

Impacts of Climate Change on Agricultural Sector in Nepal

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Abstract

The impacts of climate change in Nepal have already begun and affected in several sectors mostly on water resources and agriculture. The analysis of the mean annual maximum air temperature from 1971 to 2014 showed that it is increasing by 0.056⁰C/year and the mean annual minimum air temperature in the same period is increasing by 0.002⁰C/year. It is found that the increase in maximum air temperature is higher in high altitude regions and minimum air temperature is increasing higher in low altitude regions such as Terai and mid-hills in Nepal. This increase in maximum air temperature in high-altitude regions has resulted in the loss of snow and glacier ice in the Himalayas which is the storehouse of fresh water. As a result, Himalayan glaciers are shrinking and glacier lakes are enlarging posing higher threats of outbursting that can cause huge damage in the downstream areas. During a period from 1977 to 2010, 24% of glacier area decreased with a rate of 38 km² per year and 29% ice reserve decreased in the same period in Nepal. Climate change impacts the agricultural sector through floods, landslides, droughts and other extreme weather events are increasing in Nepal recently. Increase in air temperature improves agricultural production only in a few mountain regions by shifting crop patterns. Nearly, in every 3 to 4 years a winter drought is observed in Nepal which also badly impacts winter crops in Nepal. Winter drought is also has very severe impacts on horticulture production in mountain regions in Nepal. With these negative impacts on agriculture, we need to carry out necessary adaption and mitigation measures as far as possible so that the agricultural production does not decrease.

Keywords: Climate change, Agricultural production, Flood, Drought, Horticulture