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S4-O2: Building Resilience of Rainfed Production Systems to Climate Change: Livestock Water Productivity Perspectives

**Amare Hailelassie¹, Michael Blummel¹, Madar Samad³, Floriane Clement³,
Katrien Descheemacker²³ and Anandan Samireddypalle²**

¹International Livestock Research Institute (ILRI)-ICRISAT, Patancheru, Hyderabad 502324

³International Water Management Institute (IWMI)-ICRISAT

²³International Livestock Research Institute (ILRI)-Addis Ababa / International Water Management Institute (IWMI)-Addis Ababa

Amare Hailelassie (author for correspondence) Patancheru, Hyderabad 502324

a.hailelassie@cgiar.org

ABSTRACT

The per capita water availability in the Indo-Gangetic basin is projected to be reduced to a level typical for water-stressed areas. This increases the vulnerability of agricultural systems to climate change induced shock. The objectives of this study were to understand the spatial dynamics of water requirements for livestock feed production, resulting Livestock Water Productivity (LWP) and their implications for systems adoption to climate change. LWP is defined as the as a ratio of livestock's beneficial outputs (e.g. in physical, financial or energy terms) and services to the water depleted in producing feed for livestock. We compared two districts representing typical crop-livestock mixed systems of irrigated (Hisar) and rainfed agriculture (Bankura). Data on livestock, land use and climate were collected from the study districts (1992-2003). Our results showed a lower LWP value for rainfed systems compared with the irrigated system. This can be accounted for by lower productivity of livestock and their feed, whereby the latter induced higher water requirements per unit of livestock products. Improving feed productivity, feed quality and livestock management will help to build rainfed systems' resilience to climate change.