

CHAPTER: 5

CONCLUSION AND FINDINGS

5.1 Conclusion

Climate change is a universally recognized issue and concern of 21st century. Globally nations strive coherently to combat the imperative fatal repercussions of climate change. It has put the existence of man on stake. The worldwide forums, climate bodies and other organizations are putting their heart and soul out to devise strategies which could cover and cope up serious impacts of climate change. The tragedy with the climate change is that it affects the developing countries (like, India) most whose contribution towards it goes least. Similarly in every nation poor people are more affected by climate change rather than rich people because rich people possess various means to stand and tackle all the negative impressions of climate change to a huge extent.

Climate change depicts itself in different facets like surge in temperatures, decrease in glacier content, increase in sea levels, uneven fluctuations in precipitation levels, increase in crop diseases, decrease in production and productivity of crops, shift in agricultural practices, habitat extinction etc. The impacts of climate change vary between the sectors with agriculture being more prone to its impacts than the other sectors. This leads to the deficit in agricultural production and productivity and puts the food security at risk. The pattern of monsoons is now a day's unpredictable which force the farmers to make a shift in their agricultural practices from one crop to another. The frequency of extreme weather events like pro- longed dry spells and floods has increased. As per the official estimates, major loss is predicted in Rabi crops as compared to the kharif crops. The farmers with small holdings are more vulnerable and prone to climate change impacts which put their

lives and livelihoods on stake. This forces the farmers to migrate from resource deficient to resource efficient places which further leads to resource crisis.

The impacts of Climate change are evident in Kashmir valley more as compared to rest of the country. According to UNEP report, most parts of the state are highly prone to climate changes. As per INCCA, the number of rainy days in Himalayan region will increase by 2030s. The climate report of Jammu and Kashmir highlighted that the temperature (average) in the state got increased, with Kashmir valley delineated the increase equal to 1.45°C while Jammu division revealed this increase equal to 2.34°C since last two decades. The document further revealed that the maximum temperature in Kashmir valley gets enhanced by 0.05°C per year while Jammu division is experiencing this rate equal to 0.08°C per year since last two decades. As per the latest report put forth by IMD, heavy rains will occur from June- September 2018 with July predicted to be the wettest month of this year.

5.2 Findings of the Study

The aim of the present study was to assess the connection between the production and productivity of rice and apple crops with respect to climate variables average temperature and rainfall. For this multi-variate regression model was incorporated in the study. The results of the study revealed that the two climatic variables had notable impact on the production and productivity of rice and apple respectively. The major findings of the study are listed below;

- 1) Rainfall and average temperature were found statistically significant for the rice production and productivity. The reason is that the rice crop is dependent on water

more at its initial stages of growth and in the late stages it heavily depends upon the average temperature which is also supported by Sarker et.al (2012). That is why rainfall and average temperature had significant positive impacts on the production and productivity of rice.

- 2) Overall, the impact of two climatic variables viz., rainfall and average temperature on the production and productivity of rice was found to be significant. The fact is supported by the R^2 value which explains that the 97% variation in the rice production and productivity is the outcome of these two variables.
- 3) Rainfall was found insignificant and doesn't impact the apple production. The reason behind this fact is that the apple production is least affected by rains in the context of increase or decrease in the production and productivity. This fact is also supported by Wani et.al. (2015).
- 4) Average temperature was found significant and impacts both, the apple production and productivity. The logic behind this is that the apple production and productivity highly depend upon the average temperature while in the stages of flower sprouting to color picking, as is also highlighted by Braun and Muller (2012).
- 5) Over all the composite impact of two climatic variables on the apple production and productivity was found positively significant. This is indicated by the R^2 value which explains that the variations in apple production and productivity equivalent to 88% and 95% were brought about by these two climate variables rainfall and average temperature.

5.3 Policy Implications

The findings of the present study are of great utility in devising various policy measures which would prove welfare boosting in the agriculture and its allied sectors and will help policy makers, stakeholders, research persons, students and other agencies in focusing on basic problems before they will turn into certain complicated issues. The various policy implications implied by the present study are listed below;

- 1) There is the dearth of research in the concerned area due to the deficiency of research resources. It is thus implied upon the policy makers to provide funds for research and development in the said area, so that the actual assessment of prevailing conditions can be understood broadly.
- 2) Temperature tolerant varieties of rice should be supplemented to the farmers so that they could combat the low productivity effects.
- 3) Funds should be provided for the research and development of various fertilizers, fungicides, insecticides which will boost the production on one side and on the other side counter the various uneven climatic fluctuations.
- 4) Government should focus on providing hybrid apple trees which will increase the productivity of apples.
- 5) Credit facilities at low interest rates must be provided to the farmers which will help them to overcome various climatic uncertainties and keeps their interest sustained in basic primary activities.
- 6) Timely climate bulletins via media are of prime importance in order to cover the various environmental risks.

5.4 Limitations and Future Scope of the Study

The scope of the present study is limited to Kashmir valley only. Although the study in near future will prove its significance for the policy makers, stake holders and various other agencies, yet it has a limitation regarding its scope as it is limited to a single division (only Kashmir valley), leaving the other parts of the state (Jammu division and Leh- ladakh areas) untouched. Moreover, the study is expected to yield much better results if it is carried out at inter- district level, which is another limitation of the present study. Also increase in the number of variables will provide clearer picture than the present study, so that more better and fruitful policies can be adopted which will enrich the welfare of the said sector.

In the context of future scope of the present study, the study bears a wide research range which can be opted by the researchers. A state level study can be undertaken which will help in understanding the status of the state in comparison to the other states of the country. Also inter-district and inter-division comparisons will unveil the areas which are more impacted by the climate change. Comprehensive study can be undertaken with the addition of more climatic variables and crops. Also time series data can be extended to more than 31 years which will reveal the years from where climate changes become evident.