

Potential scaling strategies

for Farmer FIRST Project

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Background of FFP

In the past, the technology emanating from research stations was considered as a vital factor in the production system and farmer as a recipient of the technology outputs. Farmers have their own experiences and knowledge of production environment and knows how to maximize technological gains from novel technologies/modules to be demonstrated at farmer's field level within the resource constraints at their farms. The knowledge and innovations of the farmers were not valued much and not involved as a partner in the experimentations. The wisdom available with the farmers was also not channelized so much to derive suitable options for different production systems. The participation of multiple stakeholders was also not taken up in perspective for technology development, integration and adoption. Moreover, the situation in globalised agriculture has changed drastically in terms of increased number of smallholders, growing proposition of women-led agriculture, market led extension and demand driven production, need for higher return per unit area, etc. To harness the potential of technology, the need was felt to involve innovation and technology development with the strong partnership of the farmers for developing location specific, demand driven and farmer friendly technological options. Herein, the farmers participate in the research process with scientists. Research questions are found out together with selected farmers or the whole

village and villagers' participation in monitoring experiments with scientists. Indian Council of Agricultural Research (ICAR) has launched an initiative known as Farmer FIRST Program (FFP) to move beyond the production and productivity; to privilege the smallholder agriculture; and complex, diverse and risk prone realities of majority of the farmers through enhancing farmers-scientists interface.

Concept and philosophy of FFP

The nomenclature of Farmer FIRST Program is farmer's Farm, Innovations, Resources, Science and Technology. The interplay of available resources at farm and implementing innovation emanating with modern science and technology in research domain at farmer field, led to emergence of farmer centric approach in agricultural research and extension. This necessitates the amalgamation, development and refinement of modern technology from research institutions with knowledge and wisdom of farmers. This process not only enhances the use of appropriate technology capacity of the farmers, but also provides the feedback to the scientists to refine and fine tune it to local setting. The basic concept is that the farmer is in a central role for research problem identification, prioritization, conduct of experiments and its management in farmers' field conditions. In essence, the FFP brings farmers and scientists together in one platform to understand the requirement of Indian agriculture in modern age.

Monitoring operations of FFP

There are 52 projects under the FFP in 20 states throughout the country. The interventions of each project were broadly categorized into six modules, viz. crop based, horticulture based, livestock and fishery based, natural resource management (NRM) based, enterprise based, integrated farming system (IFS) and capacity building measures modules. The nature and scale of intervention under each module were prioritized and implemented based on technological need of farmers, location specificity, availability of technology in the region. There are more than 400 interventions. Number of farmers covered under interventions ranged from even less than 5 for some animal based and NRM based interventions to more than 300 for crop based interventions, viz. introduction of prominent varieties of crops developed by research institutes. The proper implementation of each FFP is monitored physically and also through FFP portal at two levels. Agricultural Extension Division of ICAR and ATARI which are at the top of the hierarchy, monitor the project activities and progress under this programme through FFP portal. The monitoring of each FFP going on under its zone is done by ATARI, whereas at the council (ICAR) level, monitoring of all the 52 FFP projects can be done through live reports. Dashboard facility is also provided at the council level so that the user can see year-wise count for the number of annual report, and other information

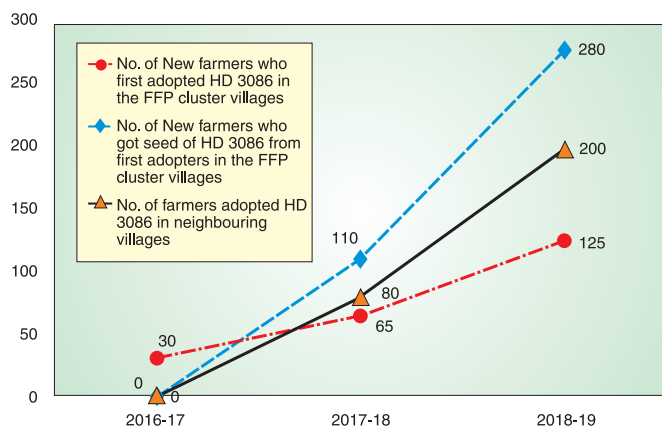


Fig. 1. Diffusion of HD 3086 among farmers of ICAR Farmer FIRST Project villages and in neighbouring villages

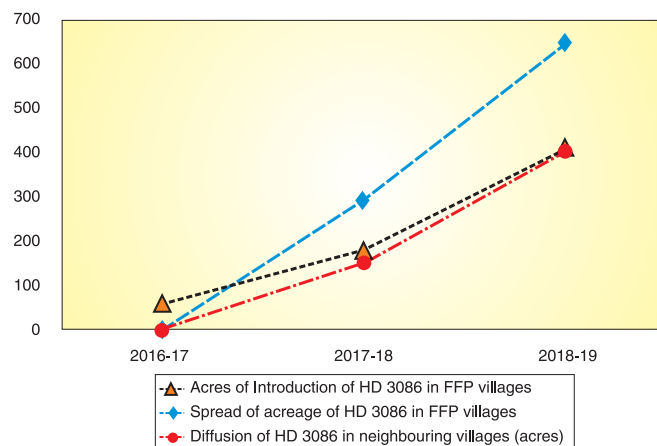


Fig. 2. Diffusion of HD 3086 in acreage of ICAR Farmer FIRST Project villages and in neighbouring villages

submitted by the centres. In span of 4 years (20117 to 2020), a lot of information and knowledge is being generated under 52 FFP projects on different aspects like resource management, climate resilient agriculture, production management including storage, market, supply chains, value chains, innovation systems, etc. The portal facilitates to principal investigators of the project to update and upload all types of related information for technology assessment on FFP and disseminated it to the farming community. The portal provides information on latest publications, success stories, salient achievements, upcoming trainings and past events organized under FFP projects. The creation of FFP portal has helped in achieving visibility and accessibility of programme in sustainable way.

Scaling of FFP

The ‘scaling what works’ is to direct more funding to interventions that actually get results. But questions remain about how funders and social change leaders (innovative farmers and researchers, extensionists) can work together to have an impact across scales and what ‘scale’ or ‘scaling’ actually involves. FFP agri-innovation is defined as ‘any initiative for giving intervention in the form of technology/enterprise based modules/ technology assemblage/product, system, platform or design that challenges, and over time changes, the defining routines, product, resource and authority flows, or beliefs, of the social-

economic system in which the innovation occurs’. Such agri-innovation has potential to create large systems change. With the growing interest in scaling, questions arise about how leaders of FFP initiatives may achieve scale, and thus, affect large systems change. This can be assessed from the lens of transition theories, viz. (i) strategic niche management, and (ii) social innovation. The development of innovations under FFP must work to create innovation niches. These niches are understood as ‘safe’ spaces’ and provides space for socio-technical transitions—the pathways involved in new technological adoption, and their role in breaking institutional lock-in within a given ‘regime’, which refers to the reinforcing social, economic, cultural and technological systems in a given organizational field. To understand how to create a ‘niche’ that is safe and to generate an innovation within that ‘niche’ one needs to understand about the mechanisms of shielding, nurturing, and empowering. FFP is multi-dimensional system and cultivation of innovation in technological niches alone will be insufficient. Multi level perspective of FFP depicts levels when managing an innovation or transition for system-wide change—niche, regime, and an exogenous landscape. Scaling strategies are required to move FFP initiative across scales before nurturing smaller-scale niche technologies until they are ready to compete with the dominant technology in a regime. Knowledge translation into farmers’ field

environment and the process of ‘anchoring’ or linking are important mechanisms for connecting the niche to the regime level. ICAR and SAUs have become strategic agency to move ideas from one context to a larger scale.

ICAR desired a deliberate strategy for moving beyond discrete project-based funding, in order to enable broader impact by their FFP implementing institutes. The strategy needs to support rural and agri-innovators in disseminating new processes, skills or knowledge in their work with communities and organisations, and to apply or adapt innovations in different settings. ICAR has invested resources into FFP initiatives, which successfully generated new models/ technology or technology modules but these initiatives could not completely address the roots or complexity of many agrarian problems. That is, the ICAR is effectively supporting ‘niche’ development, but there is limited impact on the broader regime or system. But FFP partners through the intensive learning process in the group, begin to recognize opportunities to scale the impacts of their initiatives beyond their own ‘niche’.

Routes to Systemic Impact

‘Scaling out’ happens when the implementers of FFP attempts for replication and diffusion of successful innovations in different communities and geographies (or ‘niches’), with the hope of spreading those same results to more people and cover a

larger geographic area. So out-scaling refers to broadening i.e repeating an experiment in different niche contexts. The farmers start demanding more of FFP outputs due to embedding a transition experiment into dominant thinking within a niche or regime. The objectives of FFP start affecting everybody who is in need of the agri-innovation they offer, or aims to address the broader institutional or systemic roots of a problem. Hence it becomes essential how to make the project/program more inclusive having broad social base. To achieve this, focus must be on linking together community-level policy interventions into a more coherent movement. For many initiatives, the route to greater impact lies in scaling up. Scaling up happens when focus is on the policy level because it has 'the largest impact' and is capable of changing the 'rules of the game'. To manage the rules of game, FFP requires institutional changes, laws and policies at different levels. Ultimately, the shift in scaling efforts is on changing cultural beliefs and notion of 'scaling deep' pertains to durable change that has been achieved only when people's hearts and minds, their values and cultural practices, and the quality of relationships they have, are transformed. Scaling out and scaling up are carried out with the support of associated strategies.

Strategies for FFP interventions (Agri-innovation) and large systems change

Tips for diffusing innovation are abundant. Some of the strategies consider the skills and agency of actors who are navigating complex systems, trying to stimulate or support large systems change, and leverage the necessary resources to achieve this change. For instance, an improved wheat variety HD 3086 is diffused among farmers and across acreage of ICAR Farmer FIRST project villages and in neighbouring villages by Indian Agricultural Research Institute (IARI) as evident in Figs 1,2. Networking across sectors (rather than within sectors) is especially valuable for focussed collaboration, resource-pooling,

extending the FFP's sphere of influence, and developing unusual alliances. The networks are not merely for coordination, but are for generating coherence through targeted interventions and stewarding development of particularly critical ingredients of a complex change system. Funding FFP is not only to support the scaling process, but is also a necessary precursor to scaling in order to build internal capacity for systems approaches. The FFP would grow only when organizational capacity is built in an effective manner over several years. As a more mature FFP there is need to allocate new resources to growth and development.

Cross-cutting strategy: Broaden the problem frame

In general, the learning process widened could contain narrow constructions of problems and solutions at different scales and to understand the complex interrelated layers of variables and phases of change that can influence their issue as they try to scale their impact. Broadening problem definition can lead several organizations to re-conceptualize their goals, as they shift from being focussed on a specific issue, to being more deliberately focussed on solving the roots of the problem. ICAR expressed its new commitment to scaling and systemic impact in different ways. For instance, there could be formally re-drafted organizational vision/mission statements to incorporate clear intentions to effect systemic change rather than focusing on a single issue. FFP partners/participants use internal communication processes (both formal and informal) to establish agreement among staff to reorient for greater impact.

Strategies for Scaling FFP

Scaling out Strategy

Deliberate replication: Prioritizing system-wide change leads to emphasis on fidelity and integrity for some agri-innovations/modules/technology.

Spreading principles: In recognizing the limitations of a

geographic replication approach, some FFP partners have pursued more of an 'open scaling' model, where the core principles and approach of the agri-innovation are spread, leaving it to the local community to adapt it to local conditions: Project partners of FFP can scale an idea that lives out differently in every context.

Shifting to focus on scaling impact demanded that leaders of FFP at ICAR level distil the essence of their technology modules/innovation, etc and hone FFP partners capacity to disseminate the knowledge and principles associated with it.

Scaling up Strategy

Literature reveals that scaling out mostly concentrates impacts on the niche scale, through developing more niches. For many innovators, an equally powerful opportunity lies in impacting higher levels of institutions through policy change. Cross-scale dynamic states that there is no need to have more chapters or more people involved, or expand to new regions. The issue may be taken up and get it into the policy domain, have public policy discussions and scale those up.

There are two approaches for scaling up. In the first approach, FFP partners/innovators working at the level of families or communities may shift their work to higher levels in government in order to address root causes in larger-scale institutions that could affect an entire population. Creating new policy or regulatory frameworks is seen as part of disrupting existing systems and transforming them into something better. This differs from replication strategies, since it often means leaving behind the initial innovative initiative and starting an entirely new initiative focuses on policy change. The second approach focus is on linking together community-level policy interventions into a more coherent movement. Interestingly, just an application within the local context is important when disseminating new ideas/technology/modules and programs. It must be seen as critical when scaling policy change from one jurisdiction to

another. Learning in trying to scale up in terms of policy-related work is that context really matters. Those leaders who seek to scale policies may face challenges because agro-ecological contexts and systems vary greatly across India, and approaches have to be adapted to new jurisdictions each time.

Scaling Deep Strategy

Generating big agrarian-cultural ideas: Scaling the FFP impact beyond the niche to the regime requires scaling deep into the beliefs, ideas, and narratives of dominant agrarian-social structures. Working with norms and values as vehicles for scaling technology/modules/innovations is critical because ideas live differently in every context. By changing the narrative, participants of FFP discern how they could successfully begin to change cultural norms and beliefs about the issue. Agrarian-culture change strategies may vary, but using stories as a method for sharing and co-creating ideas. Amalgamation of stories from the individuals may be affected by the relevant agrarian-social issues, and translation of these into a resonant framing might enable individual anecdotes to tell a more systemic story about the need for change. Therefore, creation of new stories and amplification of those that exist becomes an important vehicle for generating agrarian-cultural ideas and thus, scaling deep to affect the 'regime' level of institutions, and even to the broader culture of agricultural landscape.

Invest in transformative learning: For transformative learning, investment is indispensable to get deep insights of how to develop a community of learning that in turn develops the growth and development of the already existing/created networks. It is the connectedness that is the strength of the networks and this connectedness can only be created through sharing experiences and best practices. Here intent is to scale is an experience rather than a particular programme or process.

A common strategy to increase the scale and impact of agri-innovative initiatives is to invest in learning

processes. But cultivating learning becomes a specific strategy useful to build shared mind-sets across a range of sectors and organizations, to ensure the impact of their initiative is scaled deep into the defining routines and practices and beliefs of partners and collaborators. FFP participants may learn processes for scaling and can be supported by a range of methods, including: mentorship, deliberate transfer of practices, capturing and sharing organizational or community culture, and shared reflection and evaluation practices.

In general, less mature forms of scaling focus on replication. But as leaders of change gain confidence, grow partnerships and networks, and aim more consistently to change the system dynamics that gives rise to the problem in the first place. Large systems change impact could occur when participants move from scaling out to scaling up, or from scaling out to scaling deep. No single participant immediately jumps to scaling up or scaling deep, and thus, large systems change may involve at least a combination of three types of scaling.

Challenges in Scaling

Inevitably, ambitious large systems-change goals can present leadership, organizational and agrarian-social challenges. Innovation at FFP centres create its safe space. But in practice, this may create tension with other staff and may generate conflicts between the "old" and the "innovative". These internal tensions may sometimes become the most time consuming part of scaling processes. The time, skills, and talents required is so much to get other stakeholders with the FFP to understand and support what project partners are trying to do. FFP participants would require the time and energy for the growth and sustainability of their own capacity to act as leaders. Here, the support of likeminded peers is essential to sustain the FFP partners as they pursued a path of systemic change and scaling. The question of stress and the capacity to manage the ambiguity and to inspire others to stay with you in the ambiguity, is a key capacity. The key leadership challenges most likely is to maintain in oneself

that capacity over time. The resistance will come but it takes great commitment and time and energy to grow into the new. All stakeholders and partners of FFP may not always be unified in struggle to hold together the old and the new, the 'system' and the individual, growth in numbers and growth in character and leadership, the simplicity with running alone and the complexity of partnering with others for greater impact, and the longing for stability and completion with the reality that change is their constant companion.

CONCLUSION

Replication and diffusion strategies only contribute to systemic change when used in conjunction with a variety of other strategies that ensure impacts are scaled up or deep. Interestingly, the three types of scaling and their strategies can interact in powerful ways to advance systemic change goals. Dimensions of large-scale change efforts are: the quantifiable breadth of people and systems included; the institutional shifts in law, policy and resource flows that are necessary; and the subjective and inter-subjective transformations in values, relationships and agrarian-cultural practices that support durable system-wide change. Furthermore, by tracing the patterns of scaling, it is a combination of scaling out, up, and deep that is most likely to lead to large systems change, rather than any single strategy. An FFP can not simply expect to scale up to effect systems change without having gone through the lessons and capacity building experiences that occur when scaling out, or scaling deep in real-life situation. Additionally, as scaling occurs, it is essential to ensure that the endurance and stamina of leadership can persist for the duration of time that is required for scaling an initiative. The question that remains for the future is, how much of this can be 'taught', so that non-profits and funders today can leapfrog on the scaling successes of the past.

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