AgMOOCs

Case study in India on the adoption of weather based crop production – Crop management

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Dear students and dear farmers. In the last classes we have seen certain subjects related to the weather forecast in agriculture and agro-advisories. In those lessons we discussed on crop production risk, crop-weather interactions, types of weather forecast, how to prepare agro advisories, how to communicate to farmers, those are all at the upper level. Now we like to see what is happening at the farmer's level when agro advisory is being even. In this context study was undertaken by the Agro Climatic Research Center at the Tamil Nadu Agricultural University. And let us see how this case study was done and we can see what was the result.

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So today's class we deal with case study in India and the adoption of weather-based crop production and crop management. This is very very important area to be noted, then only confidence with the farmers will be build up.

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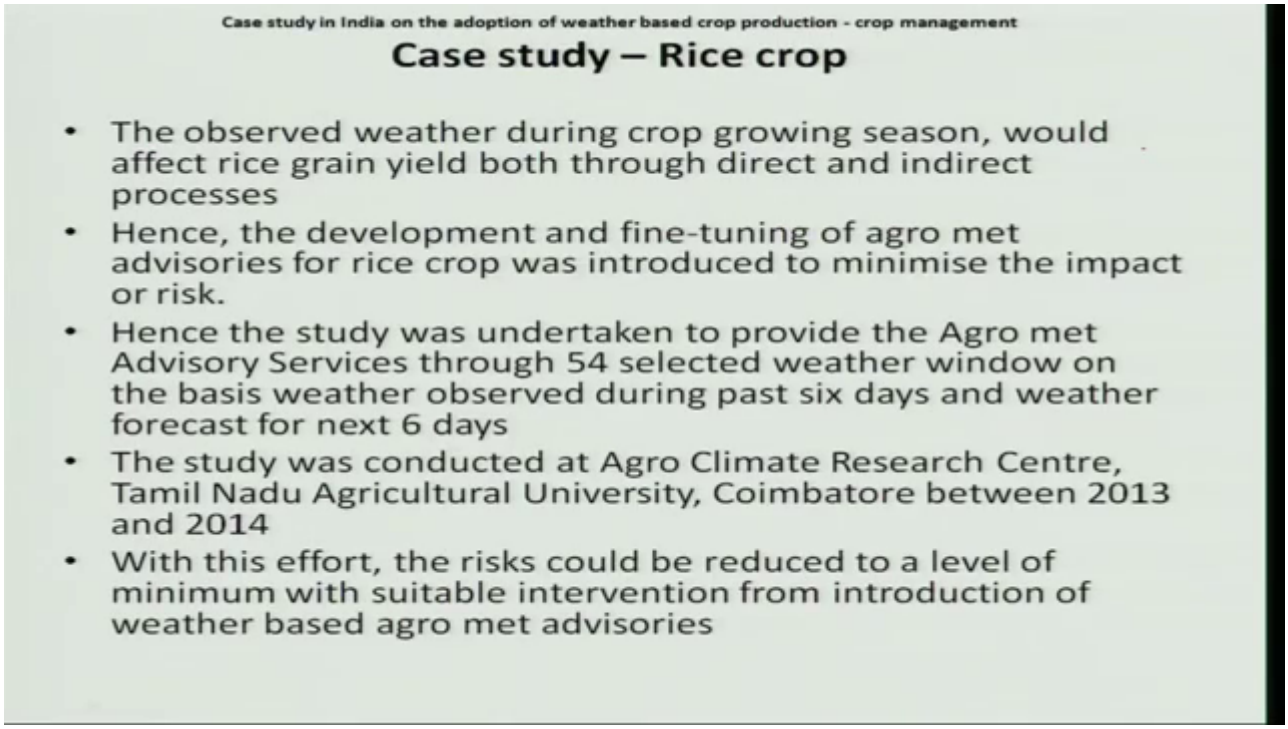

Now let us move to the case study. We have taken a rice crop. Now before going to the case study in reality I like to say something on this case study. See, if you cultivate rice, there is a season. So the observed weather during crop growing season would affect rice grain yield whether positive or indirect that we have seen already. So it is necessary to fine-tune of our agro advisory so as to reduce the risk. This is an important area where we have to do our exercise. As I indicated that Tamil Nadu Agricultural University, for Tamil Nadu weather situation we have developed to a 54 selected weather windows. So this was tested and I like to focus only one or two weather situation that to that prevailed during the rice season. As indicated earlier the study was undertaken by Agro Climatic Research in Coimbatore. So by taking this case study it is possible to reduce crop protection risk under open field condition. Let us move to the next slide.

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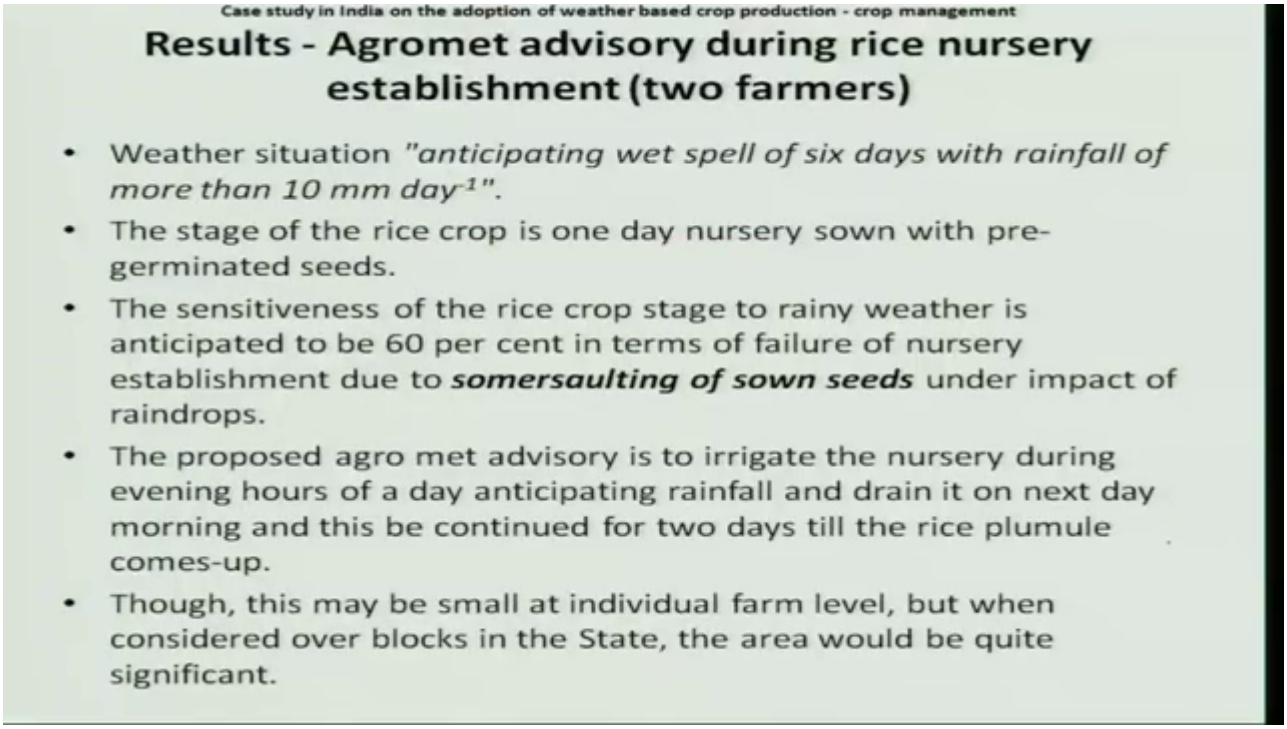

So here we have taken rice nursery. Farmer A is there. Farmer B is there. What is the weather situation which was studies that is anticipating wet spell of six days with the rainfall of more than 10 millimetre per day. So 10 millimetre per day means you will be getting 60 millimetre forecast. The crop weather stage is just now the seeds were sown in the nursery that was one day old. So one day is a situation, rice crop situation has a 60 mm rainfall. How the crop weather interaction exist there, if that rainfall is received in reality, the germination will get affected or the nursery will be get affected. So as per the study the sensitiveness of the rice crop stage that is the sown stage to rainy weather, anticipated weather is 60% in terms of failure of the nursery. Why this was happening? Because of the somersaulting of the sown seeds, seeds are on the surface of the soil. When amount of rainfall of 60 millimetre received means it make the seeds to somersault that may bring 60% loss in nursery production.

So what is the agro advisory proposed to be given for this situation. This is to irrigate the nursery during the evening hours anticipating the rainfall and morning, next day morning drain it, so that a cushion is given through water over the sown seeds, the raindrop does not affect the rice sown seeds, so you can keep the seeds intact without any damage. So this is being happened when irrigation water is given in the evening and drain it in the next day of morning. This you can do 2-3 days. This is very very important. Don't repeat it on all six days because the plumule of the rice will come up that will take its protection, the radical also goes into the soil that will gives the assistant to the rice nursery.

So you may say that, sir, this may happen to a single farmer or two or three farmers who have sown, but don’t think like that. You take at the village level. You take at the block level. You take at the district level. You take at the state level, the area is large. When this agro advisory is practiced by the farmers because only rice season only all farmers going for nursery, it may be 10,000 hectors. So if you do your agro advisory the 60% loss will be eliminated by doing this agro or by practicing these agro advisories.

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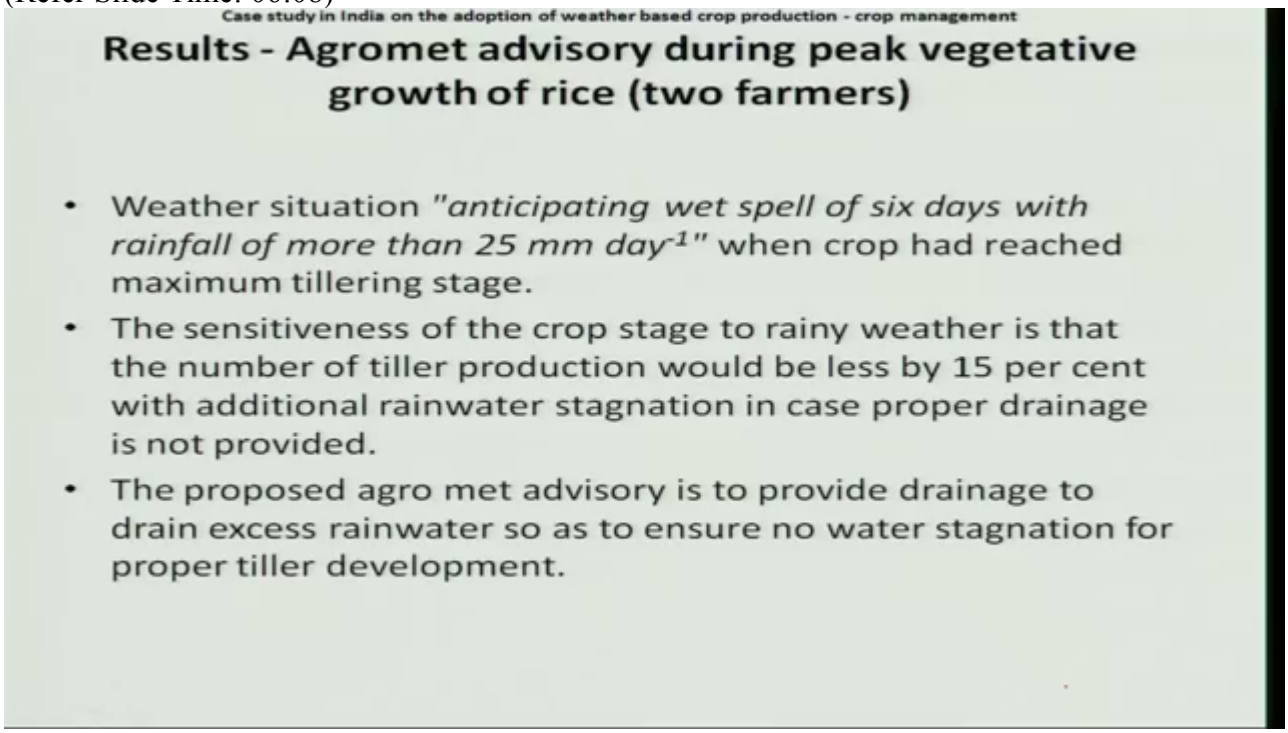

Next example also like I like to give it, so that you can have your strong confidence on the agro advisory which is being prepared based on the weather forecast. Here the anticipated weather situation, wet spell of six days with rainfall of more than 25 millimetre per day, around 150 millimetre you can anticipate in the six days. What is the stage of the rice here? The rice is in the tillering stage, tillering means, the rice wants to put against more biomass. When water is more the tiller production is getting affected. So you are going to get 150 millimetre of rainfall in the coming next six days and the rice does not do more water for this tillering stage. So they have estimated that 15% of the tillers will be affected. So it must be protected by doing the agro advisories. What is the agro advisories, provide drainage, it simple, very very simple, you make the water to get out, even though you get rainfall the water will be draining out automatically if you provide a drainage. It is very very cost-effective and also inexpensive. So this was it done by as a case study. This was done in farmer A condition and farmer B condition. After that we came to conclude that whoever did or do agro advisories they are able to reduce the crop production risk.

So this is the lesson we have learned lot. So what I like to say is, prepare the weather forecast, prepare the agro advisories and fine-tune to the ground reality situation so that crop production risk can be reduced up to 60%. That was the lesson learned from this case study done for rice. Thank you very much. In the next class we'll see some more example or some other things. Thank you.