

## Climate Change and Food Security

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“Climate change refers to the long term shift in weather pattern like rainfall, high and low temperature which effect human as well as plant life”.

### Introduction

After 18<sup>th</sup> century human activities become harsher for the climate as human is adding greenhouse gases in the climate like CO<sub>2</sub> and methane through different activities like burning of fossil fuels. Due to this, CO<sub>2</sub> and methane level in atmosphere is increasing day by day. That CO<sub>2</sub> and methane act like blanket wrapped around earth's atmosphere, and this blanket trap heat from sun and cause rising in temperatures.

### Causes of Climate Change

The CO<sub>2</sub> comes from burning of fossil fuels like oil, gas and coal in different industries like coal power plants and driving vehicles.

Mostly rice growers burn the rice waste after harvesting, that not only add CO<sub>2</sub> and methane in the atmosphere but also a major cause of smog, which we are facing from last few years.

Forests are the major reserves of carbon and energy, not only, they act like lungs to clean the atmosphere but also reduce carbon level by fixing it through photosynthesis. Deforestation not only add carbon into the cycle but also we lose natural machines which fix Carbon form the atmosphere.

### Food Security

Climate change have diverse effect on food security and social security of the people or a country. Like melting of glaciers, rising sea level urges people to migrate, which leads to increase in population in specific area and in that area food security become a problem.

As we live in agricultural country, that is why agriculture have a big role in providing people food specially, wheat is one of the crops that have significance in food security. Temperature variation at sowing, booting and grain formation causes low yield of the crops also unexpected rainfall at harvesting is also one of the main cause of the low yield. Being an agriculture country low yield means food insecurity.

Almost 2 years back grain filling problem was being seen in maize crop especially in central Punjab. The maize crop was amazing till panicle emergence but after that due to temperature variation the duration of panicle emergence and silking become large, because of that the pollination was effected and grain filling of cob was also effected.

### Mitigation of Climate Change

To mitigate the climate change we need to control the emissions of the CO<sub>2</sub> and also we can control it by the concept of carbon sequestration, like biochar application in agriculture land, that have capacity to hold carbon for 100- 1000 years. At farmers level they

need to adopt some practices like DSR, Zero Tillage/No Tillage or Minimum Tillage. To minimize the decomposition of carbon present in the soil.

DSR is a best practice to minimize the production and release of methane gas which actually a product of transplanted rice.

Forestry and agro forestry is also a way to sequester the carbon from the atmosphere through photosynthesis for long time. Forestry should also be enhanced as it lowers the temperature of the atmosphere by using energy in photosynthesis.

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