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“Towards multi-functional agro-ecosystems
promoting climate resilient futures”

Solutions for digital inclusion and digital innovations for inclusion by 2050

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Abstract

This presentation is part of a proposed hybrid panel session entitled “Gender equality and inclusion in food, land, and water systems by 2050: Projections and solutions” by the CGIAR Gender Equality and Inclusion Accelerator, co-organised by the CGIAR Science Program on Multifunctional Landscapes.

Digital technologies are rapidly transforming food, land, and water systems (FLWS), yet their benefits remain uneven and risk reinforcing existing gender inequalities. This paper argues that digital inclusion will only advance gender equality by 2050 if it goes beyond expanding access to ensure that women and socially excluded groups can use, shape, and act on digital technologies.

Drawing on global evidence and CGIAR research, the analysis shows that digital exclusion is not driven by a single constraint, but by the interaction of infrastructure, affordability, skills, institutional delivery, and social norms. As a result, closing digital gender gaps requires moving beyond “access-focused” approaches toward strengthening agency—defined as the ability to interpret information, make decisions, and translate digital engagement into meaningful outcomes.

The paper highlights three key findings. First, expanding connectivity alone has limited impact where women lack control over resources, time, and decision-making power. Second, standalone digital solutions often fail to reach or benefit women due to low relevance, literacy barriers, and restrictive norms. Third, bundled and context-responsive approaches—combining digital tools with training, finance, extension services, and community-based support—are more effective in enabling sustained and equitable outcomes.

The paper concludes that achieving inclusive digital transformation requires coordinated action across multiple actors. Governments must invest in inclusive infrastructure and policies; the private sector must design affordable and user-centered technologies; and research and development actors must address bias in data and AI systems while supporting co-design with users. Strengthening intermediary systems and community networks is critical to ensure that digital technologies translate into real opportunities.

Advancing digital inclusion is therefore not only a technological challenge, but a systemic one—central to achieving equitable, resilient, and sustainable agrifood systems by 2050.

Keywords: Agri-food systems, digital inclusion, digital transformation, gender equality, social inclusion

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