



1000FARMS



Tricot creates a value network for on-farm testing of crop varieties

Farmers, a crop breeding company, a social enterprise, and a software company reap the benefits of participatory testing

On-farm testing is crucial for crop improvement, as it helps evaluate new crop varieties under real-world conditions. However, breeding programs have long struggled to perform on-farm testing. Conventional methods have typically involved testing new varieties in a limited number of locations, relying heavily on field technicians who work directly with farmer groups. It can be difficult and expensive for breeding programs to establish the linkages and capacity for widespread on-farm testing that generates sufficient data under diverse farming conditions. As a result, breeding programs have often only been able to obtain relatively small amounts of rather unrepresentative data from these trials.

A new value network facilitated by a digital platform

Digital platforms can revolutionize how diverse value generators and users interact with each other. By facilitating real-time data sharing, seamless interactions, and coordinated decision-making, such platforms help to reduce friction and align incentives. The result is a *value network*. Unlike a conventional linear value chain (which traces the creation of value from production to consumption), a value network emphasizes multidirectional flows, empowering all participants to benefit from their engagement.

Value networks for on-farm testing are now within reach. The ClimMob platform, applied in the tricot approach, facilitates communication, standardized protocols, and data transfer. This can allow breeding programs to outsource their on-farm testing to farmer-facing organizations that have an extensive footprint in the field. Costs can be reduced drastically, while ensuring data quality. Farmer-facing organizations, too, benefit from the insights to improve their variety offer to farmers.

Collaborating to expand reach across regions

Bayer, a private crop breeding company, partnered with the social enterprise One Acre Fund using the 1000FARMS tricot approach, via the ClimMob digital platform developed by MrBot Software Solutions.

This was a significant departure from Bayer's usual on-farm testing, which was limited to a few locations with farmer groups. Collaborating with One Acre Fund, Bayer was able to expand its testing to several regions, incorporating a wide variety of farming conditions. Each stakeholder played to their strengths: Bayer provided the seeds, fertilizers, pesticides, and funding for data collection. One Acre Fund mobilized and selected farmers, trained field agents, managed trial implementation, and collected data. The farmers hosted the trials on their own fields, contributing labour, time, and observations from planting to harvest. The collaboration created a value network that connected all stakeholders for more effective on-farm testing (Figure 1). Over two seasons, Bayer tested eight pre-release maize varieties and a local check variety with 120 farmers in multiple regions of Kenya.



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Creating value for all stakeholders

The value network approach proved highly effective. Bayer was able to significantly expand its scale of testing by reaching farmers in diverse locations, something that was previously unfeasible with its limited resources. The use of digital tools in the tricot approach provided real-time data collection and fast turnaround, enabling Bayer to gather valuable market intelligence.

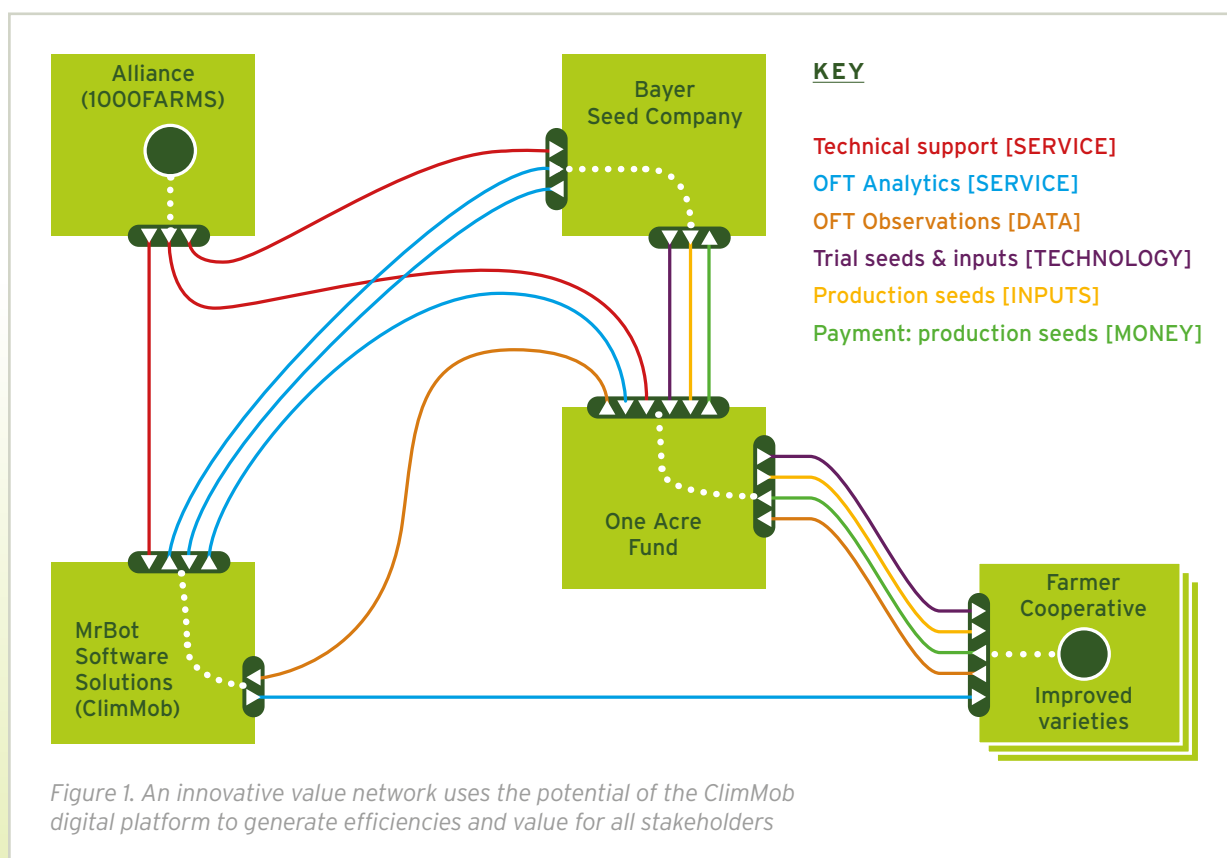
One Acre Fund also benefited from the collaboration by acquiring new maize varieties for its network, which were marketed through input kiosks to farmer cooperatives. This increased the reach of the varieties to more farmers, further promoting adoption, a core goal of the social enterprise.

In exchange for their land, labour, and time, farmers gained access to improved varieties that boosted yields, contributing to greater food security and higher incomes. MrBot Software Solutions improved the ClimMob platform to comply with the requirements of commercial deployment, generating an income stream for further development of the platform.

Sustainability and scalability

The innovative institutional network model promoted a mutually beneficial exchange of resources and roles - key to ensuring sustainability. Bayer, One Acre Fund, and the farmers all gained from the partnership, creating a system where each stakeholder's contribution was valued and essential.

The collaboration, enabled by the digital platform ClimMob, has also highlighted the scalability of the value network model. By involving farmer-facing organizations like One Acre Fund, the approach enables the testing of varieties across diverse farming communities, overcoming scalability issues seen in conventional on-farm testing methods. This bodes well for the future of a participatory tricot approach that supports the development and adoption of crop varieties suited to farmers' needs.



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