

Category	: International Rice Research Conference
Select Theme	: Climate change and environmental sustainability
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Keyword 1	: Adaptation to climate change
Keyword 2	: Environmental sustainability
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Title of Entry	: A perception-based approach to assess Rice farmers' vulnerability in the alluvial plains of Punjab in response to weather variability
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: Food security is a major issue which is augmented by variability in weather that has become predominant in recent years. The predicted changes in global climate may affect the production of rice which is the most important staple food for more than half of world's population. The state of Punjab in India is a major contributor of rice to its central pool. Being a well irrigated state, a shift has been observed from other kharif crops to rice since two decades but a gradual decrease in rainfall and increase in mean temperature in the state has challenged rice cultivation. Regional vulnerability assessment towards weather variability helps the policy makers to frame influential policies for a specific region. The present study has used perception-based approach to quantify the vulnerability in terms of exposure, sensitivity and adaptive capacity as perceived by 186 farmers from three agro-climatic zones of Punjab at different growth stages of rice. Findings revealed that there has been an increase in summer and winter temperature as perceived by majority of the farmers while all farmers perceived a decrease in annual rainfall in all zones over a period of ten years. More than half and two-third of the farmers perceived above normal mean temperature (51.42%) and below-normal rainfall (73.06%) at sowing, transplanting and germination stage of rice respectively which led to scorching of seedlings (49.27%) and desiccation of seedlings (61.25%) whereas booting (52.87%) and maturity (40.12%) stages have been perceived as highly exposed to above normal mean temperature which led to hopper burn (44.47%), forced maturity, loss in weight of grains (37.37%) and shattering of grains (30.82%) . In response to these sensitivities, farmers were adapting various practices like resowing, increase in number of irrigations, increase in pesticidal sprays, purchase of combines etc. to cope up with various weather variability impacts. ANOVA depicted that all stages of rice were exposed to

variability in weather parameters significantly. Spatial distribution of various vulnerability indicators showed that the entire state of Punjab had moderate vulnerability except Moga region of central plains zone found to be highly vulnerable as perceived by the farmers.

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