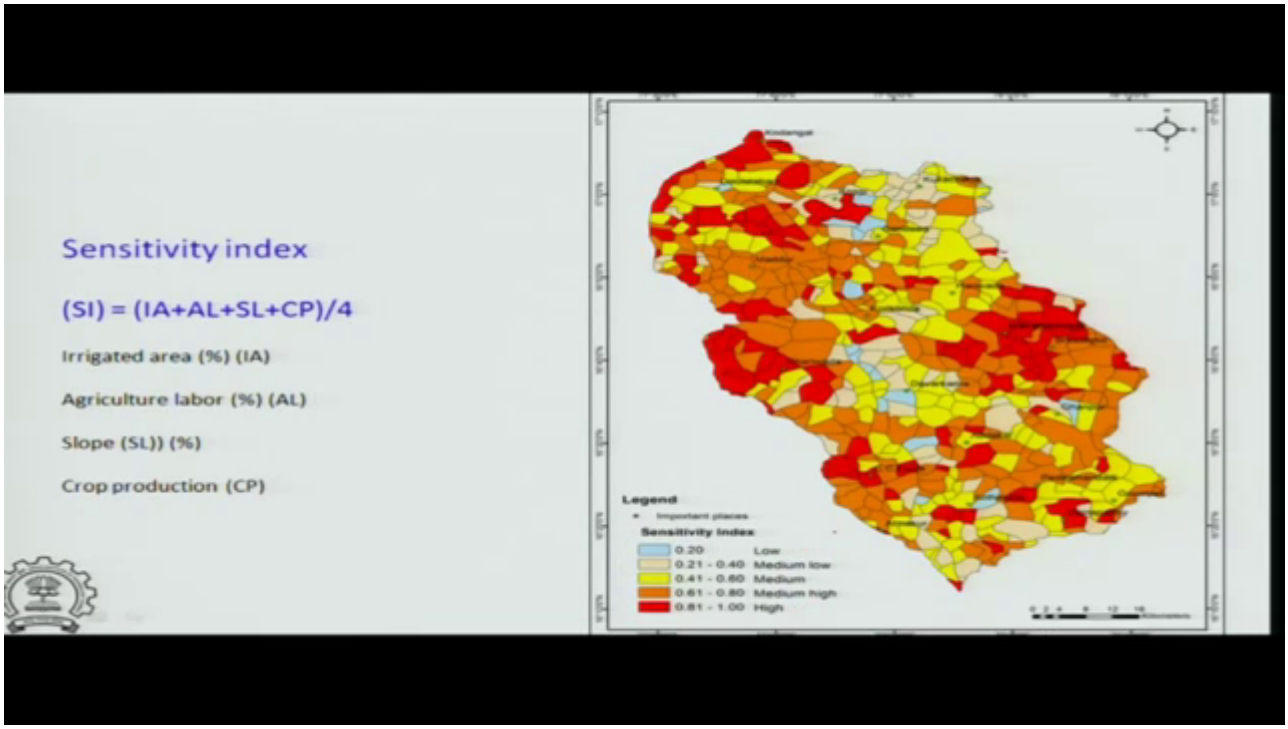

Now the second one is sensitivity. Sensitive is nothing but sensitivity in low or drop in a different – one parameter how it is going to affect the other activity that is what the thing. Here when it looks like that if the irrigation is total, if the one area if it gets more 100 percentage irrigation oriented that is a canal oriented irrigation that means it is sensitivity to rainfall and storage and the release of water from the reservoir.

Whereas agriculture labor if that is going to be only agriculture to labor that means if you do not do agriculture then the laborers and its family they are likely to suffer a lot. When this crop production, if they enter one thing is an agricultural labor, another thing is the owner of the plot if he depends only on the crop production and without any other income his lifestyle will be in trouble. So this is the four parameters which will tell you about how sensitive this areas to these variations. So this is also based on the ranking and weighting aspect so they have been given and it has been grouped according to that. If the when you look at it irrigated areas. So if the irrigation is not done at the right time then the crop production will be.

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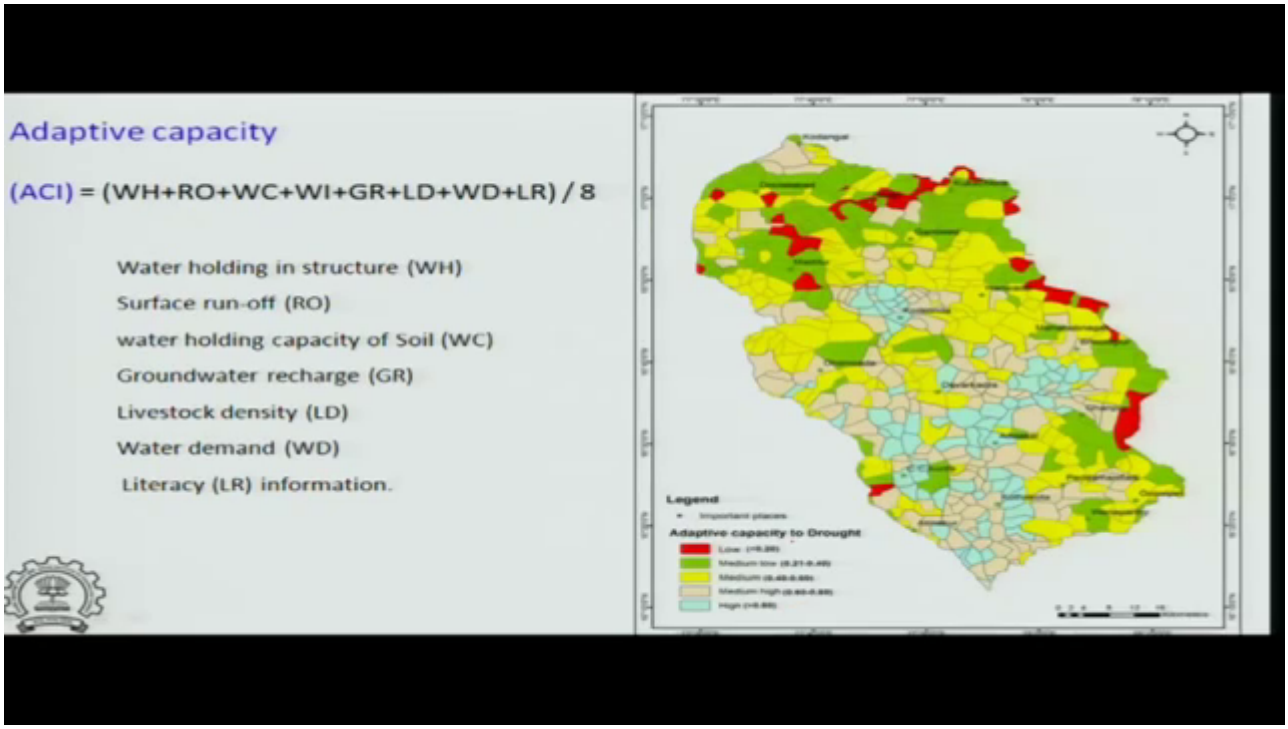

Now, then other thing is adaptive capacity. Suppose if there is going to be a rainfall deficiency, if there is going to be a rainfall event how people will be able to manage the issue. That is what the adaptive capacity. This here the adaptive capacity is water holding structure. If they have too many water holding structures at least supplying water to this, at least one water holding structure will be able to get a water, so rest of them they are able to do that. Then if it is going to be groundwater recharge is good then they have the better chances of adopting it with groundwater and with a minimum utility purposes.

Whereas, if we are going to have livestock density, water demand and literacy information is nothing but it is when you have a literate information you can identify the possible sources of water resources in the neighboring hood areas and then how do we then you know how to go approach and collect it. That is where the literary information comes out. And how to, when to read the cloud – read the satellite data, read the weather forecasting information and then try to say how to hold on to the non-availability of water situation for some time or how many days and then get away with that. So this is what the adaptive capacity of this region which is means in that.

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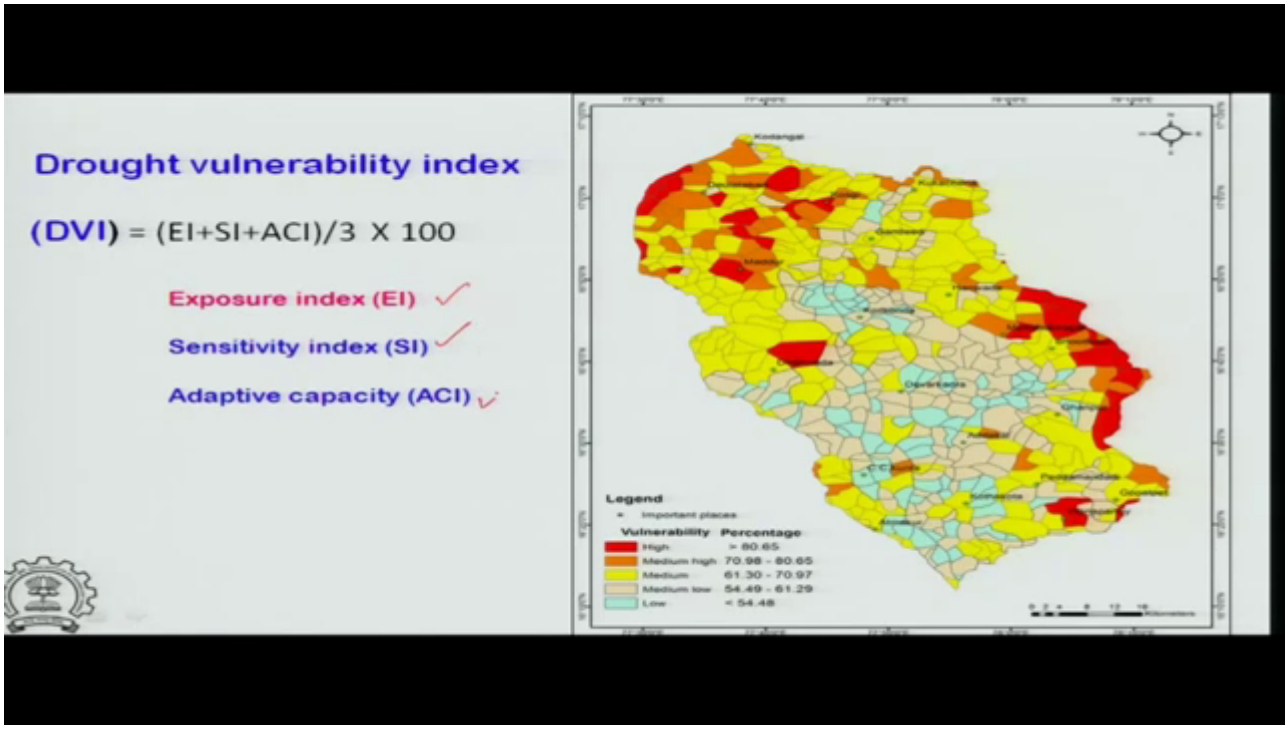

But molding exposure, sensitive and all those things they will put together, we have the drought vulnerability index which is developed here and which will tell you about what is the percentage of drought vulnerability. That means this area's 80 percentage of the area is going to be affected by the vulnerability. Whereas in this area the vulnerability is less that means less than -- the vulnerability is only 54 percentage rest of them are able to have the adaptive capacity. So in this, this is how the drought vulnerability index is often generated based on the meteorological, then hydrological, agriculture and the socio economic factors are included and then it is done. So it will be able to -- when you want to do a mitigation work you can improve the storage capacity water distribution capacity are people's ability to adapt. So you can frame your management practices or different scales rather than depending only on a particular aspects.

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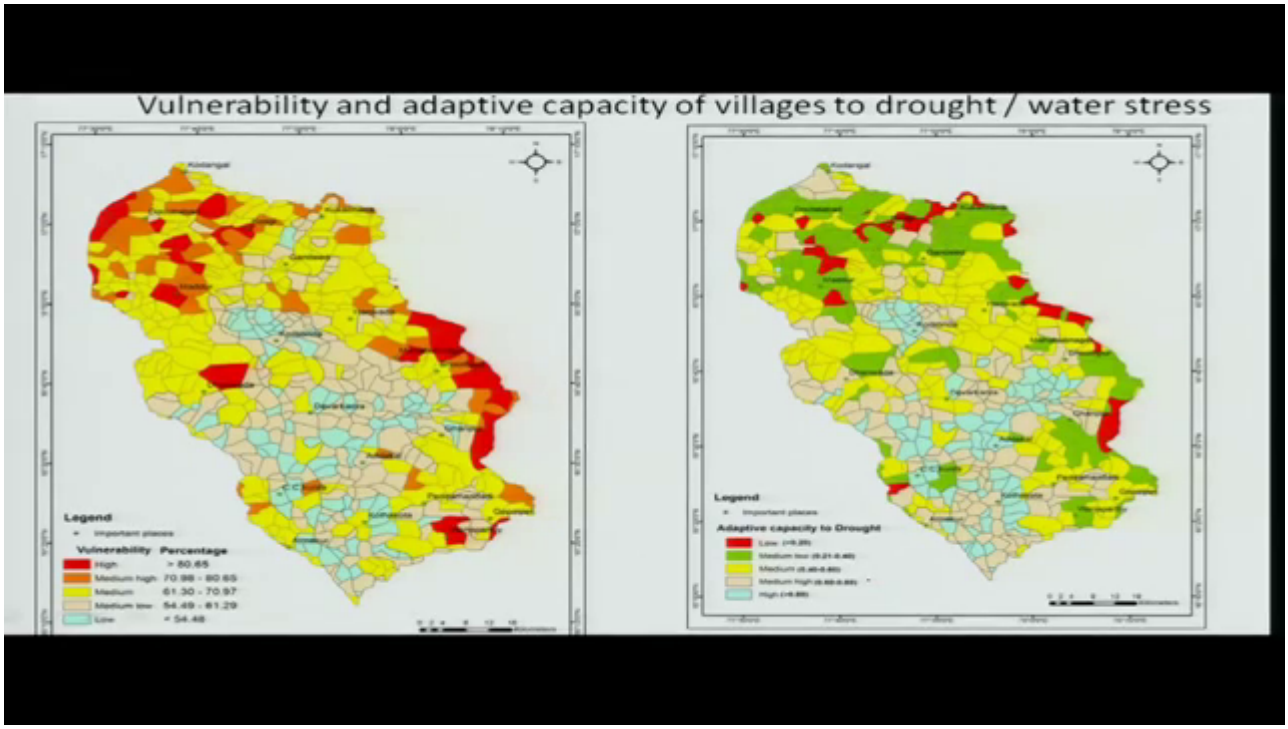

Now this is villages, how much percentage of the villages. How that – here in this area 80.65 percentage of the village population is likely to be affected by that whereas here it is less. Then adopted capacity is in this areas where the people have got the highest adaptive capacity whereas in this serious where they have got a low adaptive capacity. So that is nothing but it is their own personal resources and their personal ability to cope up with the drought which is a temporary period but it is not going to be permanent features for those people.

Now, what we have seen in this lecture is normally drought vulnerability activities we talked about how vulnerable to a particular aspect. Whereas in this case what we are able to say is we are able to integrate the different aspects of a drought and then we are trying to bring out which is the area which needs attention immediately and which are the areas which needs attention for a -- focused attention is needed rather than so that the crisis management can be avoided or it can be split it into expected and then develop your own resistance or adaptive capacity of the region. And then -- so that the drought even comes and then passes off. Thank you.