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## **Climate-resilient water-for-agriculture infrastructure: boundaries, complexities and standards in irrigated working lands**

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The continuous intensification of agriculture along the High Plains in the US has been sustained by improvements in genetics, understanding of soil complexity, hydroclimate controls, and irrigation. The present work aims to identify the socioecological and sociotechnical processes involved in sustaining the intensification of yields in the past 50 years. We hypothesize that in the occurrence of extreme events, the boundaries of the agricultural systems –for example, water tradeoffs, governance, and natural availability—can be compromised, leading to a reduction in yields. Furthermore, the complexity of the Ag system –characterized by the interdependencies among complex hydroclimate, soil, and management – can change across spatial scales. The objectives are (1) to collect digital yield and climate data, as well as information about standards of water-for-agriculture; and (2) use the collected data to characterize the limits and limitations of the standards. In the proposed approach, the standards will represent our ability to manage resources, and ultimately create resilient water-for-food infrastructure in a changing climate.