

KISSAN VIKAS CHAMBER PUNJAB (Regd.)

Block-C, Aerocity, Airport Road, S.A.S. Nagar - 110037, Punjab

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**Respected Maharaja Amrinder Singh ji
Chief Minister Punjab.**

Subject : Climate change and its effects on Agriculture in Punjab.

As all of us are aware that the climate change in the world which started on the advent of Industrial revolution in the middle of eighteenth century at a low pace, has now gained such a momentum that every fabric of both Animal and Plant life has started feeling the heat of its adverse effects. Rise in the atmospheric temperature mainly due to fossil fuel burning and catalysed by deforestation and burning of the residue of the farm crops has resulted in the what we call Global warming and its resulting impacts have become subjects of research so that the world can be rescued from them.

Climate change is going to affect Agriculture in a big way. It can affect crop growth and quality. The level of atmospheric carbon dioxide is increasing. It was measured as 280 parts per million by volume before the industrial revolution and currently its level has increased up to 380 parts per million. This level has been steadily increasing by 1.09ppm by volume per year since the year 2000. This increase in the temperature and the volume of atmospheric carbon dioxide has already brought many changes in many aspects of agriculture and ought to bring more in the future and a few important of them can be discussed as following.

- 1) With the increase in the temperature, the population of the pests which may be carrying many plant diseases may increase. If these pests reproduce more and live longer, they may spread diseases to other areas.
- 2) Weeds have become more prolific and expected to invade new habitats.
- 3) Herbicides have become less effective in the areas where the volume of the carbon dioxide is considerably high.
- 4) Climate change has affected soil microbes and soil microbe-plant interaction directly and indirectly.
- 5) Carbon dioxide is critical to Photosynthesis and thus plant growth. It is likely that the higher levels of carbon dioxide will result in higher harvestable crop yields. However this depends critically on the availability of sufficient water and nutrients necessary for plant growth.

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- 6) With warming the plant species are migrating to higher elevations and latitudes and we should try to find out if some beneficial species which can be acclimatised and grown at our latitudes and at the same time the undesirable ones needs to be curbed.
- 7) Global warming has resulted in more sporadic rainfall which may cause floods and draughts in the same year in the same region.

These are some of the important factors of the climate change which are going to affect the crop growth and quality. The pest control measures may have to be changed. Application of nutrients may have to be altered in both the quantities and schedule and the need may arise to adjust the sowing and harvesting schedule of many crops. Such changes may result in the change of the cost of doing farming and may even effect the prices of agriculture produce.

With the coming of all the above changes, a new area of research has emerged which may combat the adverse effects of these happenings. State Government must rise to the occasion and impress upon the Punjab Agriculture University and other research organisations to give top priority to this research and strengthen their extension system so that the required remedies can reach the farmers well in time. All the degree colleges in the state and private universities where agriculture is taught as a subject, be directed to include climate change in their syllabi. Government Departments of both Agriculture and Horticulture must keep themselves abreast of the latest knowledge and techniques to deal with these changes. It is also of paramount importance that while arriving at any policy decision in both Agriculture and Horticulture, the factor of climate change must be kept in the mind.

It is also pertinent to mention here that the effects of this climate change are becoming more and more visible in Punjab. The rains are becoming more and more erratic. The weeds are becoming more prolific and spreading and are playing host to many pests as is evident in the case of Bemisia Tabaci (white fly which inflicts cotton crop). Diaphorina citri (Citrus psylla) which is an insect and Diplodia (a fungus) have started attacking the citrus orchards even in the month of November which till now was considered safe from these pests.

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You are very humbly requested to allot and earmark some specific financial resources and take other requisite measures to deal with this problem. These steps will go a long way to safeguard and protect the Agriculture in Punjab.

Thanking you,

Yours Sincerely

Date: 29/11/2017.

Kulwant Singh
(President Kissan Vikas Chamber Punjab)