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## Session 1.3 Developing Adaptation Strategies

### Oral Presentation

#### **Title: Developing adaptation packages for West African agriculture while ensuring congruence with climate and RAPS.**

*Authors:* Ibrahima Hathie<sup>1</sup>, D.S. MacCarthy<sup>2</sup>, S. B. Freduah<sup>2</sup>, A. Nenkam, M. Adams, G. K. Adiku<sup>2</sup>, P.C.S. Traore<sup>3</sup>, J. Clottey<sup>2</sup>, A. Ly<sup>1</sup>, and S. Narh<sup>2</sup>

<sup>1</sup> Initiative Prospective Agricole et Rurale, Senegal; <sup>2</sup> University of Ghana, College of Agriculture and Consumer Science, Ghana; <sup>3</sup> International Crops Research Institute for Semi-Arid Tropics, Mali

*Abstract:* In the semi-arid region of the Sahel, climate change is already affecting the farming systems and these impacts are expected to heighten in the near to mid-century. Given the complexities and conflicting drivers at play and the foreseeable negative consequences on the livelihoods of the majority of farmers, it is worthwhile designing relevant adaptation packages that will alleviate these effects. In this study, we envision to assess the implications of implementing two adaptation packages within the context of three West African farming systems specifically located in Ghana (Navrongo), Mali (Koutiala) and Senegal (Nioro). The first adaptation package is composed of heat and drought tolerant species along with an economic and policy level intervention through the delivery of subsidies to acquire improved varieties. The second pack builds on the first but adds a fertilizer component (splitting and timing to account for extreme events) and a policy variable in the form of index-based insurance adoption. The design process included interactions with a diverse set of stakeholders. The outcomes of these adaptation options on current and future agricultural systems will shed light on the projected adoption rates of climate adapted-systems and show how these various adaptations affect the impacts of climate change, keeping congruence with the relevant representative agricultural pathways.

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### Oral Presentation

#### **Title: Designing and Assessing Adaptation Strategies to Face Challenges of Climate Change: Insights from Indo-Gangetic Plains of India**

*Authors:* Harbir Singh<sup>1</sup>, N. Subash<sup>1</sup>, G. Paudel<sup>2</sup>, B. Singh<sup>3</sup>, R. Valdivia<sup>4</sup> and G. Baigorria<sup>5</sup>

<sup>1</sup> ICAR-IIFSR, <sup>2</sup> TNAU, India, <sup>3</sup> CIMMYT, <sup>4</sup> Oregon State University, USA, <sup>5</sup> University of Nebraska-Lincoln, USA

*Abstract:* The adverse impacts of climate change are clearly discernable particularly in South Asia with greater variability of monsoon and an increase in the occurrence of extreme weather events such as droughts, floods and intense heat waves. The Indo-Gangetic basin (IGB), which is characterized by smallholder agriculture, is highly vulnerable to climate change. This region is considered the rice-wheat bowl of the country, In addition to food requirements, more than half of the rural population is dependent on agriculture for earning its livelihood. With the growing challenges to provide food security for rising populations, it is pertinent to identify and test suitable adaptation strategies not only for the existing production systems but also for the future farming systems. The Agricultural Model Improvement and Intercomparison Project (AgMIP) has developed protocols which help in designing and testing adaptation strategies to deal with climate change. Primarily this study is aimed at designing adaptation strategies across four locations in the IGB. Two locations in North-West India (Meerut and Karnal) have highly intensive farming system which is showing signs of stagnation with overexploitation of natural resources. The other two locations in the North-East India (Faizabad and Samastipur) have under-utilized productivity potential. The adaptation strategies for these two distinct production environments are expected to be different considering their specific production environments and socioeconomic settings. This presentation will share experiences of designing adaptation strategies for two locations in North-West India (Meerut and Karnal) and demonstrate their use in dealing with adverse impacts of climate change.