Research Article

# Impact of Climate Change on Maize Productivity in Khyber Pakhtunkhwa, Pakistan

**Asim Khan[1], Shahid Ali[1]*, Syed Attaullah Shah[1], Aftab Khan[1] and Raza Ullah[2]**

*[1]Department of Agricultural and Applied Economics, The University of Agriculture, Peshawar, Khyber Pakhtunkhwa, Pakistan; [2]Institute of Agricultural and Resources Economics, University of Agriculture, Faisalabad, Punjab, Pakistan.*

**Received** | January 14, 2019; **Accepted** | March 15, 2019; **Published** | May 14, 2019
***Correspondence** | Shahid Ali, Department of Agricultural and Applied Economics, The University of Agriculture, Peshawar, Khyber Pakhtunkhwa, Pakistan; **Email:** drshahid@aup.edu.pk
**Citation** | Khan, A., S. Ali, S.A. Shah, A. Khan and R. Ullah. 2019. Impact of climate change on maize productivity in Khyber Pakhtunkhwa, Pakistan. *Sarhad Journal of Agriculture,* 35(2): 594-601.
**DOI** | http://dx.doi.org/10.17582/journal.sja/2019/35.2.594.601
**Keywords** | Maize productivity, Climate change, Panel data, Fixed effect model, Khyber Pakhtunkhwa-Pakistan

**Supplementary Table 1:** *Projected impact of climate change on cereal production throughout the world.*

| Continents | South Asia | South East Asia | Sub Saharan Africa | Latin America | Europe | North America |
|---|---|---|---|---|---|---|
| Years | 2070-99 | 2070-99 | 2080-99 | 2070-99 | 2070-99 | 2099 |
| Rise in Temp. | 2.3-4.5°C | 2.0-3.8 °C | 3.7 °C | 1.0-3.5 °C | 1.0-5.5 °C | 2.0-5.0 °C |
| Cereal Production | Decrease by 4-10% | Increased by 30% | Rain fed cereal Decreased by 12% | Change by between 30 to +5% | Positively increased | Increased by 5-20% |

**Source:** *Kumar and Singh (2014), IPCC (2007).*

**Supplementary Table 2:** *Total last five year area, production and yield Khyber Pakhtunkhwa.*

| Year | Total | | |
|---|---|---|---|
| | Area (000 ha) | Production (000 tons) | Yield (kg/ha) |
| 2010-11 | 400.90 | 716.44 | 1787 |
| 2011-12 | 452.69 | 863.23 | 1907 |
| 2012-13 | 440.60 | 833.56 | 1892 |
| 2013-14 | 446.85 | 887.06 | 1985 |
| 2014-15 | 442.49 | 885.93 | 2002 |

**Source:** *Crop Reporting Services, Khyber Pakhtunkhwa, Peshawar, 2014-15.*