Impact of Climate on Agriculture
Dr. R. Nagarajan

Now impact of climate on the agriculture. Now what we are in we are all told is about the forecast about there is likely to be a climate change. This climate change is likely to affect all the living and non-living creatures and when you talk about agriculture how it will be affected culture agriculture and its yield which is of importance is going to be seen in this particular section. Now when you look at it what is the potential change which can affect us one thing is the average temperature is likely to be on a higher side that indicates there will be a lot of evaporation in the evapotranspiration is possible this may require to avoid this kind of losses then there is a additional water requirement is needed in this area then the rainfall may not be as uniform as we want is the rainfall that is a wet spell and dry spell activities may not be as what do you see that there is likely to be a spiked in high rainfall days when compared to the present-day conditions that means you get 100 millimeters or 200 millimeters in one day and the rest of the days rest of the10 or 15 days there may not be enough rainfall.

So that what happens is one day the two hundred millimeter then the crop should be able to withstand this in severity. Now the third one is about the extreme, climate extreme that means heat waves that means heat waves we have not experienced it as on today that could be about 4 degrees of temperature variations are possible because of this heat waves as well as cold waves there is a probability for a pest and diseases are likely to surface it out depending upon the climate factors.

Now another thing is about the atmospheric carbon dioxide is likely to get increased because of the burnings from the fallow land areas before cultivation which they do that as well as the ground level water ozone is like liquid there; then nutritional quality of some foods would affect the agriculture in the market related actually. Now this is what is in general is said that it is there is likely to be a variation in these parameters. These parameters or have a direct impact on the agriculture growth as well as the productivity now what can happen to these plants are a crop are there could be a crop phenology may be disturbed and there could be droughts what is drought? Drought is nothing but it is a lesser rainfall and so that there is a fluctuation in the waters availability to the plants as well as for the drinking water purposes for a shorter period. So this could lead to crop failures or stunted crop plants. So where it will lead in this thing is one is the productivity of agriculture products that is either it may be in quantity that means not share of area is able to produce and the quantity what we are expecting from a region is reduced so that it may lead to some importing activity and the quality of the crops may be down so that is the one thing regarding to productivity then agriculture practices normally here we are concerned right now is about the irrigation as well as there will be some insecticides and herbicides need to be added.

So that some of them pesticides may be a resistant by them; so we may have to find alternative things before that. So that is what the agriculture practices are there then in the environmental aspect what could be the probabilities, the frequency as well as intensity of soil drainages erosion and as well as erosion is likely to be there heavily because of the high

intensity rainfall that is the wherein the fertility of that particular soil is being removed from that area then again and again you may have to use supplements like fertilizers.

Okay, whereas another is on the rural areas; it could be a cultivated lands loss or gain of cultivated lands and also speculations for a selling for growth purposes where they may be of importance and in their own livelihood. Now what is the thing which we may have to do is we have to adopt flood resistant that means excess periods and there could be salt resistance where it is; salt resistance is possible because of the soil salinity areas. These are all the things which may are which are likely to affect the agriculture in general. So how it could be done is like the same greater Prabha region try to make it up. So there could be some water supply say what we try to do was and in this entire small basin has been taken up what is the water availability which we have said it is estimated by the SWAT model and what is the water demand which we have done it is by the is for the crop, crop area, crop type and as well as human requirements everything is added.

So what is the supply, what is the demand so how much will be the deficit that is how this particular information is derived and then show it to you is by this way there is going to be a major problems in some of the areas whereas some of the areas they will be having some problem which are very less in this particular portion. This is for the 2030 and how then your question comes how do you know the demand is going to be less it is based on the 2-3 decadal growth pattern has been taken out in this for this purpose. So here what is the deficit access is going to be is predicted in this way; there is going to be a point 0.1 to 1percentage of TMC deduction is possible in this grey areas. So these are all the areas where the command area these are all the cultivated irrigation related the canal based cultivation lands are available. So if the canal based irrigation is not available then there is a tendency to go for a ground water; if you go for a ground water then there will be a groundwater level will come down as well as the quality issues changes. That is what is expected, that is what is given as a for a planning purposes; this map is, this information is generated using a GIS method.

The actual ground level information that needs to be validated and checked before it is being implemented as a policy management activities. Okay, now in this section what we have tried to do was and what is the in general agriculture depends on water in a bigger way and if it is in a bigger way now what is the systems functionality whether it is functioning normal whether it is functioning below expectation and whether do we have enough storages for our growth and if it is not there we have to do it and how to do it in the same demand and supply under a different or changed environmental climatic conditions are being done on a large scale basis but if it is a large scale basin. See reservoirs are the source for an agriculture in village or in a plot but whereas unless there is a; water in the reservoir. So the individual farmers are done. So if it is done on the farm level it is done on a large scale level. So that large-scale availability, non-availability will decide about the crop yield and crop production from that zone which is dependent for the food security purposes can be managed with a concrete information from the different groups. Thank you.