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# Do theories of change enable innovation platforms and partnerships to navigate towards impact?

**Sietze Vellema, Yiheyis Taddele Maru, Julia Ekong, Paul McNamara, Ann Waters-Bayer, David Watson and Jan Brouwers**

Theories of change (ToCs) are increasingly used to articulate pathways for interventions and to support learning. This responds to the recognition of the complexity of agricultural development. Through two examples, this paper examines how ToCs have enabled practitioners to navigate towards impact in settings characterized by a multiplicity of views from different actors on issues of joint concern. The cases discuss how the intervention programs test the ToCs, as well as organize and reflect on feedback. The cases reveal that one cannot predict the route to impact, but one can compose plausible story lines explicating the assumptions. Developing and using ToCs takes time and requires a deliberate effort to monitor actions and changes. Connecting practitioners with researchers makes it possible to use more intermediate theorisations tailored to situated and specific impact pathways. However, the dynamics captured by ToCs may contrast with the donors' demands for accountability and consistent reliance on a rigid log-frame approach to determine project activities and outputs. Therefore, it is relevant to make explicit choices about how to relate ToCs to M&E efforts.

Photo: WUR/GDI



Stakeholders preparing their Theory of Change



## Introduction

Theories of change (ToCs) are increasingly used to articulate pathways for interventions and to support continuous learning. This responds to the recognition of the complexity of agricultural development challenges and the non-linear process of achieving innovative and sustainable solutions. ToCs are the *“ideas and hypotheses [theories] that people and organisations have about how and why change happens/can happen through interventions. These theories... may be explicit or implicit, and are often based on personal beliefs, assumptions and a – necessarily limited – personal perception of reality”* (van Es, et al., 2015). ToCs are heavily determined by the context within which they are developed, a context which will change over time. There will always be a tension between the implicit ToCs of the various actors trying to work together towards agricultural innovation. However, the act of transforming the current implicit ToCs into explicit ToCs can help to reduce these tensions by throwing light on the different perceptions of the actors, and the assumptions on which their ToCs are based.

The concept of agricultural innovation systems (AIS) also recognizes the complexity of development interventions and has helped to reframe the interaction and dynamics of actors and factors working within an innovation system in the agricultural domain, at different scales (Waters-Bayer et al., 2013). A family of approaches under the banner of AIS – including the integrated agricultural research for development (IAR4D), convergence of science–strengthening agricultural innovation systems (CoS-SIS) and research into use approaches – has been adopted to deliver innovative solutions to complex problems and seize emergent opportunities. The AIS approaches have helped to redefine innovation as an emergent property of interactions among multiple actors who have a stake in an issue or an interest in pursuing opportunities. ToCs for AIS-based interventions are primarily about leading stakeholders on a journey of learning to help them navigate the innovation process and solve complex problems.

Based on two examples of development programs using ToCs, the paper will examine how ToCs have enabled practitioners to navigate towards impact in settings characterized by a multiplicity of views from different actors on issues of joint concern. The first case is based on the experiences of the public CGIAR research program (CRP) on Maize (MAIZE, see also: <http://maize.org/>). In MAIZE, innovation platforms are essential for directing technology development and arranging exchange between key actors. In the second case, based on the experiences of the zSCALE programme (see also: <http://zscale.org/>), business-led partnerships arrange sourcing by companies from associated farmers and induce collaborations with small and medium enterprises in low-income food markets. The partnerships try to connect inclusive development and food security. Both cases describe the

entry points for intervention and the intermediate outcomes identified (Vellema et al., 2013). The cases also discuss how the intervention programs test the ToCs, as well as organize and reflect on feedback, leading to flexibility and learning. The team of authors discussed both cases and drew lessons on how to give explicit attention to the ToCs underpinning development and innovation pathways in agriculture (Maru et al., 2016).

## Case 1: MAIZE

Funded by overseas development and philanthropic agencies, MAIZE is one of a number of global CRPs.<sup>1</sup> MAIZE focuses on the development, adaptation and deployment of interventions for the sustainable intensification of maize-based systems in the developing world, which are not adequately served by either the public or private sector. A combination of agricultural systems and AIS approaches offers an opportunity to better understand the complexity of the contexts in which MAIZE projects are working. MAIZE projects acknowledge that a silver bullet (‘one size fits all’) approach is often unsustainable and, therefore, experiment with a variety of options. MAIZE places less emphasis on the demonstration of supply-side pre-determined innovations, and greater emphasis on the role of farmers in selecting which technologies and knowledge are important, including other crop/livestock and livelihood options unrelated to maize.

### *Space for innovation and entry points for intervention*

Entry points within MAIZE projects are increasingly informed by a multi-scale innovation systems research approach, which aims to increase understanding of: 1) the contexts in which smallholders live and their livelihood strategies, constraints and opportunities; 2) local farming systems – including their diversity, synergies, trade-offs and trajectories; and 3) farmers’ and other key actors’ willingness and capacity to adopt technologies and change their practices. Increasingly, MAIZE is working on multi-stakeholder approaches, with farmers and other key actors, to co-define entry points for intervention. MAIZE strives to improve its understanding of the institutional landscape and the means to influence it. To this end, greater emphasis is now being placed on the up-scaling of technologies and innovations, especially towards increasing the capacity to influence the institutional enabling environment (policies, rules, regulations).

MAIZE pursues three complementary research for development (R4D) strategies, or pillars, related to the overall CRP impact pathway and turn each flagship project ToC into a reality for poor consumers and producers of maize. The three R4D pillars of MAIZE are: 1) improved germplasm; 2) sustainable intensification; and 3) value addition. The improved germplasm pillar works directly with over 200 small and

<sup>1</sup> See pp. 113-116: <https://library.cgiar.org/bitstream/handle/10947/4264/2-MAIZE%20Full%20Proposal.pdf?sequence=1>





Photo: Remco Muir

Maize harvest in Bihar, India

medium-sized private seed companies, and more than 220 community-based seed producer associations, to commercialise improved maize varieties. The sustainable intensification pillar works through 162 innovation platforms to co-develop science-based solutions and institutional change, and to foster enhanced livelihoods and environmental sustainability for target communities.

*The intermediate outcomes formulated; why and how this intervention can achieve impact (acknowledging the assumptions, risks and tensions)*

The MAIZE impact pathway and ToC both contributed to the achievement of five principle intermediate development outcomes (IDOs): 1) the increased resilience of the poor to climate change and other economic, environmental and other shocks; 2) increased incomes and employment; 3) increased productivity; 4) improved diets of poor and vulnerable people; and 5) enhanced benefits from ecosystem goods and services. MAIZE’s IDOs are part of a larger set of IDOs, which were jointly developed by CRP directors and impact pathway/ToC experts between 2012 and 2013, and have been refined several times since. The current set of IDOs, which are primarily shaped by donor priorities, are included in the CGIAR Strategy and Results Framework.

*Testing the ToCs and organized feedback*

A robust geospatial framework – including biophysical and socioeconomic extrapolation domains and 162 innovation platforms in target areas – brings together different actors to test, adapt and adopt new combinations of technologies. Feedback from farmers and other key actors is solicited through a range of mechanisms. In some projects, feedback is articulated through specialised experimental platform committees.

One of the challenges of this approach is that farmers and other local actors who come together through innovation platforms often identify both agricultural and non-agricultural livelihood opportunities that lie outside the project’s technical expertise. This introduces significant challenges to MAIZE projects. Firstly, a change in trajectory for an individual project needs to be negotiated with the donor. This will most likely involve bringing new partners into the project with the required knowledge/skills, or exposing existing project staff to challenges that lie outside their own technical competencies. In addition, if non-agricultural opportunities are identified, the issue of drifting from the original mandate quickly becomes apparent. Ultimately, MAIZE is committed to continually evaluating the efficiency and effectiveness of innovation platforms, both for the

co-definition of agricultural R4D questions and for the co-development of technologies/innovations, as well as for scaling up and scaling out technologies.

### *Reflection leading to flexibility and learning*

With the goals of enhancing project capacities to innovate and adapt and facilitating sustainable solutions to agricultural challenges, MAIZE is increasingly committed to: a) increasing the room for manoeuvre/flexibility within more action research informed project trajectories, which focus on crop/livestock/tree/off-farm opportunities; and b) accelerating learning between regions, countries and partners by sharing practical experiences via different learning mechanisms. The utilisation of ToCs informed by AIS has benefitted MAIZE in several ways, including: 1) providing an opportunity for scientists and project managers to clearly articulate the pathway (and assumptions/risks) between outputs and outcomes; 2) allowing for the testing of assumptions/risks; 3) promoting learning within projects; and 4) providing feedback in research processes – facilitating the adaptation of the products and knowledge generated, as well as the approaches used. Ultimately, through embarking on more action research oriented R4D, project teams are increasingly exposed to dynamic innovation processes and development pathways in which they have no clear, or automatic, comparative advantage. However, this shortfall can be addressed by ensuring that project teams have the right mix of research and development partners so that every partner is working on its main comparative advantages in a complementary fashion with others along the R4D continuum.

Field day Bungoma, Kenya



Photo: Remco Mur

<sup>2</sup> See: <http://2scale.org/>

## Case 2: 2SCALE

2SCALE is one of the larger agribusiness incubator programs in Africa, working with farmers and small-scale entrepreneurs in eight countries.<sup>2</sup> 2SCALE creates partnerships between farmer groups and private firms, which aim to increase inclusive development and food security. The program builds networks that connect farmers, buyers and intermediaries, enabling them to create and grow new businesses. It supports private firms to find business opportunities for sourcing products from, or selling agro-inputs to, smallholder farmers in Africa. The collaborative action research of the 2SCALE program and the Partnerships Resource Centre (PrC) – a joint project led by the Rotterdam School of Management and the Wageningen University in the Netherlands – composed impact pathways and ToCs tailored to 32 partnerships in East and West Africa. The tailored impact pathways and ToCs enable partnership facilitators to navigate the change processes generated by different partnerships. The ToCs reflect a strong interest in the modification of often rigid institutions, shaping the terms of inclusion, such as the ways in which business is done or the conditions under which smallholder farmers access markets and work with agribusinesses.

### *Space for innovation and entry points for intervention*

The 2SCALE program primarily negotiates and supports partnerships between companies and organized farmers. Companies or agribusiness clusters with the intention to work on inclusive development and food security lead the creation of interventions. Consequently, a partnering



Stakeholder workshop

process aiming at inclusive development is anchored in the business model(s) of the selected private-sector partner(s). Brokering these partnerships often starts with attempts to rectify more immediate problems faced by companies or agribusiness clusters. These may be related to arranging the supply of consistent volumes of a raw material from large numbers of smallholder farmers; ensuring the product quality for the manufacturing of food products tailored to the needs of low-income consumers; or acquiring and distributing inputs in areas with poor physical or organizational infrastructure. Simultaneously, the private-sector initiators in the partnership incrementally develop, test and implement novel technical and managerial solutions.

***The intermediate outcomes formulated; why and how this intervention can achieve impact (acknowledging the assumptions, risks and tensions)***

2SCALE has a program-level ToC, which is used to provide guidance to individual partnerships. 2SCALE is based on the assumption that greater market participation by small-scale local entrepreneurs will boost food security and agricultural trade in Africa. The program expects that market expansion will give farmers the incentive to invest in productivity-enhancing technologies, and partnerships will be able to address the challenges faced by local firms or agribusiness clusters entering the market place. 2SCALE considers partnership as instrumental to achieving outcomes and scale.

At the level of individual partnerships, specific ToCs focused on inclusive development. The ToCs identified and linked immediate and intermediate outcomes, which can (partly) be attributed as key to working partnerships, and revealed the sequential steps to reconfigure the terms of inclusion of smallholder farmers or rural communities. This part of the evolving process of inclusive development exposed the need to establish more defined intermediate outcomes that are within partnerships' sphere of influence. Examples of such intermediate outcomes are:

- Farmers have the capacity to negotiate and modify their contractual arrangements with companies;
- Local communities take part in strategic decision making;
- Associated farmers and the company agree to collectively invest in warehouses;
- The company adjusts its business model to the diversity of income-generating pathways in rural communities;
- The partnership between farmers and the company encourages financial institutions to offer tailored services.

***Testing the ToCs and organized feedback***

The ToCs include a maximum of three impact pathways. This was decided deliberately, to encourage partnership facilitators to look beyond their long list of agreed actions and reflect upon the strategic directions of the inclusive development process triggered by the partnership. The action research team asked partnership facilitators to validate the first sets

**Table 1: Summary of how the two intervention programs used ToCs to navigate towards impact**

	MAIZE	2SCALE
<b>Space for innovation and entry points for intervention</b>	Multi-stakeholder platforms co-define entry points for development interventions.	Business partner leads and engages in inclusive development.
<b>Intermediate outcomes and impact pathways</b>	Intermediate outcomes were broad and high level, jointly developed by CRP directors and impact pathway/ToC experts. Importantly, they were shaped by donor priorities and refined several times.	Intermediate outcomes for individual partnerships were proposed by research teams, validated by partnership facilitators and used to identify flexible markers for change.
<b>Testing ToCs and organizing feedback</b>	Feedback is organized via innovation platforms to give direction to research and mandate challenges, as well as the core competencies of the project.	Feedback is part of the validation by partnership facilitators and guides the identification of tailor-made markers for change.
<b>Reflection leading to flexibility and learning</b>	A rolling plan for external evaluation creates room for manoeuvre and flexibility in action research, and encourages exchange of practical experiences.	ToCs are used in priority-setting and strategizing in the constant navigation of partnerships and are disconnected from M&E for accountability.

of impact pathways. The validated and frequently revised ToCs are currently used to compose a limited set of change markers associated with the partnership’s and impact pathway’s specific immediate and intermediate outcomes. The validation process also helped to assemble information about handling risks, for example, unanticipated competition in the end-use markets and tensions between partners created, for instance, by farmers looking for buyers outside of their arrangement with a single company. Discussions based on the ToCs identified those risks and tensions, and investigated how addressing these can become part of the partners’ actions.

**Reflection leading to flexibility and learning**

Purposefully, ToCs at the level of individual partnerships were not included in the regular monitoring and evaluation (M&E) protocols, which examine a selection of outcomes at the level of targeted beneficiaries. The function of the ToCs in the implementation of 2SCALE is to appreciate the constant navigation of partnerships and capture the strategic choices made. Successfully achieving this requires a focused and flexible ToC, which recognises that inclusive development is largely dependent on how partnerships interact with the dynamics in markets, businesses and rural communities. The use of a ToC supports a procedural take on managing impact; interventionists use ToCs to anticipate enabling, or constraining, conditions for an envisioned process of inclusive development, which allows them to report to partners, managers and sponsors on how they managed an often whimsical change process.

**Lessons learned**

It is relevant to find a connection between more generic ToCs at the program level and ToCs grounded and situated in specific projects or partnerships. ToCs may not be detailed enough to provide specific lessons or hypotheses that can be tested within the situated project engagement. However, strategizing at both levels has potential to generate interest-

ing tensions that can become part of the learning process. Rather than looking for a generic ToC, we propose a more systematic comparison of the situations of different interventions within similar programs, thus including the context in which these interventions navigate and the resulting risks and tensions of this context.

One cannot predict the route to impact, but one can compose plausible story lines explicating the assumptions. Developing and using ToCs takes time and requires a deliberate effort to monitor actions and changes, to refine and revise where necessary – in order to allow flexibility in the use of ToCs – and to be relevant for strategizing and priority-setting in intervention programs. Connecting practitioners with researchers makes it possible to use more intermediate theorisations tailored to situated and specific impact pathways. Action research helps to refine and deepen the understanding of the generative processes made visible by intermediate outcomes.

Creating specific learning outputs and lessons that are available for broadly sharing requires a dedicated effort on the part of the project leadership, as well as support from donors. Within large distributed programs that are connecting technical and institutional capacity development, the learning and knowledge creation of the project’s impact and ToC may be embodied in staff members’ tacit knowledge. The dynamics and evolving change processes captured by ToCs may contrast with the donors’ demands for the accountability of projects and consistent reliance on a relatively rigid log-frame approach to determine/agree/monitor project activities and outputs. Moreover, for many scientists and project managers, failure is not an option. Despite the opportunity to learn from mistakes, project leaders fear that many donors still find failure difficult to accept. Therefore, it is relevant to make explicit choices about how to relate ToCs to M&E efforts. The challenge is to determine how the use of ToCs can better motivate and generate learning, whilst enabling flexibility to generate hypotheses and research questions as opportunities present themselves, during the interventions’ navigation towards impact.

## References

van Es, M., Guijt I., Vogel I., 2015. HIVOS ToC Guidelines: *Theory of Change thinking in practice. A Stepwise Approach*. HIVOS, The Hague, The Netherlands.

Maru, Y., Sparrow, A., Stirzaker, R., and Davies, J., 2016. Integrated agricultural research for development (IAR4D) from a theory of change perspective. *Agricultural Systems*. In press.

Vellema, S., Ton, G., de Roo, N., and van Wijk, J., 2013. Value chains, partnerships and development: Using case studies to refine programme theories. *Evaluation*, 19(3): 304-320.

Waters-Bayer, A., Bernhardt, M., Boccock, P., Dugan, P., Lohmann, J., and Sanyang, S., 2013. *The Feldafing Principles for Enhancing Agricultural Innovation Systems*. German Agency for International Cooperation (GIZ) / CGIAR Consortium, Eschborn, Germany. Available at: [http://www.etc-international.org/annual-report-2013/Afbeeldingen/Feldafing%20Principles\\_14\\_04\\_14%20.pdf](http://www.etc-international.org/annual-report-2013/Afbeeldingen/Feldafing%20Principles_14_04_14%20.pdf) [Accessed: May 1 2017]

Maize farming in Bungoma, Kenya



Photo: Remco Mur

## Authors' contacts

<b>Sietze Vellema</b>	Wageningen University and Research (WUR)	<a href="mailto:sietze.vellema@wur.nl">sietze.vellema@wur.nl</a>
<b>Yiheiyis Tadele Maru</b>	Commonwealth Scientific and Industrial Research Organisation (CSIRO)	<a href="mailto:Yiheiyis.Maru@csiro.au">Yiheiyis.Maru@csiro.au</a>
<b>Julia Ekong</b>	ICRA	<a href="mailto:julia.ekong@icra-edu.org">julia.ekong@icra-edu.org</a>
<b>Paul McNamara</b>	University of Illinois	<a href="mailto:mcnamar1@illinois.edu">mcnamar1@illinois.edu</a>
<b>Ann Waters-Bayer</b>	PROMoting Local INNOVation in ecologically oriented agriculture and NRM (Prolinnova)	<a href="mailto:waters-bayer@web.de">waters-bayer@web.de</a>
<b>David Watson</b>	International Maize and Wheat Improvement Center (CIMMYT)	<a href="mailto:D.Watson@cgiar.org">D.Watson@cgiar.org</a>
<b>Jan Brouwers</b>	Wageningen University and Research (WUR)	<a href="mailto:jan.brouwers@wur.nl">jan.brouwers@wur.nl</a>



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During the seminar, participants dug into critical issues surrounding AIS, aiming to trigger new thinking, as well as collaboration between participants, to influence agricultural research and development policy and practice.

The seminar resulted in five Working Papers:

- Do theories of change enable agricultural innovation systems to navigate? A reality check and comparison from practice.
- Systems Analysis in AIS: potentials and pitfalls.
- Agricultural Research for Development to Intervene Effectively in Complex Systems and the implications for research organisations.
- Diversity, inclusion and Gender Dynamics in Agricultural Innovation Systems.
- The contribution of AIS approaches to achieving impact at scale: intentions, realities and outlooks.



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