Scaling up the impact of legumes and cereals in the drylands

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Introduction

Production quantities of maize and wheat in comparison to groundnuts, pigeon peas, millet and sorghum (1960-2015; projections until 2030)

Source: FAOStat 2019
1. Despite (or because of) scaling discourse of at least 30 years, various waves and fashions, scaling myths sustain: Push harder and faster (‘big push’), rational human behaviour, large budgets cure all ills.

2. GLDCs are not the only one struggling with scaling: Scaling up nutrition (SUN) initiative, MSI CoP, CRP RTB, incremental and transformative progress.

3. For high-level impact (SDGs and CGIAR system-level outcomes), rethink scaling: From dissemination and ‘growing big’ to expanding impact through system/sector reform + three critical areas.
Farm typology analysis and technology assessment: An application in an arid region of South Asia

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ABSTRACT

The design and diffusion of context-specific technologies is critically important in the multi-dimensional, complex farming systems in arid and semi-arid regions. This paper uses a mixed-method framework to characterize the complexity and heterogeneity of smallholder farming systems and identifies constraints to and opportunities for sustainable intensification. Specifically, the study: (i) characterized farm household typologies based on the diversity of livelihood assets; (ii) co-designed context-specific interventions through an iterative participatory process; and (iii) ex-ante evaluated such interventions to inform multiple stakeholders. We explored farming system diversity using data from 224 farm households in western Rajasthan, India. Employing multivariate statistical techniques and participatory validation, we identified 7 distinct farm household types. Participation appraisal with multiple stakeholders revealed heterogeneity across farm household types. For instance, the interest in farmers in integrating potential fruit trees even among the mixed farm typology marked by varied household type 3 preferred the multipurpose horticulture tree, which requires low labor input; household type 2 preferred market-oriented horticulture production; household type 3 did not opt for permanent but for small economic; and household type 4 (dominated by women) opted for the small horticulture kitchen gardens. The study demonstrated the utility of a mixed-method approach that addresses multi-dimensional heterogeneity in generating insights and assist in co-designing locally appropriate technologies across different farm types and agro-ecological regions to achieve sustainable intensification.

Article

Households’ aspirations for rural development through agriculture

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Abstract

In sub-Saharan Africa, rural households are the focus of many development efforts and the transformation of smallholder agriculture is one entry point for this process. Understanding farming households’ technology choices remains one of the most critical aspects of agricultural research in rural areas. However, many technologies that are known to be effective and potentially highly beneficial have remained widely unused. One reason is that predicting farmers’ decisions concerning agricultural technologies using conventional economic theories is flawed. In this article, we suggest that human aspirations have a much greater influence on technology choices than hitherto believed. We further argue that a better understanding of aspirations will improve the targeting of technology development by researchers. We propose distributed ethnography to empirically test the influence of human aspirations on technology choice. From such insight, we anticipate better research priority setting as well as more effective rural development strategies in general.

Keywords
Distributed ethnography, behaviour, decision-making, household choices, livelihood portfolio
1. **Technology Readiness Level** (TRL, NASA), **Scaling readiness** of technologies (OECD/EU, IITA, WUR, RTB), **Impact Based Spatial Targeting Index** (IBSTI) for priority setting when scaling agricultural technologies.

2. **Understand demand**, integrate product and process innovation; technical and social innovation.

3. **Design-Thinking Methodology** for rapid prototype development, attract risk capital, provide solutions for GLDCs where traditional markets fail (e.g. bottom-up social entrepreneurship, incubation)
The ‘right’ approach

What we can learn from scaling phases of M-Pesa mobile money in Kenya for GLDCs

- Throughout scaling phases, adaptive socio-technical innovation rather than technology development prevailed.
- Changing actor network from piloting to standardisation > actors closer to poor consumers (BoP markets) than lead firm.
- ‘Planned shifts’ and ‘incremental drifts’ in scaling strategy.

Source: Foster et al (2013)
1. **Theory-led scaling**: CAS, human behaviour change, transition theories, social movement literature….

2. **Search for leverage points**: Value chains and the private sector; advisory services and ICT; policy engagement (Westermann et al 2018).

3. **Model impact pathways**, anticipate tipping points and alternative futures

4. **Combine product and process innovation**, work with human irrationality, collaborate with influencers.
The ‘right’ organisation

Relationship between transformational leadership, innovativeness, profitability and growth

Notes: Chi² = 75,713, DF 58, n.s., Chi²/DF = 1,305, AGFI = .848, GFI = .903, CFI = .969, TLI = .956
RMSEA = .056
***p < .001, ** p < .01, *p < .05

What the ’right’ organisation means in practice

1. Solve systemic organisational barriers (I am my position, logframe-fanatism, bureaucratic autocracy; instead entrepreneurial action, build scaling capacity, mentor the outliers) > **hire right people** in right positions;

2. Reflexive, risk-taking, experimental **learning organisation** leading, foster horizontal/vertical comms, remember: ’Culture will have strategy for breakfast’.

3. **Engage** with wider market and institutional (regulatory) environment essential for scaling up impact of legumes and cereals in drylands (co-learning).
Three pillars for ‘Science of Scaling’

Conceptual clarity
from ‘delivery of science’ to ‘science of scaling’; scaling out/up/down > Catalysing change through innovation

Ask the right question: Political economy, vested interested; motivational drivers (It’s the mind, stupid!’)

Advance from isolated case studies and RCTs to Real World Laboratories.
Example: ScaleWays ‘Water for Production’ scenarios across the Lake Victoria Basin

Scaling up resilient land and water management for wetland rice and strategic feed resources in agro-pastoral areas
Conclusion

1. If you want to bend this GLDC curves, start working with human irrationality.
2. Formulate a multi-level scaling strategy (research, scaling capacity, engagements/labour sharing) for GLDCs
3. Create institutional conditions for scaling of impact
Be aware

The Empire Strikes Back

Thank you.
Selected References


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