# Re-designing irrigated intensive cereal systems through bundling precision agronomic innovations for transitioning towards agricultural sustainability in North-West India

**Project Title:** P259 - Scaling-up Strategies for Climate Risk Management in South Asian Agriculture

**Description of the innovation:** Various management alternatives advocated to address agricultural sustainability in North-West India. However, their application in isolation has not delivered the potential benefits. Here, innovations have been done by bundling of agronomic practices as packages. These innovations are 11.2-29.2 % more productive, more profitable with 20-85% less irrigation water use and better nitrogen and energy use efficiency. They will be helpful to the governments to prioritize and make efficient use of investments for impact at scale.

**New Innovation:** No

**Stage of innovation:** Stage 1: discovery/proof of concept (PC - end of research phase)

**Innovation type:** Production systems and Management practices

**Geographic Scope:** Regional

**Number of individual improved lines/varieties:** <Not Applicable>

**Region:**
- Southern Asia

**Description of Stage reached:** A field study was conducted for 2 years (2016–17 and 2017–18) in Karnal, India. The experimental site represents the sub-tropical and semi-arid climate, capturing current predominant as well as potential future cereal-based systems. The innovation has been documented in Nature Scientific Reports.

**Name of lead organization/entity to take innovation to this stage:** CIMMYT - Centro Internacional de Mejoramiento de Maíz y Trigo / International Maize and Wheat Improvement Center

**Names of top five contributing organizations/entities to this stage:**
- CSSRI - Central Soil Salinity Research Institute
- BISA - Borlaug Institute for South Asia
- ICAR - Indian Council of Agricultural Research

**Milestones:** No milestones associated

**Sub-IDOs:**
- 8 - More efficient use of inputs
- 29 - Enhanced adaptive capacity to climate risks (More sustainably managed agro-ecosystems)

**Contributing Centers/PPA partners:**
- CIMMYT - Centro Internacional de Mejoramiento de Maíz y Trigo / International Maize and Wheat Improvement Center

**Evidence link:** https://cgspace.cgiar.org/handle/10568/106104
Deliverables associated:
- D19287 - Re-designing irrigated intensive cereal systems through bundling precision agronomic innovations for transitioning towards agricultural sustainability in North-West India (https://tinyurl.com/yyv8puoy)

Contributing CRPs/Platforms:
- CCAFS - Climate Change, Agriculture and Food Security
- Wheat - Wheat