

POLICY BRIEF

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Key actions to develop inclusive digital resources for smallholder cattle ranchers in Brazil

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The digitization of food systems is well underway. The digital ecosystem and its actors have increasing influence over how food is produced, what food people buy, and flows of information among farmers, supply chain actors and consumers. Efforts to transform food systems towards sustainability, including climate change resilience and mitigation, similarly rely on digital resources and offer the opportunity to scale up best practices rapidly at low cost. Yet differences in digital participation among farmers risk exacerbating inequities, and top-down digital information can lack local relevance and disempower farmers, especially smallholders.

In this context, the Agroecological Transitions Program’s (TRANSITIONS) Inclusive Digital Tools project (ATDT) supports the use of inclusive digital resources and citizen science to stimulate the beef cattle chain in Brazil to create, adapt and innovate production practices based on agroecological principles. This brief presents results of a stakeholder consultation carried out in October and November 2022 with the objective of understanding key areas, principles and priority actions to guide the development of inclusive digital resources for smallholder cattle ranchers in Brazil.

The stakeholder consultation consisted of a series of interviews and one webinar in which the perceptions of these actors were collected regarding: (i) the use of digital tools, their barriers and opportunities for future development; (ii) principles to make these digital tools more inclusive of rural producers; (iii) proposals and incentives for the adoption of best practices and (iv) the role of digital tools in this process. Approximately 15 stakeholders participated in this process, representing the federal and state government of Pará state, NGOs, local industry, digital tool developers, regional research institutions, extensionists and rural producers.

Stakeholders’ perceptions were systematized under five areas related to the digital inclusion of smallholders’ cattle ranchers (infrastructure/technology, rural technical assistance, governance and public policies, and investments), which are summarized in table 1 along with principles and priority actions. This information can be used to guide beef cattle value chain actors in the design and implementation of farmer-centric digital tools that aim to support the digital inclusion and adoption of improved livestock practices in smallholder cattle ranching in Brazil.

Table 1. Best practice guidance for digital tool inclusiveness and farmer co-creation of practices with local stakeholders: key areas, principles and priority actions.

KEY AREAS	PRINCIPLES	PRIORITY ACTIONS
Infrastructure/ Technology	<ul style="list-style-type: none"> • Improve connectivity (hard infrastructure) • Customize equipment and technology for the producer • Develop tools aimed at smallholders • Provide equipment and technology for technical assistance and rural extension institutions 	<ol style="list-style-type: none"> 1. Improve access to internet in rural areas 2. Create demand by finding what producers want and how they view digital tools adding value to the value chain (“demand drives tech. adoption”)

Technical Assistance	<ul style="list-style-type: none"> • Stimulate the exchange between the producer and the extensionist - listen to smallholder requests and needs • Build capacity of more professionals for rural technical assistance, involve educational institutions • Regionalize knowledge • Promote the financial literacy of producers 	<ol style="list-style-type: none"> 3. Carry out a diagnosis of existing digital tools and access the needed structure for producers and public entities to use them – improve digital tool interoperability 4. Foster the communication between stakeholders working in the same region
Governance	<ul style="list-style-type: none"> • Consider different stakeholders to co-create solutions and problem-solving • Tighten the links along the value chain actors • Create forums and spaces for exchanging experiences • Integrate existing platforms and systems • Gather and contextualize local and regional information on requests and needs 	<ol style="list-style-type: none"> 5. Use a participatory approach to organize and disseminate information 6. Develop digital tools with information that helps farmers understand practices and economic returns of adopting agroecology practices 7. Link digital tools with financial institutions to improve smallholders' access to credit
Public Policy & Investments	<ul style="list-style-type: none"> • Create market access and encourage the participation of women and youth • Create new forms of investments/credit lines/incentives • Connect investments and efforts to generate opportunities for information and knowledge co-creation. 	<ol style="list-style-type: none"> 8. Build public policies integrated with incentives, such as Payment for Ecosystem Services)

The Agroecological Transitions for Building Resilient, Inclusive, Agricultural and Food Systems (TRANSITIONS) Program aims to enable agroecological transitions through the development and adoption of holistic metrics for food and agricultural systems performance, inclusive digital tools, and transparent private sector engagement. The Inclusive Digital Tools (ATDT) project aims to support the use of digital resources and citizen science to empower farmers to co-create, adapt, and innovate practices for climate-resilient and low-emission agroecological outcomes at large scales. In the Brazil site, the focus is on leveraging inclusive digital resources and citizen science to stimulate the beef cattle chain in Brazil to create, adapt and innovate production practices based on agroecological principles.

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