

# Anchoring innovation methodologies to ‘go-to-scale’; a framework to guide agricultural research for development

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## ARTICLE INFO

**Keywords:**  
Anchoring  
Out-scaling  
Up-scaling  
Innovation platform  
Farmer research group  
Agricultural Innovation System

## ABSTRACT

Research for development (R4D) projects increasingly engage in multi-stakeholder innovation platforms (IPs) as an innovation methodology, but there is limited knowledge of how the IP methodology spreads from one context to another. That is, how experimentation with an IP approach in one context leads to it being successfully replicated in other contexts. To inspire development actors to consider the fit of an innovation methodology for a context, following work on anchoring for scaling, we developed a framework for networking-, methodological, and institutional anchoring and applied it to a R4D IP in order to test the value of such an anchoring approach for understanding the scaling of innovation methodologies such as IP. We selected a R4D project with a Farmer Research Group-Innovation Platform in Ethiopia, whose technical output and methodological approach were greatly appreciated by the actors involved. Using the anchoring framework, the executed or non-executed tasks were identified. Besides, the embedding of the methodological experiment the potential up-scaling and out-scaling were systematically analyzed. The analysis yielded the strengths and weaknesses of the anchoring work done so far to scale the innovation methodology used, and provided concrete suggestions of how to proceed if an innovation project considers ‘going to scale’. We recommend R4D projects to valorize their work and pay more explicit attention to anchoring. With a flexible, multi-pronged anchoring approach and continuous scanning of the progress made in context, more R4D projects and their associated innovation methodologies can ‘go to scale’.

## 1. Introduction

Scientists and donors are increasingly embracing the Agricultural Innovation System (AIS) perspective, underscoring the need for multi-actor learning and coordinated action to create solutions fit and affordable for farmers, value chain actors, and government. One methodology to create multi-stakeholder learning and coordinated change is the Innovation Platform (IP) methodology. Research conducted on the process of IP implementation demonstrates the potential of the interactive IP methodology in developing effective technical, organizational, and institutional innovations at farm level and within value chains (Houkonnou et al., 2012; Houkonnou et al., 2018; Van Paassen et al., 2014). Furthermore, IPs provide the opportunity for key actors to learn about more interactive problem-solving processes, and they see what type of innovation methodology best fits their context, establishing new roles and relationships for innovation, hence towards building the systemic capacity for innovation. Unfortunately, many IP research projects see the IP methodology as a handy ad-hoc means to develop technical solutions for scaling, rather than to investigate the

performance of the IP methodology in-context and consider the potential for scaling of the methodology itself (Schut et al., 2016b, 2018), which also requires attention to embedding it in other institutional context than the context it was originally developed (Neef and Neubert, 2011; Klerkx et al., 2017).

This paper is about anchoring such a methodological innovation experiment in its institutional context, to fine-tune the design and also to prepare for potential scaling. It concerns the networking to get key implementors of the dominant regime involved in the experiment to test what would work, and simultaneously connect with key authorities who decide on the conduciveness of the context for innovation. Anchoring is a ‘pre-stage’ for scaling. To achieve ‘impact at scale’, the process of ‘scaling’ must become a key concern of scientists, development agencies, governments, and donors (Joly et al., 2015; Wigboldus et al., 2016). The literature distinguishes two components of scaling processes: out-scaling and up-scaling (e.g. Hermans et al., 2017). Out-scaling (horizontal scaling) refers to the large-scale duplication and adaptation of innovations to benefit more people or larger geographic areas (Aw-Hassan, 2008; Nederlof et al., 2011; Westley et al., 2014;

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<https://doi.org/10.1016/j.agsy.2020.102810>

Received 27 February 2019; Received in revised form 27 February 2020; Accepted 27 February 2020

Available online 06 May 2020

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Wigboldus et al., 2016). Up-scaling (vertical scaling) refers to the institutional change so as to provide a conducive environment for the innovation and its duplication, e.g. a change of discourse and work procedures, conducive policies, and incentive structures (resources for implementation, remuneration, career paths) (Nederlof et al., 2011; Westley et al., 2014). Out- and up-scaling mutually influence each other, but their relative importance in the change process depends on the complexity of the innovation, the context, and the actors involved.

To know how to improve the anchoring of a methodological innovation in a context, and to prepare for potential scaling, we studied the literature to develop a framework for anchoring. Inspired by theories on niche-regime interaction, notably literature on strategic niche management (Elzen et al., 2012; Loeber, 2003; Loorbach and Rotmans, 2010; Raven et al., 2008; Schot and Geels, 2008), and innovation processes (Leeuwis, 2004; Kivimaa and Kern, 2016; Klerkx et al., 2009), we developed the ‘anchoring framework’ and selected a well-performing IP project in Ethiopia to test the value of the framework. The aim of this paper was to see whether the framework would enable us to study an anchoring process of an innovation methodological experiment, in such a way that we get insight into the strengths and weaknesses of the anchoring strategy, plausible effects, and steps forward, to ensure a good institutional fit and potential scaling.

In the next sections, we first elaborate our framework for anchoring, the research methodology, and then demonstrate the use by assessing the anchoring activities and strategies of the selected IP project in Ethiopia.

## 2. Theoretical framework

Authors writing about strategic niche management, innovation processes, and anchoring mainly focus on experimental projects as a way to nurture path-breaking innovations (Leeuwis, 2004; Klerkx and Leeuwis, 2008; Klerkx et al., 2009; Loorbach and Rotmans, 2010; Raven et al., 2008; Schot and Geels, 2008; Smith and Raven, 2012). Inspired by Loeber (2003), Elzen et al. (2012) focused on embedding or anchoring as a pre-phase for scaling. From their perspective, anchoring concerns the linking process between niches and regimes: how anchoring activities and strategies employed by niche actors penetrate and influence the socio-technical regime. Anchoring refers to a continuous process of probing new connections between the regime and the niche, until a niche practice is translated into a regime component. Based on work of Geels (2004), Elzen et al. (2012) distinguished three types of anchoring: network-, technological-, and institutional anchoring. They highlight similarities with (Geels, 2004), who identified three dimensions of innovation: the human actors, the organization, and the socio-technical system with its fixed artifacts, procedures, norms and rules that guide behaviour. Elzen et al. (2012) studied the anchoring of an energy harvesting technology, but as we focus on the anchoring of an innovation methodology, we will not use the term ‘technological anchoring’ but rather ‘methodological anchoring’. A mix of network-, methodological-, and institutional anchoring is required for out-scaling and up-scaling. Institutional anchoring is critical for up-scaling.

To assess the potential success of anchoring and scaling, it is critical to look at (a) the dimensions where the niche and the regime differ, are not aligned, or in conflict (Muilerman et al., 2018); and (b) the benefits, costs, and threats that the niche features pose to the different regime actors (Schut et al., 2018, 2019). The more the regime and niche share similar rules and features, and/or provide benefits to regime actors, the easier the anchoring will be. In our study, the dominant way of supporting agricultural innovation (the regime) was the Transfer-of-

Technology (ToT) orientation, while the novel way (niche) embraced the interactive innovation system model. These innovation approaches have contrasting rules and features regarding their focus, conception of agricultural innovation, perception of knowledge development, intervention and learning methods, and the roles assigned to actors (Schut et al., 2016a).

For our anchoring framework, we identified essential transversal, network-, methodological, and institutional anchoring activities highlighted by the relevant strategic niche management or innovation literature (see Table 1).

- Certain so-called transversal activities support all three types of anchoring (dark grey part, Table 1), such as preparing a vision document highlighting benefits for the different actors, methodological guidelines, mass communication, and generation of persuasive evidence of ‘proof of concept’ in specific contexts.
- Network anchoring activities concern efforts to find and connect to strategic actors at user, implementation, and decision-making levels (Minh et al., 2014).
- Methodological anchoring activities are efforts made to propose new products or principles for practice, and to support regime actors to learn, try, and adapt the rules for application in their context (Klerkx and Leeuwis, 2008; Nederlof and Pyburn, 2012). This requires brokers, trainers, and/or facilitators with the appropriate knowledge and skills. Training, workshops, experience sharing, and joint experiments can be some strategies.
- The institutional anchoring requires strategic lobbying and negotiation at the level of key regime authorities: the provision of a stimulating vision highlighting benefits to key authorities, backed by evidence about the effectiveness of the proposed novelty, timely advice, and negotiation with key authorities who are able to create new formal rules that provide conducive policies, incentive structures, and stimulating funding (Houkonnou et al., 2018; Kivimaa and Kern, 2016; Klerkx et al., 2013; Nederlof et al., 2011; Schut et al., 2016a;). Institutional anchoring also occurs through continued and widespread application of the (adapted) methodological practices, which helps create informal rules, routines, and mind-sets increasingly known, and applied by a growing number of actors.

Though many projects start with networking, anchoring is not linear, but an entwined, flexible process.

Several activities highlighted in Table 1 simultaneously or indirectly contribute to different anchoring earmarks, e.g. ‘monitoring for learning’ simultaneously contributes to methodological anchoring (learning and adapting the methodology for the context) and institutional anchoring (creating a change of beliefs and culture). As a result, the reader might see ‘overlapping activities’ and question their place in a certain category. It shows the entwinedness. The earmark of the table is however to identify tasks that need to be fulfilled, to accomplish adequate anchoring and identify gaps that might trigger negative backlashes.

The aim of the study was to develop a framework that would enable us to show the critical anchoring activities of an innovation mediation project, in such a way that we get insight in the strengths and weaknesses of their strategy and the plausible effects it has on future scaling. To attain this objective, we used the framework to study the situation of an IP project in Ethiopia to answer the following research questions:

- What network-, methodological, and institutional anchoring tasks were performed by the IP-based project, at the end of the project

**Table 1**  
Overview of useful anchoring activities/strategies.

<p><b>Transversal support Activities: Communication and documentation needed to support all anchoring activities</b></p> <p><i>T.1. Persuasive vision</i> highlighting relative benefits of the promoted change</p> <p><i>T.2. Technological/methodological guidelines</i> to inform potential partners for trial and implementation</p> <p><i>T.3. Mass communication</i> e.g. leaflets, video's, website about the promoted change at regime, implementation zone, and local user level</p> <p><i>T.4. Generation of supportive evidence</i>, e.g. research reports with transparent, consistent data on the implementation process and impact</p>		
<p><b>Network Anchoring tasks (N)</b></p>	<p><b>Methodological Anchoring tasks, important for operationalization innovation concept in specific context, and out-scaling (M)</b></p>	<p><b>Institutional Anchoring tasks, important for up-scaling (I)</b></p>
<p><b>At the level of potential users/beneficiaries in niche and beyond</b></p>		
<p><i>N.1. Inform potential beneficiaries</i> in and around the intervention area about the proposed change via mass media, presentations, invitation to field days</p> <p><i>N.2. Identify and mobilise capable persons</i> to represent and organise collaboration with beneficiaries</p>	<p><i>M.1. Organise training</i> for enabling actors to understand the concept and principles of practice</p> <p><i>M.2. Organise practical experimentation</i> enabling actors to practise in context, adapt the methodology where deemed fit, and develop skills</p>	<p><i>I.1. Ensure continued practice</i> for institutionalising new beliefs and informal rules of practice</p> <p><i>I.2. Create constituency for political support</i> by continued mass communication reinforcing new beliefs and commitments</p>
<p><b>At the level of potential partners for implementation niche and out-scaling technology or methodology</b></p>		
<p><i>N.3. Inform organizations</i> in and around area of intervention about the proposed change via mass media, presentations, invitation to field days, and knowledge sharing events.</p> <p><i>N.4. Identify and connect to organizations</i> critical for the implementation</p>	<p><i>M.3. Organise training</i> enabling actors to understand the concept and principles of practice</p> <p><i>M.4. Organise practical experimentation</i> enabling actors to practise in context, adapt the methodology where deemed fit, and develop skills</p>	<p><i>I.3. Ensure continued practice and monitoring</i> for institutionalising new beliefs and informal rules of practice</p> <p><i>I.4. Create constituency for political support in implementing organizations</i>, through continued mass communication reinforcing new beliefs and commitments</p>

(continued on next page)

**Table 1** (continued)

<p><i>N.5. Identify and mobilise key officers for implementation who are open and able to drive implementation and persuade colleagues.</i></p>	<p><i>M.5. Organise monitoring, evaluation for learning, and adaptation for involved and potential future implementers about the novelty, to nurture their knowledge, experimental development, and appreciation in context</i></p>	
<p><i>N.6. Identify and mobilise key officers with good connections for lobbying at level of regime authorities</i></p>	<p><i>M.6. Transfer ownership for implementation, mobilization of own resources and finances</i></p>	
<p><b>At the level of key authorities' incumbent regime able to create new formal rules (up-scaling)</b></p>		
<p><i>N.7. Inform key authorities of the regime about the proposed change via mass media, invitation to field days</i></p>		<p><i>I.5. Create events for awareness-raising and dialogue with key actors of the incumbent system, who can set the agenda, build coalitions, and articulate policies and incentive systems (formal institutions)</i></p>
<p><i>N.8. Identify and connect with key organizations of incumbent regime, with authority to set policies and institutional rules for regulatory framework, incentives and sanctions</i></p>		<p><i>I.6. Provide a persuasive vision/narrative and research reports on the adapted methodology, highlight benefits for different actors, to convince key actors and support them to persuade required coalition partners</i></p>
<p><i>N.9. Identify key decision-makers and advisors, who are respected but open for improvement, dare to take political risks, dynamic, and communicative</i></p>		

phase?

- To what extent can the use of the framework provide insight in the strengths and weaknesses of the anchoring strategy of the project and plausibly explain the achieved level of out- and up-scaling?
- Could use of the framework lead to useful advices for anchoring to attain an experimental fit in context, and a conducive institutional environment for scaling?

### 3. Case selection and research method

#### 3.1. Case selection

The aim of the research was to develop and test a framework for

anchoring a Farmer Research Group-Innovation Platform (FRG-IP) methodology used/experimented by projects to achieve 'impact at scale'. Such a framework would enable projects to design strategic anchoring at the start of the project, or assess projects on the likelihood for them to achieve 'impact at scale'. To test the framework, it was essential to find an AIS project that performed well, attained short term results (capacity building for interactive learning), and if possible also worked on scaling.

At the beginning of the preliminary study in 2014, resource persons in the southern zone of Tigray regional state were contacted to identify projects operationalizing the AIS perspective in the Ethiopian context, where linear ToT is predominant. When the actual data collection started in 2015, only a few projects had begun to work in-line with the

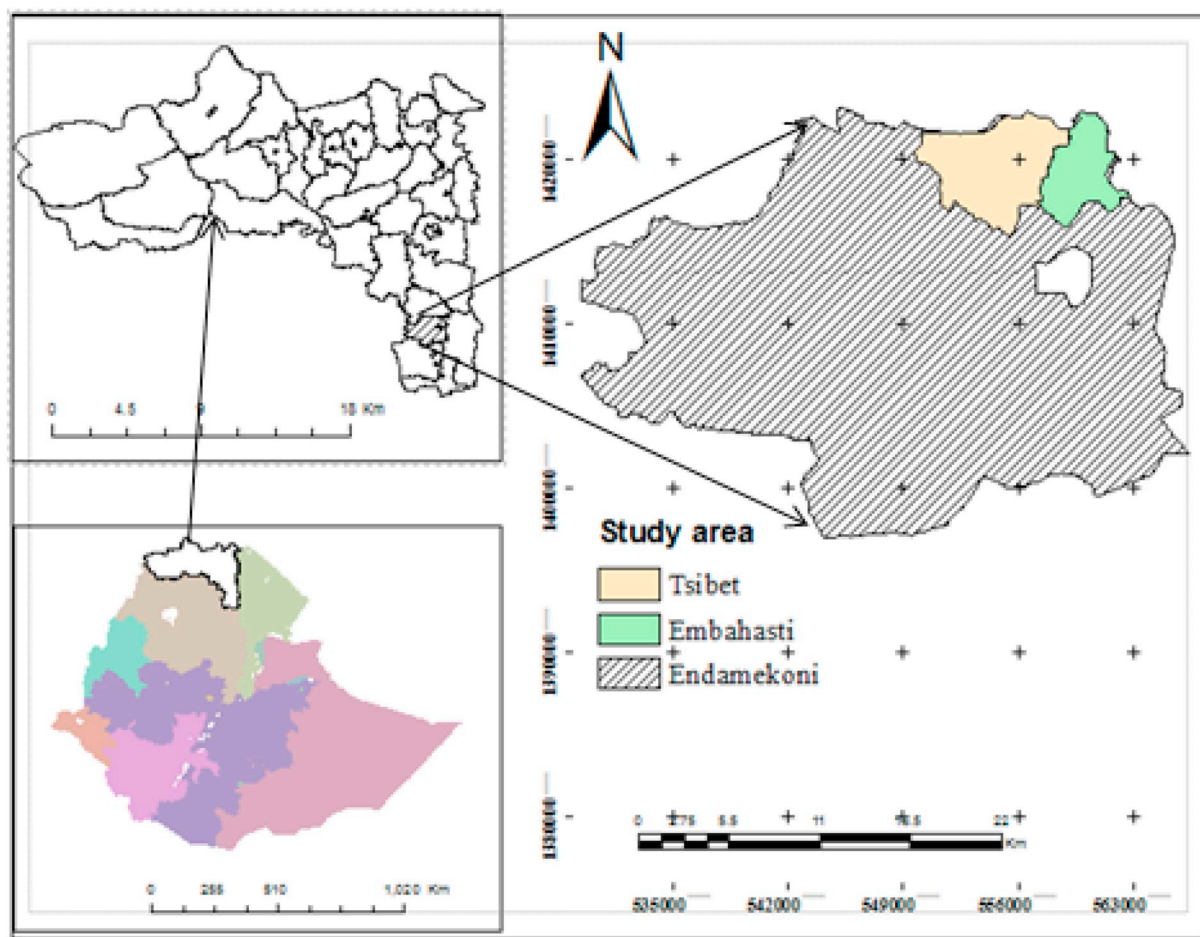


Fig. 1. Map of the study area: Endamohoni Woreda, Tigray Regional State, Ethiopia.

AIS paradigm. The Africa-RISING-Ethiopian Highland project was the only project with a considerable outcome, applying the FRG-IP approach. This project is one of the three research-for-development projects of the Africa Research in Sustainable Intensification for the Next Generation (Africa RISING) program, which is financed by the United States Agency for International Development (USAID) as part of the U.S. government's Feed the Future (FtF) initiative (ILRI, 2016). Two of the projects are implemented in West Africa, and in East and Southern Africa, and they are led by the International Institute of Tropical Agriculture (IITA). In the Ethiopian highlands, the project is led by the International Livestock Research Institute (ILRI) and is implemented by nine CGIAR (Consultative Group for International Agricultural Research) centers (see Mekonnen and Thorne, 2015 for details). In this article, we use the acronym AR when referring to the specific Africa RISING-Ethiopian Highland project.

The AR project was implemented in four regions and in eight kebeles (wards), among which two kebeles (Tsebet and Embahasti) were in Tigray region (ILRI, 2013). Ethiopia is administratively divided into different regional states that have their own constitutions and considerable sovereignty. Regions are divided into zones, woredas (districts) and kebeles (wards) (Yilmaz and Venugopal, 2008). This research is undertaken in Tigray regional state. The study area (the woreda and the kebeles) is shown in Fig. 1.

Though the AR project, like many AIS inspired projects, focused on

the elaboration and design of their FRG-IP approach and did not (yet) explicitly consider scaling of its innovation approach, we deemed it worthwhile to develop an anchoring framework to assess the likelihood that these projects would 'achieve impact at scale' and inspire development actors to pro-actively work on the fit of a proposed innovation methodology for the larger context and the potential for scaling. This is to overcome the widespread problem that donors finance experimental projects, but with little concern for long-term impact. This research would (a) enable us to test the framework, and (b) assist projects like AR to start critical reflections as how to strategically engage stakeholders at an early stage and 'achieve impact at scale'. The regular agricultural research and extension system in Ethiopia is predominantly ToT-oriented (the regime). So, we consider the FRG-IP of the project, that is based on the AIS perspective, as a niche.

According to the project officers, the main objective of AR was to achieve sustainable agricultural intensification. Aimed at creating a context-specific and demand-driven innovation system, AR started its activities in 2012 by conducting various diagnostic assessments among which a Participatory Community Analysis (PCA) was the main (Ebrahim, 2016). The purpose of the PCA was to identify entry points, constraints, and opportunities, and to assess the potential of different interventions and technologies in addressing priority constraints.

Based on project documents and field research on innovation intermediation processes, AR operationalized the AIS perspective as a

FRG-IP. Subsequently, in February 2014, operational and strategic IPs were established at kebele and woreda level, respectively. In the same year, commodity-based FRGs were formed at the grassroots level.

The main objective of the operational IP was to foster effective community participation during opportunity identification, planning, and implementation in order to enhance farmer learning and ownership. The main purpose of the strategic IP was to provide strategic direction, advice, support to operational IPs, but also to learn from them (regarding the farmer and other stakeholder needs), in order to develop technologies, practices and policies (Ellis-Jones et al., 2014).

The FRGs were established to undertake participatory action research. The ultimate aim of the action research was to deliver integrative research outputs for specific area and farmer needs, and improve food, nutritional security, incomes of agricultural households in the Ethiopian highlands through increased productivity of crop, livestock, and better NRM practices (Eg: tree Lucerne; a multipurpose used as fodder and fertilizer trees). See Section 4.1. and Fig. 2 for details on the members of the IPs and FRGs.

Depending on their roles, some of the IP members at both kebele and woreda levels were selected as members of the technical committees. The technical committees (TCs) served as driving forces and bridges between the woreda- and kebele-level IPs (see Fig. 2). While the woreda technical committee (WTC) members participated in kebele-level IP meetings, the kebele technical committee (KTC) members participated in the woreda-level IP meetings. The WTC members closely monitored and evaluated the activities of the project and selected the most successful practices (the most significant changes) from the interventions of the project for scaling out/up.

### 3.2. Research design

According to Yin (2004), the case study method is suitable for research with a descriptive and/or explanatory question. This study aimed to explore and assess the networking, methodological, and institutional anchoring processes; thus, a case study was the appropriate method. In-depth interviews were done, as this is a powerful method to generate valuable descriptions and interpretation from the viewpoint of people (Ritchie and Lewis, 2014). According to Yin (2014), interviews can be made with a single person and/or with a group.

Purposive and snowball sampling were applied to select key informants from the project and other stakeholders working as main partners at different administrative levels, based on their role and level of participation in the project activities. We assumed the most active actors would also be most concerned with the sustainability and scaling of the approach. As mentioned earlier, actors in the TC participated/contributed relatively more, though each was not equally engaged. Members with prominent roles in the project (engagement in the IPs and FRGs) were selected as respondents, regardless of their location. Interviewees included AR project officers, implementing partners from the region (Mekelle, the capital city of the Tigray region), surrounding woredas, Endamehoni woreda and the project sites Embhazti and Tsibet kebeles, and regime actors relevant for scaling (see Table 2 and Appendix 1 for details). Furthermore, as anchoring of the new way of doing innovation also depends on the appreciation of the farmers, in-depth individual interviews with four FRG members who participated at kebele- and woreda-level IPs, complemented with an in-depth group interview with seven representatives of the most active FRGs, was done.

In-depth individual interviews were made with regime actors relevant for scaling, specifically the head of Tigray Bureau of Agriculture and Rural Development (TBOARD), and the manager of Alamata Research Centre. A change from the ToT to an AIS-oriented innovation

approach requires a multifaceted transformation which cannot be done without a conducive institutional environment. Hence, asking those who have the position to enforce institutional changes is important, and this is the reason the higher officials were interviewed in this study.

To collect the primary data, interviews were executed with individuals and groups, depending on the level of involvement and location. Open-ended questions were prepared to explore the executed anchoring activities and applied strategies, and analyze perceived anchoring signs (For details refer to Appendix 1). Interviews were recorded and transcribed. Secondary sources such as minutes of the IP meetings, reports, reviews, and other project documents were also used. Data collection for this study was made between mid-September 2016 and mid-March 2017 (1 year after project completion).

Statements from the interviews and secondary data were coded and analyzed with the defined theoretical framework.

## 4. Findings: anchoring strategies and effect

### 4.1. Network anchoring

In the last decade, CGIAR centres increasingly embraced the AIS approach. Being linked to CGIAR, the AR project envisaged to implement the AIS approach through an FRG-IP approach. AR officers attributed the general low uptake of agricultural technologies to the government ToT approach, disseminating Good Agricultural Practices (GAPs) without consideration of the local biophysical and social-economic circumstances. The aim was therefore to establish a sustainable intensification approach through more participatory research in a predominantly ToT-oriented regime, and, where needed, organize seed-multiplication, improved access to technologies (e.g. improved seed and fertilizer) and marketing.

Interviews with AR project officers indicated that the main network anchoring strategy of the project (the niche) was to engage governmental organizations (from the regime) at different administrative levels as partners for project implementation. The project started consultations with the zonal office of agriculture and the Endamehoni Woreda office of agriculture and rural development to introduce the purpose of the project and discuss on site selection. Together with the woreda office of agriculture and rural development, the potential partners were identified. From the regime, the agricultural research centres working in Tigray (one under the national and two under the regional research mandate), Mekelle university, plus the regional, woreda and kebele agricultural offices were invited to participate in the PCA. As implementing partner of the AR, already engaged in the AR project sites, the CIP project became part of the PCA.

The partners from the regime and the niche teamed up to organize a PCA at each selected kebele, with about 30–40 farmers. Then kebele- and woreda-level IPs were established, among which the key actors were selected as technical committee members. Most members of the PCA team became members of the Woreda technical committee, which met regularly to prepare and monitor the execution of all project activities (see Fig. 2). Next to them, the IPs also included representatives of other organizations, such as Affairs Offices (social, youth, women) and Sector Representatives (health, education, water, land), and woreda and zone administration offices from the regime. Besides the actors from the government, focal persons of projects working in the area also became members of the IPs (e.g. Household Asset Building Program (HABP), Agricultural Growth Project (AGP) and CASCAPE. Organizations delegated different employees in the IPs. While some organizations were represented by higher level officials (e.g. Mekoni agricultural research centre, TVET college), others such as TARI and



**Table 2**  
Summary of the organizations/people contacted, membership in the IP structure and sample size.

Membership in the FRG-IP structure	Organizations/people contacted	N
<b>AR project officers</b>		
Not members of specific FRG-IP	AR project officers in the International Livestock Research Institute (ILRI), in Addis Abeba	4
Members woreda-level IPs	AR project site coordinator and assistant coordinator at Endamehoni woreda	2
<b>Implementing partners</b>		
Members woreda-level IPs	CIP-project coordinator at Mekelle, a researcher representing Tigray Agricultural Research Institute (TARI) at Mekelle, a researcher from Alamata Research Centre, Endamehoni woreda extension office head, Graduation with Resilience to Achieve Sustainable Development (GRAD) project coordinator at the woreda  (all members TC)	5
Members kebele-level IPs	Two Development Agents (DAs) from the two project sites (Embazti and Tsibet kebeles), and four farmers  (DAs are members of the TC; farmers are not member TC)	6
Members in FRGs	The project beneficiary farmers from the project kebeles (Embazti and Tsibet)	7
<b>Regime actors, relevant for scaling</b>		
Not member of the FRG-IP; but well-informed about the project activities, and involved in some events of the project	The manager of Alamata Research Centre	1
Not member of the FRG-IP and not directly involved in the project activities, but informed about the project activities	The Head of TBOARD	1
Total		26

Mekelle University were represented by other employees (see Fig. 2); the director of the former and college dean of dry land agriculture and natural resources of the latter were only informed about the project approach and specific activities. AR considered the IP as the essential tool to attain concrete collaboration.

Various crop- and theme-based farmer research groups (FRGs) were established, such as the apple, Lucern tree, Oat-Vetch forage, fava-bean, wheat, potato, Participatory Varietal Selection (PVS) and seed multiplication FRG. The number of the farmers participating in each FRG varied from 5 (PVS and seed multiplication) to 29 (wheat). The AR

team and other researchers facilitated and supported the FRGs and ensured a close link with the kebele- and woreda-level IPs. To ensure the linkage, FRG representatives participated in kebele IP meetings; to put issues discussed at the FRG on the agenda, representing the farmer community.

The reasons for involving all these actors, as expressed by AR officers, were many. The prime reason was to gather stakeholders with different knowledge and skills for joint action research at the project sites. The second was to increase the feeling of ownership. Finally, the engagement of these actors was assumed to lead to diffusion and

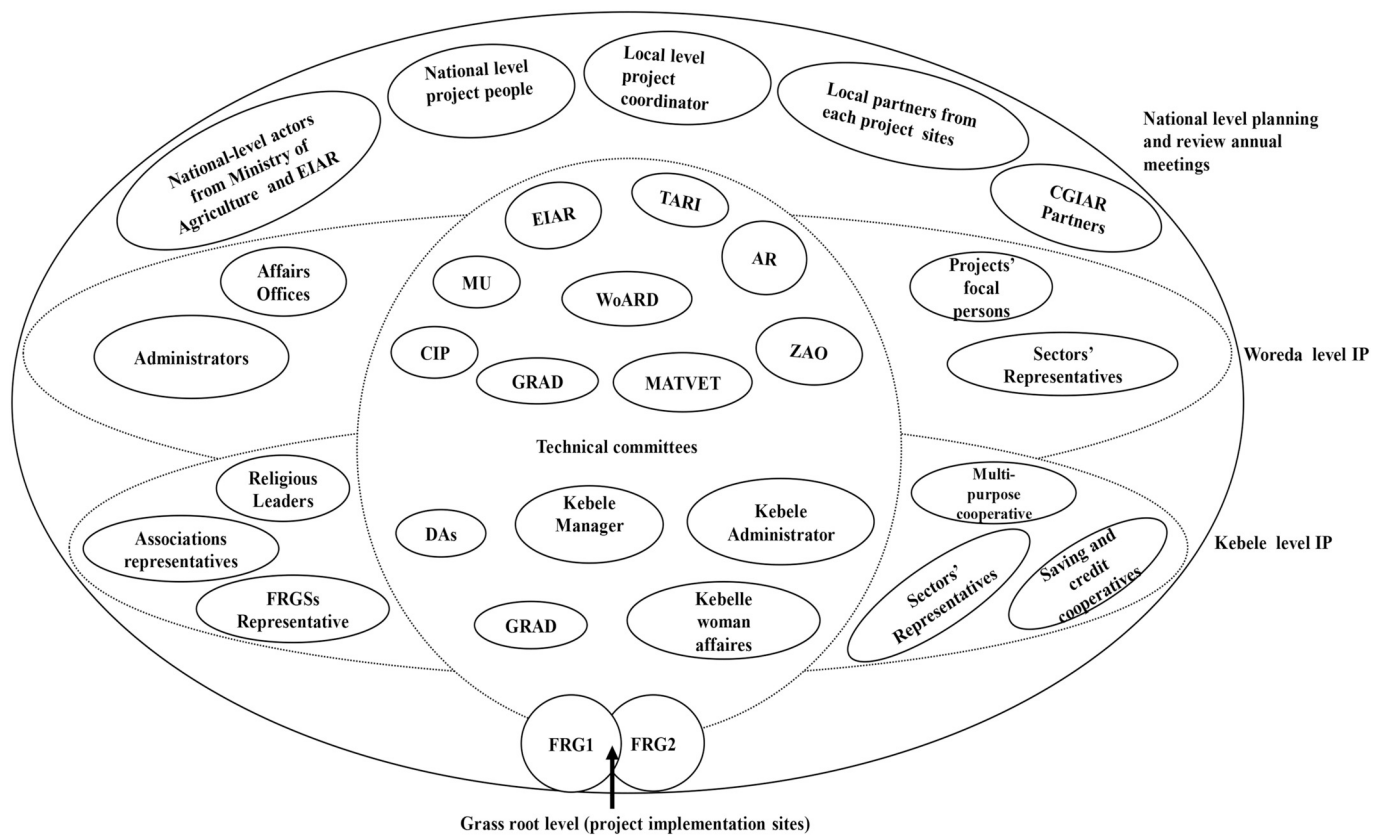


Fig. 2. Networking for implementation, across different administrative levels adapted from Ellis-Jones et al. (2014:13).

adoption of the created technical and organizational innovations in the various home organizations and beyond. Yasabu (2015), one of the project officers, explained that the project intentionally engaged various actors right from the start, to promote ownership and thus strengthen the sustainability and uptake of the introduced technologies, management practices, and institutional systems.

The next network activity of the AR project was communication, to create discussion and where possible support for the sustainable intensification and FRG-IP approach. Radio broadcasts and leaflets were prepared, and at different phases of the FRG research, field days were organized to inform and critically discuss technical as well as organizational innovations with other farmers communities and key actors of organizations at kebele level, woreda level, and beyond. At this point, the project made sure, they included higher level officials, as illustrated by the quote of a research centre representative: ‘AR does not only involve researchers, but it also engages research centre managers in important events of the project; so there is a feeling of being part of the project activities.’ Interviews and field day reports showed that issues raised during these events mainly concerned the introduction and local adaptation of farm technologies, rather than the value of the interactive FRG and IP approach. However as many actors involved highly appreciated the FRG-IP approach, the word was spread. The IP members, particularly those from research and extension organizations, reported that they share the Most Significant Change (MSC) stories about the FRG-IP in various government meetings, especially at the Agricultural Development Partners Linkage Advisory Council (ADPLAC) meetings. A woreda-level extension officer said, ‘In different government meetings we participate in, we promote the approach as a best practice that has to be taken up.’ As most of the IP members work in regular research and

extension organizations, we can consider them hybrid actors (part of the niche and the regime) promoting innovation.

#### 4.2. Methodological anchoring

The Innovation Platform guideline for AR partners in Ethiopia (Lema and Cullen, 2014) and the manual for innovation platform facilitators at the AR research sites were developed by the AR team in Addis Abeba (Lema, 2014). Training on the research and development approach of the project (AIS concept and the IP methodology, PCA tools, facilitation as well as interactive monitoring and evaluation methods (e.g. MSC approach) was provided to the partners in the PCA team, before undertaking the diagnostic study. The training on IP facilitation was organized in Addis Ababa, to cater to the AR project site team and major partners (Lema et al., 2014; Ebrahim, 2016; ILRI, 2016). In this way, the AR team members (AR coordinators and CIP Tigray coordinator) were prepared for their role as AR facilitators.

To build capacity and ownership, leading roles were given to the actors from the regime. Accordingly, the head of WoARD was invited to act as chairperson of the IPs, while the representative of TARI would coordinate the M&E activities. Another researcher was appointed as communication champion, to ensure proper and frequent internal dialogue, and to document outreach activities and learning events.

Apart from the training, methodological anchoring was mainly executed through practical experimentation. The experimentation aimed to serve the capacity building (Yasabu, 2015), and test whether the FRG-IP methodology would fit the local context. A project officer in Addis Abeba noted, ‘We aim to validate not only the technologies, but also the interactive research and innovation approach.’ The majority of



the IP members agreed that the IPs served as a forum for learning about AIS and IP methodology and how to operationalize this in concrete planning, collaborative action, monitoring, and evaluation. They reported that, for them, IP meetings provided opportunities to learn how to do things differently, how to organize and facilitate an interactive process. One of the IP members, delegate of a research centre, noted, 'When you work with AR, you learn a different way to collaborate with partners in research.' Government officers appreciated the approach. A researcher underscored, 'It is crucial to involve farmers and other local stakeholders to identify the real problems from their perspectives, to come up with the appropriate solution, to develop joint plans and collaborate for implementation.'

The individual interviews with the kebele-level IP members and the group interviews with FRG members revealed farmers' appreciation of the FRG-IP structure. Farmer IP members noted, 'AR is mainly special because of the approach that highly engaged farmers for the identification of problems, the planning and implementation trials, monitoring and evaluation.' IPs enhanced farmer-to-farmer-learning, created mutual understanding, and provided opportunities to learn how to tackle collective problems in a cooperative way. FRGs reported that the research groups enabled them to strengthen relationships and develop habits of consultation and collaboration. Many farmers highlighted benefits such as access to information on improved technologies, strict follow-up and technical support, higher productivity, and improved income and livelihoods.

Despite the learning and positive appreciation, only few of the IP members were interested in applying the IP methodology in their respective organization. The local coordinator of GRAD noted, 'We also try to use multi-stakeholder platforms, but in a different way. Now we are trying to adapt AR's approach in our project.' The head of extension at WoARD was also enthusiastic: 'We developed a demand-based project proposal for an international water management project and the proposal is accepted.' Based on the AR experience, they planned to implement the project through multi-stakeholder IPs. Beside these positive reactions, most respondents forwarded constraints as to why they were not able or less interested to implement the IP methodology, while some even did not grasp the issue and noted that 'there was quite some adoption of new agricultural technologies'. The first constraint mentioned was lack of knowledge and limited facilitation skills. An extension officer explained they could not propose an IP approach, as they lacked enough colleagues with the required knowledge and appropriate facilitation skills. The second constraint mentioned was lack of resources (particularly financial resources). The extension officer at woreda level said, 'Even if we want to apply the same approach as in AR in our extension office, we don't have the required resources. We are supposed to cover large areas with limited human and financial resources.' He added, 'The key is in the government's hand: it is about lack of commitment.' His colleagues agreed there was some investment done in public extension and research, but the higher-level authorities were not committed to financing interactive innovations processes. The third constraint underscored was the absence of evaluation and rewarding mechanisms that encourage to apply similar approaches. The extension officer and the DAs stressed that they were evaluated and ranked on, for example, the number of farmers that applied the promoted fertilizer and seed varieties, rather than the execution of a problem-based interactive innovation process, and the provision of demand-based services. It takes some effort to undertake a participatory approach, while there was no incentive or reward to do so.

#### 4.3. Institutional anchoring

The project focused mainly on the development and out-scaling of agricultural intensification practices. Nevertheless, interviews with the AR team interviews showed the expectation that the IPs would be sustained after the end of the first phase. The summary of AR R4D in Endamehoni Site, Tigray region (2012–2016, February), compiled by

the site coordinator, noted the project expected some partners would adopt the participatory research and extension approach, notably the IP methodology (Ebrahim, 2016). The AR site coordinator explained, 'We want to show that the approach we apply is successful. We engage them in all activities and we also provide training, so we expect that if they know the benefit, they will make efforts to make it sustainable.' Similarly, the national coordinator noted, 'We are working with them, starting from farmers, to the local level officers, researchers and extension, in the hope that they appreciate the approach.' In a way, it was assumed that the concrete evidence at the local level would spread the word and convince the relevant policy-makers. Additionally, the IP members shared the methodology and success stories of the project in different meetings organized by GOs and in other established networks. Some regime actors got to know and appreciated the methodology. A woreda extension officer noted, 'The government policy advocates participation of different parts of the community, but in most cases the practice is far from that.' However, there was no systematic activity to use mass media or lobby at regional level to convince key actors who decide about government research and extension approaches, distribute R&D funds, and elaborate officer evaluation and promotion criteria. National-level review and planning meetings were organized by the project on annual basis, where federal level partners of the project from MOA and EIAR and other projects, and local project coordinators and woreda level partners participated. However, they mainly discussed the technological innovations, and there was no explicit knowledge sharing and reflection on the FRG-IP methodology. Higher-level government officers on their turn claimed that adopting innovative approaches and adapting the policy and work arrangements wouldn't be difficult, but they underscored the need for evidence that shows the new approach works and brings better results than the actual government approach. The Head of TBOARD stated, 'Research and development partnership is very important for us, to accelerate our development. ADPLAC is one platform in which we use to facilitate such partnerships. He added, 'Scaling innovative partnership approaches wouldn't be a problem, if it is proofed to be useful and efficient. On his part, the Alamata research centre manager said, 'Starting from the first Growth and Transformation Plan (GTP I) in 2010, the government is giving more and more attention to participatory and adaptation based research that can satisfy the needs of farmers.' He added, 'I don't think there is problem from the government to learn and take up best practices in this regard.'

Though the explicit lobbying at the higher level may have been limited, the practical work itself induced change in attitudes and practices at the more local level. Implementing IPs not only ensured some methodological anchoring but also influenced informal behaviour of IP members. They somehow got used to 'new' innovation procedures (e.g. joint planning, implementation, and monitoring and evaluation). Different members testified that the IPs changed the usual top-down compartmental work culture into a more collaborative one. They now worked collaboratively, which stimulated each to invest more time, effort, and resources on the AR project, and thus created a feeling of ownership. A woreda extension officer said, 'It is like creating one strong team for a common goal. We plan together, and implement together, which was not common practice before.' Several interviewees appreciated that IPs stimulated continuous demand articulation by farmers and other stakeholders, useful for planning and re-planning. FRGs were also reported to be useful, as most problems were first discussed in the FRGs meetings before farmer representatives would take them to the Kebele IP. Government Development agents (DAs) noted that: 'It is a new thing, to make farmers responsible for their own development. Something introduced by AR.' Hence, several parts of the FRG and IP approach were highly appreciated by the actors, but unfortunately, as described in Section 4.2. most respondents do not propose the approach outside the AR project and forwarded constraints such as lack of knowledgeable colleagues, lack of resources, and a lack of a conducive incentive system. Table 3 gives a systemic overview of the anchoring activities/strategies.

**Table 3**  
Overview of anchoring activities/strategies in the study area.

<b>Communication and documentation needed to support anchoring activities, important for both out- and up-scaling</b>			
<p>+<i>-T.1. Create persuasive vision:</i> those involved have positive story they tell in meetings, but this issue is not systematically prepared</p> <p>+ <i>T.2. Develop methodological guidelines:</i> Guidelines and manuals for establishing and facilitating innovation platforms for AR partners were developed by the AR team in Addis-Abeba</p> <p>+<i>-T.3. Ensure mass communication:</i> Radio broad casts, leaflets and field days were more focussed on technical aspects than <i>FRG-IP approach.</i></p> <p>- <i>T.4. Generate supportive evidence:</i> No systemic data collection is done to provide policy makers with required evidence.</p>			
<b>Network Anchoring Activities</b>	<b>Methodological Activities</b>	<b>Anchoring</b>	<b>Institutional Anchoring Activities</b>
<b>At the level of potential users/beneficiaries in niche and beyond</b>			
<p>+<i>N.1. Inform potential beneficiaries:</i> Mass communication via radio and leaflets. Inviting beneficiary and non- beneficiary farmers to participate in field days</p> <p>+ <i>N.2. Identify and mobilize capable persons:</i> Identifying and involving core actors for Kebele IPs and technical committee; and farmers for commodity based FRGs</p>	<p>- <i>M.1. Organize training:</i> not performed for actors involved at local level</p> <p>+ <i>M.2. Organize practical experimentation for learning and adaptation to real-life context:</i> FRG and IP members learned through practice</p>		<p>-<i>I.1. Ensure continued and widespread practice for institutionalising new beliefs and informal rules of practice:</i> Stimulating continued practice of interactive demand-articulation and trials of solutions in restricted intervention area</p> <p>-<i>I.2. Create committed constituency for political support:</i> networking and mass communication mainly on technical aspects such as adoption of farm technologies</p>
<b>At the level of potential partners for implementation niche and out-scaling the ‘novel’ methodology</b>			
<p>+ <i>N.3. Inform organizations in and around area of intervention:</i> Identifying and inviting higher officials such as woreda and zone level administrator, research center managers in experience sharing events, workshops/meetings, and field days; Informing higher officials, when they are not engaged themselves (e.g. TARI director and college dean of dry land agriculture and natural resources of the Mekelle university)</p> <p>+<i>N.4. Identify and connect to organizations key for implementation:</i> Identifying potential partners (universities,</p>	<p>+/-<i>M.3 Organize training:</i> AR head office at Abeba organized (a) training for core partners in the PCA team on AIS concepts and FRG-IP methodology, PCA tools, facilitation and interactive monitoring and evaluation methods (e.g. the Most Significant Change approach). (b) IP facilitation training for the core partners identified earlier (agricultural research institute, woreda level extension offices), and the AR team at the project site (trainings are limited to core actors)</p> <p>+ <i>M.4. Organize practical experimentation for learning and adaptation in real-life context:</i> Technical committee prepares most meeting and is highly involved in</p>		<p>+/- <i>I.3.: Ensure continued and widespread practice</i> for institutionalising new beliefs and informal rules of practice: practice of less rigid interactive research, collaborative mobilization of resources in restricted in intervention area</p> <p>+/-<i>I.4. Create committed constituency for political support in implementing organizations and beyond:</i> identifying zonal and woreda administrators and government officers and involving them in IP and in mass communication events such as field days, with issues focused mainly on technical aspects, such as adoption of farm technologies</p>

(continued on next page)

**Table 3** (continued)

<p>research institutions, and regional and zonal bureaus of agriculture)</p> <p><b>+N.5. Identify and mobilize key officers for implementation:</b> directors and experts from research centers, a university, ATVET and WoARD are selected for PCA/Technical committee, other relevant officers join woreda IP</p> <p><u>-N.6. Identify and mobilize key officers with good connections for informing and lobbying at level of regime authorities.</u> Identification of actors and connections created were focusing on successful implementation, than lobbying for changes at a regime level</p>	<p>experiential learning, other IP members to a lesser extent</p> <p><b>+ M.5. Organize monitoring for explicit learning &amp; adaptation:</b> Applying MSC as means for participatory monitoring, dialogue and learning about IP approach</p> <p><b>+ M.6. Transfer ownership:</b> Inviting regime actors to take on some responsibilities; to develop new skills of doing things and mobilizing human and physical resources among IP partners</p>	
<p><b>At the level of key authorities in incumbent regime able to create new formal rules (up-scaling)</b></p>		
<p><b>+/- N7. Inform key authorities of the regime:</b> Inviting higher officials such as directors of research institutes, extension offices and research center managers to workshops/meetings, experience sharing events and field days</p> <p><u>-N.8. Identify and connect with key organizations of the incumbent regime</u></p> <p><u>-N9. Identify key decision-makers and advisors in organizations</u></p>		<p><b>+/- I.5. Early Lobbying and creation of events to convince key actors of the incumbent system:</b> Presenting successful project experiences at some government planning and exchange meetings and other national network meetings</p> <p><u>-I.6. Provide a persuasive vision/narrative and research reports promptly to key decision-makers and advisors in organizations:</u></p>

Bold and + = Activities executed well; Italic and + - = Activities not executed well; Underlined and - = Activities Not executed.

### 5. Analysis and discussion

The aim of this paper was to develop an anchoring framework that would inspire and support projects that experiment with innovation methodologies, to reflect upon, design, and assess anchoring of the experiment to ensure a good fit and potential for scaling. The question was whether the framework provided insights in the strengths and weaknesses of a strategy and plausible effects it has on future scaling. We used the framework to analyze the anchoring activities executed by an FRG-IP project in Ethiopia, highly appreciated by the involved actors. We asked ourselves: what anchoring activities are done, and what does this imply for the (a) grounding and adapting of the innovation methodology in the real-life context, (b) the potential for up-scaling to improve sustainability, and (c) the potential for out-scaling (mainstreaming)? Our analysis gives the following results.

#### 5.1. Anchoring of the innovation methodology in local real-life context

The R4D approach, envisaged by AR, differed considerably from the dominant agricultural ToT regime in Ethiopia. To try the fit and value

of the FRG-IP in the local Ethiopian context, AR needed to inform and motivate stakeholders to join the experiment; hence, they started with the first networking and methodological anchoring. They identified and mobilized high-level officers in agricultural research institutes and the woreda and kebele extension offices (N4 + N5 anchoring activity, Table 3). These persons had the technical expertise and/or the local authority to contribute resources to the experiment. At the same time, they were the core actors of the agricultural ToT regime at woreda and kebele level: they could influence the research and development procedures, resource attribution and practices in their respective office. They were open, but also somewhat unsure about applying the new innovation approach. At first instance all methodological anchoring activities were geared towards these core actors: they received training on the AIS concepts and FRG-IP methodology (M3), and were appointed critical roles in the multidisciplinary PCA teams and the Technical committee (M4 + M5 + M6). The head of WoARD acted as chairperson of the IPs, while the representative of the Tigray Agricultural Research Institute (TARI), coordinated the M&E activities. In sum, AR field co-ordinators assigned them critical roles in the planning, execution and M & E of the new approach, for operationalizing and adapting the

approach to the local context, where needed. In this way, these core actors acquired theoretical and experiential knowledge, were active in the monitoring and reflection about what the possible fit of the methodology, or parts of it were in the local context (M5). In a way, they also had the ownership to decide whether and how to implement the demand driven, interactive innovation approach in the local context, what skills should be developed, and what resources needed to be mobilized (M6). However, the transfer of ownership was limited, as it was done within the realm of project, providing substantial resources and incentives for a limited time and number of actors, directly involved. For a more sustainable 'grounding' of the FRG-IP idea in context, a dialogue could have been started with the relevant authorities to see what resources and incentives could be sustainably allocated to such a FRG-IP idea, to assess and adapt the methodological format most apt to be sustained (I5).

The second focus of the AR networking concerned selection of the farmer communities and respected farmer leaders ('model' farmers) who led FRG discussions and experimentation (N2). Similarly, AR officers identified additional actors at kebele and woreda level, whose guidance and support would help the execution of a farmer-driven innovation approach (N4). These actors were invited to participate in the IPs, next to the technical committee members who were the prime movers of the IP approach (M3). Neither the FRG nor the additional IP members received any specific training, but learned through practice. In this way, they operationalized the FRG ideas as fit within their biophysical, farm, and community context.

### 5.2. Networking & methodological anchoring for out-scaling

Out-scaling of small technical and methodological changes require mainly networking and methodological anchoring: to make more people informed about the benefits and the required practices, to see to what extent it would fit their biophysical, socio-cultural and economic situation. However, out-scaling of more complex technological or methodological innovations require systemic change. In these cases, institutional anchoring and up-scaling is needed to create the required organizational and institutional context for local actors to even consider uptake.

The AR case shows that the change from a ToT innovation approach to the FRG-IP approach was a complex one. The differences in innovation methodology and related organizational and institutional were considerable. AR invested in networking. With their partners, they organized farmer field days at several stages of the experiments, printed leaflets, and organized radio broadcasts to network, disseminate, and discuss the work and results among participating and non-participating farmers and relevant organizations at kebele (N1), woreda, and zonal level (N3). These events focused primarily on demonstrating developed agricultural technologies, but as participants were enthusiastic about the approach, they also mentioned this aspect. IP members identified the IP methodology as 'the MSC story' and also shared this story with colleagues in their organization (N3) and sometimes at higher-level planning and network meetings (N7).

Through informal networking, a substantial number of officers at kebele, woreda, and regional level were informed about the positive FRG-IP experience. AR documents and interviews revealed the implicit assumption or hope that the 'successful implementation' would lead to uptake, but they somewhat overlooked the need for more intense exposure (M3 + M4) and the force of the constraining institutional context.

### 5.3. Networking and institutional anchoring for up-scaling

As noted above, the sustainability and mainstreaming of a methodological innovation depend on the creation of conducive conditions. This means a dialogue has to be started with key authorities at regional and/or national levels about the benefits of a locally developed

innovation methodology, the institutional environment needed to sustain and mainstream the methodology, and the actual possibilities of key authorities to do so. Persuasive narratives and positive evaluations give the benefits, but key authorities have to see to what extent they can mobilize institutional support.

In the case of the AR project, the focus was on the local FRG-IP methodology to provide local-fit technologies, rather than to explicitly propose the Ethiopian authorities to sustain and mainstream the developed FRG-IP methodology. They did not work on a persuasive vision, independent scientific research, or a strategic plan to mobilize brokers (N.6 & 7) or identify critical authorities (N7 & 8) in order to start a dialogue (I.5 & 6) whether and how they could adapt the government incentive and reward system.

Informal institutionalisation of interactive R4D practices (I2 & I4) happened, but was mainly limited to the project period and intervention zone.

### 5.4. Assessment of anchoring activities done and potential for scaling

AR did a thorough job to ground the FRG-IP methodology in the local context. The regime actors involved appreciated the methodology. The logic and features of the FRG-IP niche, however, differed considerably from those of the ToT regime; out-scaling of the niche experiment was problematic due to the limited institutional anchoring and up-scaling. Networking for and actual dialogue and lobby with key authorities were the main missing activities (dark grey in Fig. 3). Besides this, broader networking, training and mobilisation of key implementing partners for the experiments-in-context and capacity building could have supported some out-scaling. Fig. 3, shows five missing activities (in dark grey shades) negatively influenced the performance of several other anchoring tasks. The entwined negative dynamics led to a situation in which the potential for scaling of the FRG-IP, if desired, became limited. Results showed that at the end of the project, there were some farmers, IP members, and technical committee members who appreciated the collaborative FRG-IP methodology, and a few dynamic technical committee members dared to propose the AIS approach in upcoming research, but most IP members deemed it difficult to pursue the new innovation approach outside the AR realm, as they lacked knowledgeable colleagues, resources, and rewards to substantially invest in the 'hard work'.

The AR project focused on the development and out-scaling of technological innovations rather than the FRG-IP approach, but simultaneously assumed or hoped that the methodology would be taken up and spread. Our analysis shows that AR succeeded in the grounding of the experiment in the local real-life context, but did not start a dialogue with regime authorities to make the fit of the experiment with the institutional context. Our framework showed the importance of institutional anchoring, notably strategic networking (N6, N8 & N9), coupled with dialogue and mobilisation of key regime actors (I5 & I6), for institutional grounding of the experiment and potential up-scaling. The framework also showed what network- (N4 & N5) and methodological anchoring activities (M3 & M4) were needed for out-scaling, but the AR case study revealed this was not enough. It showed that out-scaling of radical, complex changes in the innovation methodology highly depends on institutional anchoring, ensuring conducive environments (up-scaling). These insights may be very useful for AR and future innovation methodological experiments, to develop an interactive innovation methodology fit for the context and with potential for up- and out-scaling.

With this framework, we want to inspire R4D projects that experiment with methodological innovations, to proactively and systematically consider the anchoring in order to make the best fit between the innovation methodology and its context, and to work on scaling the successful experiment. So far, many R4D projects, introducing participatory and interactive innovation methodologies for agriculture in developing countries, lack attention for the institutional embedding

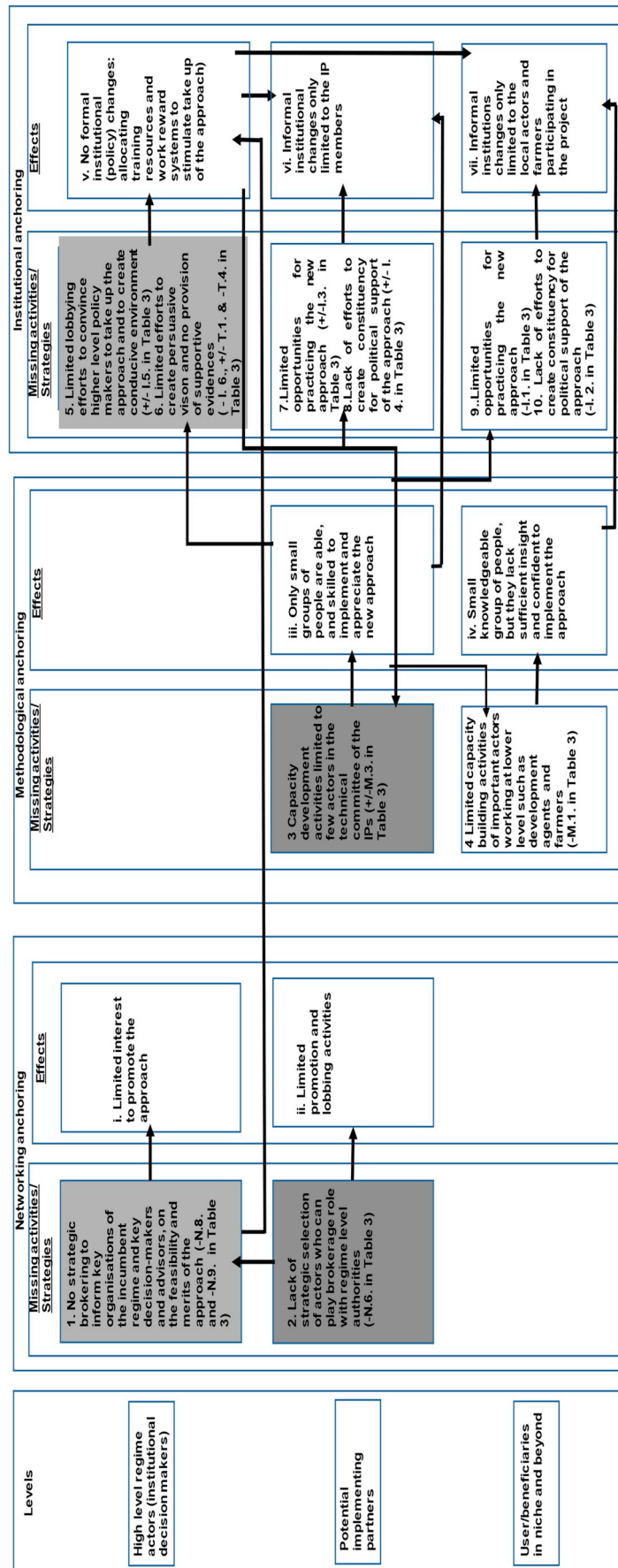


Fig. 3. Missing anchoring activities and strategies across different types of anchoring and administrative levels in Tigray region, and effects.



(Hermans et al., 2017; Minh et al., 2014; Nederlof et al., 2011; Schut et al., 2016b; Wigboldus and Leeuwis, 2013; Wigboldus et al., 2016). Their prime focus is to apply a participatory methodology to find technological sound solutions for farmers.

Looking at these experiments from a niche management perspective, Schot and Geels (2008) note that niche experiments often fail, due to a focus on single loop learning ('How to apply a methodology') and limited involvement of regime actors (Schot and Geels, 2008). Pro-active involvement of regime actors in the methodological experiments, coupled with a dialogue with regime authorities on the vision, would create double loop learning ('What type of methodology would be fit and acceptable in the context?'), and bricolage of the logic and practice to make it acceptable for regime actors who are able to provide resources and institutional embedding (Schot and Geels, 2008; Smith, 2007; Wigboldus and Leeuwis, 2013).

Idealism helps to design more effective innovation methodologies and binds people in a niche experiment, but to embed it in the wider institutional context, pragmatic actors are needed who can make compromises and help to translate niche ideas into new forms more amendable for regime actors (Smith, 2007). Our research findings show the pertinence of the transversal support activities (T1, T2, T3 & T4) and strategic networking (N4, 5, 6, 8 & 9), to be followed by methodological anchoring (M3 & 4), while simultaneously working on institutional anchoring (I3 & 4), to ensure the right fit with the real-life local situation and the institutional context. In other words, methodological anchoring is about 1st order learning, while institutional anchoring concerns 2nd order learning. Together they allow for good grounding and ensure a potential for scaling. To attain the best fit, an iterative process of dialogue and probing is needed. We therefore recommend a flexible, multipronged approach, continuously scanning the progress made and anchoring tasks yet unfulfilled, in order to ensure proper embedding, as a pre-phase for going to scale.

Ultimately, successful anchoring depends on the mobilisation of key actors in a certain context (Kivimaa and Kern, 2016; Muilerman et al., 2018; Wigboldus et al., 2016). So-called champions navigate the process and can overcome constraints (Klerkx et al., 2013). Champions may have different qualities: knowledgeable on the methodology and/or anchoring processes, open-minded, dynamic and with good connections, or having power resources (such as rule making authority, financial resources). These qualities enable them to ensure the networking, craft and flexibly adapt the vision, the methodological- and institutional anchoring strategies to make them fit and effective for the

context.

## 6. Conclusion

At this moment, there are many R4D projects, experimenting with more interactive innovation methodologies to find sound technical solutions for farmers. This concerns a wealth of investment, but unfortunately the innovations and outcomes of the projects seldom 'go to scale'. To stimulate the uptake of successful innovation experiments, we want to inspire practitioners to pay more attention to the anchoring of these niche experiments. We developed an anchoring framework, highlighting relevant networking, methodological and institutional anchoring activities, and tested the value for assessment and strategic advice to a R4D project in Ethiopia. The use of the framework (identifying the tasks executed or non-executed), coupled with an analysis of the embedding of the methodological experiment, potential up-scaling and out-scaling, provided interesting insights. It showed the strengths and weaknesses of the anchoring work, which led to concrete suggestions how to proceed if an innovation projects considers 'going to scale'. We recommend R4D projects to valorize their work and pay more explicit attention to anchoring. With a flexible, multipronged approach, continuously scanning the strengths and weaknesses for better anchoring, we are sure more R4D projects can fit the innovation methodology in the context and be able to 'go to scale'.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Acknowledgements

We would like to thank the CAcapacity building for SCaling up evidence based best practices in Agricultural Production in Ethiopia (CASCAPE), funded by the Dutch Embassy Addis Abeba, Ethiopia, for their full support of this research, which is part of PhD study of the first author. The authors highly appreciate the open exchanges with the AR project team at Addis Abeba and Endamekoni Woreda project site, all IP members, farmers, government officials, researchers, NGOs, and other representatives of GOs.

## Appendix 1. Summary of organizations/people contacted, themes explored and interview types

Organizations/People contacted	Themes explored	Interviewee and Interview types
AR project	<p>Comparison and contrast of the project and the public research and extension, keeping in mind the features identified from the literature (regime/niche comparison)</p> <p>Activities performed/strategies used to find and connect to strategic actors from different administrative levels and create connections (network anchoring)</p> <p>Activities performed/strategies used to teach regime actors about the FRG-IP approach of the project, support to try it and adapt to their context</p> <p>Lobbying and negotiation activities performed and strategies used to stimulate key regime authorities, advice provided to help them create vision of the proposed novelty, negotiations to create conducive policies (such as incentive mechanisms and changing evaluation criteria and stimulating funding) in the governmental organizations engaged in the project, mainly in research and extension organizations</p> <p>Perception in relation to changes on the partners engaged in the project, on their awareness and understanding about innovation system thinking and FRG-IP approach</p> <p>Perception on the positive influenced of the project so far (e.g. if there are actors from the regime promoting or using the approach because of the experience they got from the project)</p> <p>Efforts made to out scale or up scale the FRG-IP approach</p>	<p>In-depth Individual interviews with AR project officers in the ILRI</p> <p>In-depth group interview with the site coordinator and an assistant coordinator of the AR project</p>

AR project partners	Comparison and contrasting of the project with the public research and extension (regime/niche comparison) New knowledge and skill acquired from engaging in the project, the willingness and/or ability and confident to apply what they learn, and challenges faced Perceived changes, in relation to research and extension approach policies and incentive mechanisms and/evaluation criteria or cultural/practice changes Types of capacity building supports received; particularly in relation to increasing awareness and knowledge on the innovation system thinking, and the FRG-IP approach Perception on the approach of the project (if they appreciate and promote the approach of the project or tried to use it in their respective organizations, and why/why not) Efforts made to out scale or up scale the FRG-IP approach.	Individual in-depth interview with a researcher from Alamata research center In-depth group interview with the woreda Endamehoni extension officer, Development Agents (DAs) and GRAD coordinator at Endamehoni woreda
AR project beneficiary farmers (FRG-IP members)	Comparison of the project with the public research and extension system regarding the services they get and also regarding their engagement and participation in the decision making, experimentation, or trail; and their perception towards the approach of the project compared to the public approach	In-depth individual interview with FRG members also members of the kebele IPs In-depth group interview with representatives of the most active FRGs (but not members of the IPs)
TBOARD; and Alamata Research Centre	Willingness of the government to take up/adapt the approach of the project or similar innovative approach, and the challenges and opportunities (institutional anchoring)	In depth individual interview with Head of TBOARD; and Alamata Research Centre manager, separately

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