Assessing the Scalability of a Research and Development Project: Concepts,Framework and Assessment

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Abstract:

A good understanding of the scaling up process and a framework for analysing scalability is critical for informed decision making. In this paper a six step process is proposed to assess the scalability of an intervention/project. The approach was used to assess the scalability of the electronic voucher systems of Zambia and the Super Seeds Project in Zimbabwe. Estimated scalability indexes for these two projects were 77 and 85 respectively indicating the high potential for scaling up. The numerical score should not be viewed as carrying mathematical precision, because the scoring is based on subjective assessments. Through a validation process it was established that the approach is logically consistent and technically sound .The methodology also allows for a careful and methodological diagnosis of constraints to scaling-up. Key requirements to perform this analysis are a good understanding of the scaling up process in the local setting: effective participation and engagement of the key stakeholders, and external facilitator with no vested interest in the outcome. However mechanical application of the approach or superficial comparison of scalability indexes of different projects is likely to result in misleading conclusions. The model should be tested more broadly to assess its robustness and wider applicability.

Acknowledegment: This paper is based on a research project originally commissioned by Vuna, a regional Climate Smart Agriculture Programme (operating from 2015 - 2018), and funded by the British Government's Department for International Development (DFID) as part of the United Kingdom's aid programme. However, the views and recommendations contained in this report are those of the author, and DFID is not responsible for, or bound by the recommendations made.

JEL Codes: O32, O13

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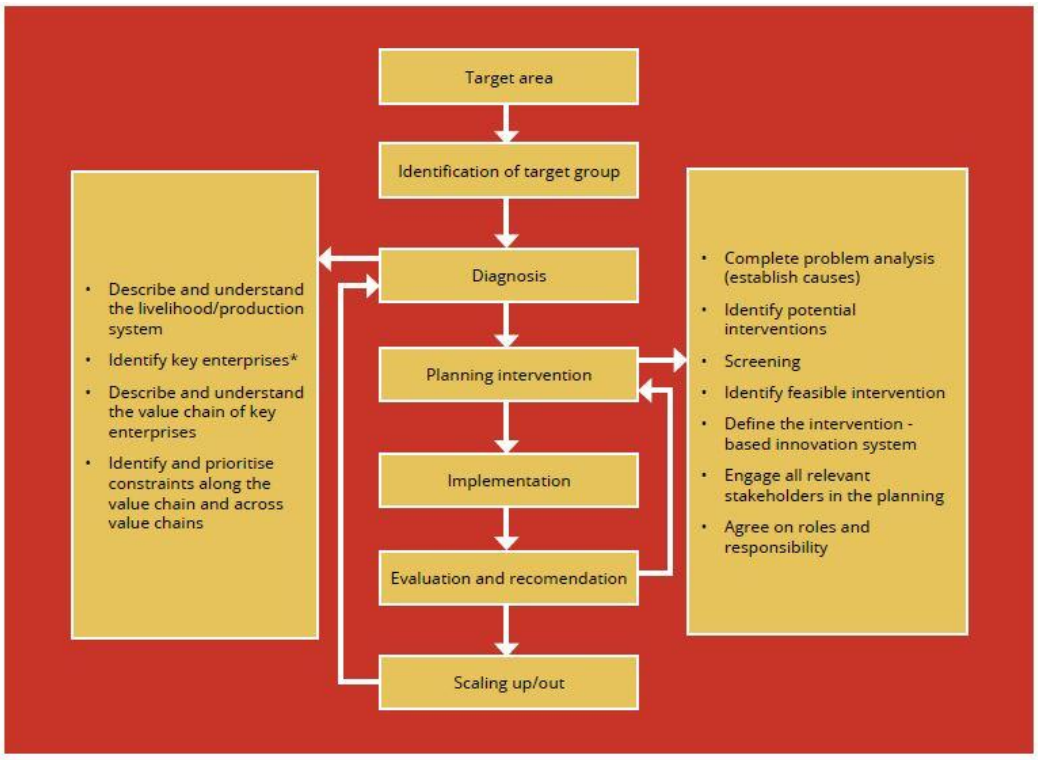
Introduction

Scaling up is an integral part of any successful innovation. Inventions are often tested in pilot projects that have limited reach. Pilot projects that are successful are likely to be scaled up-and expanded within the pilot country, replicated in neighbouring countries, or both. Project based intervention often consists of a package of innovations – (technical, managerial, policy, organizational, institutional and service delivery)- some of which are more readily scaled up than others. In this paper, the term innovation/intervention refers to this package. The decision to scaling-up is often made with incomplete information. Given the high cost of scaling up, it is vital for governments and development partners to carefully decide which innovations are ready for further investment.

The concepts of scaling-up and scalability are defined at the outset of this paper. A framework for analysing and understanding the scaling–up process and the pathway to scaling-up are then presented. Next a six-step process to estimate the scalability index and the scalability of R&D projects is presented. Lessons learned in validating this procedure and its application in two on-going pilot projects are then discussed. Finally, guidelines for using the approach and areas needing further work are identified.

Scaling up

The concept of “scaling up” is not new to the agricultural R&D literature. It is an integral component of the R&D project cycle as shown in Figure 1. A typical, participatory R&D process starts and ends with the ultimate beneficiaries- the farmers.



Source: Anandajayasekeram et al., 2009

Figure 1. Key steps in the R&D process integrating innovation and value chain concepts

The wider applicability of research results over a range of agricultural production conditions or environments (often cutting across geographical and national boundaries) are generally referred to as 'spill-over effects' (Evenson, 1987). Evenson identified four classes of spill-overs: inter locational, inter-foci, inter commodity and inter-sectoral. Locational spill-over will be greater between two locations with similar geo- climatic characteristics than between locations with dis-similar geo climatic characteristics. According to Davis et.al (1987) spill over effects from regions where research is conducted to other regions with similar agro-ecological and rural infrastructure ranged from 64 to 82 per cent (depending on the commodity) of total inter-locations benefits.

The notion of wider adaptability of knowledge and technologies is also reinforced in the emerging concept of 'open innovation'. The central idea behind this concept is that, in a world of widely distributed knowledge, organizations cannot rely entirely on their own R&D activities, but should instead borrow, buy or license processes and inventions from other institutes (Chesbrough 2003). This assumes that someone somewhere has already solved the problem currently being faced. This concept has great potential for accelerating the creation of new 'innovations' through intelligent borrowing of knowledge and technologies.

Currently, as governments, donors and other key stakeholders increase their commitments to agriculture, they are also turning their attention to how successful development interventions can be scaled up to reap the full potential of innovation and R&D investments. In an environment of increasing budget constraints, the need to replicate effective intervention and build on proven success has even greater importance.

How do we define 'scaling up'?

The term 'scaling up' has multiple definitions depending on the area of focus and discipline of interest. Two definitions from the literature are very relevant for agriculture and rural development. According to Hartmann and Linn (2008): "Scaling up means expanding, adapting and sustaining successful policies, programs, and projects in different places over time to reach a greater number of

people". WHO/ExpandNet (2012) defines scaling up as "deliberate efforts to increase the impact of innovations, successfully tested in pilot or experimental projects so as to benefit more people and to foster policy and programme development on a lasting basis"'.

Both these definitions have a number of elements in common: greater number of people (reach), successful interventions, adaptation and sustainability. However, the WHO definition is very explicit in stating that it is a deliberate effort; the focus is to increase the impact of innovation; and stresses the importance of fostering policy and program development on a lasting basis.

These definitions, however, leave open questions including what is being scaled; who does the scaling; how decisions are made about which people are reached and how implementing scaling is managed. The implication is that these generic definitions can, and must, be tailored to specific conditions and context.

Dunn (2014) identified four components of scale – outreach, outcomes, sustainability and equity. Outreach is a measure of the number of people or organizations that receive benefits from an intervention. Outcomes on the other hand, refer, to the beneficial changes (goals) that are the purpose of an intervention. Sustainability refers to having beneficial outcomes, even beyond the life of the project. It is relevant to both outreach and outcomes. Sustainability by definition can only be observed after a project has ended. Therefore, in a practical sense one can only look at interventions that exhibit certain predictors of sustainability. Equity relates to "inclusive growth" or how an intervention helps to expand opportunities for the most vulnerable groups in society - the hardest-to-reach populations.

Conceptual Framework for analyzing and understanding the scaling-up process

Three useful conceptual models in the literature, offers a greater insight into the scaling up process. Although they focus on different aspect of the processes, in combination they provide useful guidelines for practical application (Holcombe et al, 2011).

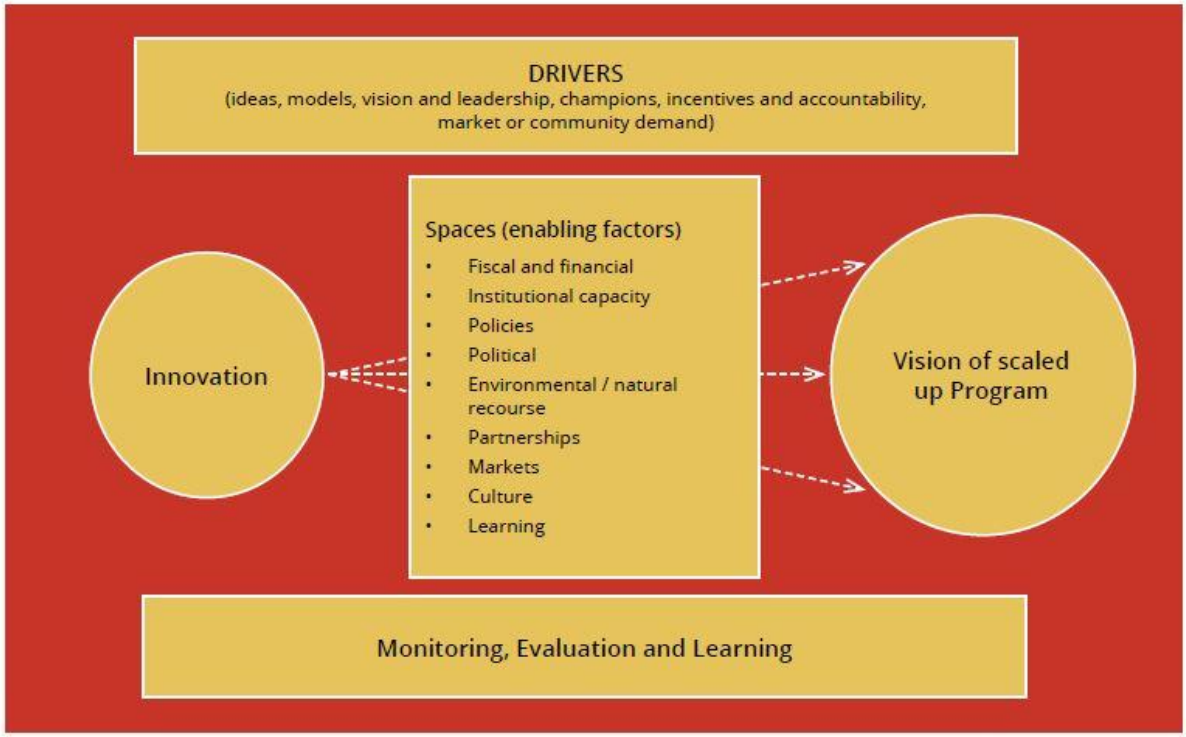
The first model proposed by Cooley and Kohl (2006) and is grounded in public administration and development management literature. The second model proposed by Linn and Hartmann based on IFAD's work (IFAD, 2010), and emphasizes the importance of learning in an "iterative and interactive cycle" of scaling. The third model, reported in WHO/ ExpandNet (2012), was developed to address scaling up innovation in the reproductive health sector. This has relevance to innovations that require significant changes in the behaviors and practices of the client population (such as rural producers) as well as other actors (such as extension agents, government staff and partner organizations).

These three models collectively allow us to identify a number of common elements that need to be considered when developing criteria for assessing scalability:

- All cite innovation as the starting point
- All seek clarity on the actors and stakeholders involved. Who tested the innovation? Who is going to scale up? Who will support the scaling? And who might stand in the way of scaling?
    - In relation to individual actors, all three models raise questions about drivers of scaling up, champions, leadership, networks and partners
    - In looking at institutional actors, they note the importance of organization and management capacity
    - All emphasize the degree to which actors are embedded in the national and/or local context. (local ownership)

- All suggest that the external environments influence the scaling up strategy and processes
- All indicate that intermediary organizations along with appropriate time and pacing are necessary to support the adopting or user organizations and individuals.

Based on the collective experience of practitioners, Linn et al (2014) developed a framework for analyzing the multidimensionality in scaling up efforts in the agricultural R&D (refer Figure 2). In any scaling up process five key mutually reinforcing elements interact with one another to produce the desired outcomes: innovation, beneficiaries, an enabling environment (spaces); promoters (drivers); and service providers. The scaling up strategy, M&E and associated learnings should be an integral part of this process. In addition, critical decisions have to be made about the type of scaling up, dissemination and advocacy, the organization of the scaling up process, cost and resource mobilization as well as M&E (Expand Net 2012). Attention should be paid to all these elements in the design and implementation of scaling up projects. It has been demonstrated that adherence to manageable theories of change, implementation of well understood drivers, and creation of necessary spaces can provide a road map that is adaptable to conditions of project's scope, scale or location (IFPRI, 2012).The key elements of this framework are discussed in the following sections.



Source: GLEE Synthesis Report, 2014

Figure 2. Proposed Framework for Analysis

Innovation

The key ingredient for the scaling up process is the 'innovation'. This is the set of 'interventions' that are being scaled up. Once successfully tested through the pilot project this package forms the model for wider adaptation. There are two aspects of innovation that are of interest. First, the innovations are either new, or perceived as new, in a particular program context. It may be new to potential users but not to others. Second, innovation in this context implies a set of interventions, including the processes necessary to build sustainable implementation capacities. Most development projects focusing on scaling-up have several of the following elements: a technology/management practice; a process to enhance community participation, mobilization and empowerment; training and skill building; information sharing and communication; organizational management; new partnerships

and rules of engagement (institutions); incentive system and service delivery mode; and M&E and associated learning. Therefore, it is important to keep in mind that in the developmental context the intervention may incorporate different types of innovations: technical, managerial, organizational, and institutional and service delivery. Piloting and testing interventions explores the feasibility of implementing it on a larger scale.

Simmons and colleagues (2012) identified a number of attributes related to "innovation" that can enhance the potential of scaling up – also referred to as scalability. These include: be credible, relevant, superior to the current practice, easy to understand and install, compatible (with the objectives, priorities, and resource use pattern), testable and have observable effects.

Theory of Change (TOC)

A clearly defined and usable TOC is an important component of any successful scaling up initiatives. The usefulness of mapping the TOC is that it forces us to make explicit the steps/actions and assumptions required to produce the change sought. Since scaling up is both a change process, and a management process, it is important to make explicit all actions necessary to go from the decision to implement to the achievement of change (Weiss, 1997).

The TOC needs to be clear and credible. Clarity means that the project has identified the process and the chain of actions relying on innovation which will produce the desired outcome. This TOC can be measured and/or monitored and should be tested and validated during the pilot stage. In some cases the TOC may not be very clear and it depends on implicit assumptions about what would happen. This may be the case when we deal with the overall developmental impacts such as economic growth, income distribution poverty reduction, food and nutritional security etc. It is important to scale down these overall developmental goals as it relate to the direct beneficiaries so that this could be measured. At least the theory should be convincing up to the immediate and intermediate outcome level.

The logical framework matrix / results framework matrix or the impact chain of a project will assist in developing the complete TOC. A typical impact chain starts from the set of inputs and activities of a project/program to the most highly aggregated development results such as poverty reduction food security, environmental protection etc. (Anandajayasekeram et al 2004). The chain also specifies all the key intermediate steps: the activities of a project, the output, the use that the others make of this output the direct and possible indirect effects, and the implications of the use of these outputs on the ultimate beneficiaries and to the society. The output, outcomes and impact are generally sequentially produced over a period of time. The TOC should show a logical link between intermediate outcome and the potential ultimate outcomes in terms of the developmental goals. A sound TOC is critical to solicit support from the donors, policy makers and administrators.

Drivers of Change

The drivers push the scaling up process forward relentlessly. The common drivers are: proven ideas or models; visionary leaders or champions; **p**olitical and economic crisis or pressure from outside actors (donors, NGOs); incentives and accountability for results; (needed to drive actors and organizations); Markets **(**profit in delivering private goods and services); and empowered rural communities

Spaces or Enabling Environment

Successful scaling up requires effective spaces – an enabling environment - in which the initiative can grow. This includes: adequate fiscal/financial resources; appropriate policy and legal frameworks; markets for the goods and services; partner organizations with the necessary capabilities and capacities; relevant partnerships with clear rules of engagement; political support; environmental and cultural compatibility, a mechanism for learning and knowledge sharing and a social space for the involvement of women, youth and the marginalized.

Pathways for Scaling Up

According to Linn (2012) a scaling up pathway is a sequence of steps that need to be taken to ensure that a successful pilot is taken from its experimental stage through subsequent stages of scale, ultimately judged to be appropriate. This has three components: the type of scaling up; dissemination and advocacy and organizational processes.

Types of Scaling up

Scaling up can be spontaneous or a deliberate. The deliberate efforts are based on the realization that successful scaling up rarely happens spontaneously and rapidly. There are three types of deliberately guided scaling up: expansion or replications; policy/political/legal/institutional scaling up and functional/diversification scaling up (WHO/Expand Net, 2012).

Expansion or replications (also referred to as horizontal scaling up or scaling out) is when innovations are replicated in different geographical sites or are extended to serve a larger or new set of beneficiaries. This can be done by one or many implementing agencies.

Policy/political/legal/institutional scaling up (also called vertical scaling up or scaling up) takes place when formal government decisions are made to adopt the innovation on a national or sub national level, and is institutionalized through the national development plans. In this case, the systems and structures are adapted and resources redistributed to build the institutional mechanisms that can ensure sustainability.

A diversification (also called functional scaling up) involves testing and adding interventions to existing packages. This strategy may be used when an innovation has attained a sufficient degree of coverage and support to indicate that it is likely to continue expanding and the program could benefit from new/additional interventions.

In the recent past because of increased interest in market-oriented agriculture, value chains (VC) are also used as pathways for scaling. A large number of agricultural development initiatives now support VC approach. According to Hartman (2012) there are two concepts of scaling up in a chain: first, the development of an integrated chain is in itself a functional scaling-up, as primary products are 'scaled up' to higher value added goods and taken to market; second VC are taken to a larger scale by increasing the amount of goods produced, processed and sold. Both processes rely on drivers and need to overcome numerous constraints.

In the VC approach, scaling up enables backward and forward linkages and the scale is driven by the profit maximization objective of different actors along the chain. As the VCs operate in a dynamic environment (new processing and production technologies can be introduced, new markets can be accessed and demand can fluctuate) the scale objectives may change over time. Scaling up of pro-poor VCs poses its own challenges, as chains entails both public and private actors with their differing operating culture.

It reality, scaling up rarely occurs in one dimension only. As programmes scale up quantitatively (large number) and functionally (more complexity and additional dimensions) they typically need to scale up politically and organizationally (Hartmann and Linn, 2008: 8-9). Scaling up is thus largely a management issue, and it is important to ask how to manage projects to ensure that positive impacts are maximized (Pachico and Fujisaka, 2004), while acknowledging that multiple actors and scales need to be considered (Buizer et.al 2011).

It is worth noting, that despite these categorizations, most scaling up initiatives address both horizontal expansion as well as vertical scaling up to ensure sustainability. In this paper the term "scaling up" incorporates both horizontal and vertical dimensions and innovations occurring along the VCs.

Approach to dissemination and advocacy

For scaling up to occur, the information needs to be communicated to the ultimate beneficiaries and other stakeholders. Approaches can include training, technical assistance, policy dialogue, peer exchanges (including exchange visits), utilizing interpersonal, mass media and other channels.

A review of existing literature reveals that there are five different approaches to scaling up: the prescriptive approach, the participatory approaches involving multiple actors (pluralism in service provision); approaches based on VCs and the private sector; approaches utilizing ICTs and agro-advisory services and approaches revolving around policy engagement (FAO, 2013; Westermann et al., 2015). One may find that a combination of these approaches is used in any given situation.

Organizing the Scaling–up process

A number of approaches – additive or multiplicative - can be used to implement a proposed intervention. An additive approach may allow greater control over the scaling up process thereby increasing the likelihood that the innovation will be fully implemented as intended. In contrast, a multiplicative approach distributes the tasks of implementing and supporting scaling up across several organizations, thereby enlarging the network of people and institutions available to sustain current and future scaling up initiatives. There are often drawbacks to involving multiple partners. Creating the necessary shared vision of the innovation and the scaling-up process among partners can be time consuming. Building technical capabilities in partner organizations may require additional resources.

Whether scaling up is implemented through a single or multiple agencies effective co-ordination is vital for successful scaling-up. Achieving horizontal alignment through co-ordination mechanisms is essential, yet vertical alignment of institutional incentives and culture from national to local actors is also necessary. Vertical alignment across relevant government agencies, especially in decentralized governances system presents numerous challenges. Donor projects or even national domestic projects may be aligned with national strategy and policy, but regional, provincial; district and local governments often have substantially different priorities and incentives. This institutional alignment is particularly important when scaling up is expected to use domestic funds and when multiple level governments are involved in funding, approval, monitoring and supplying in kind resources.

Ideally, to be effective, both approaches should be combined. Involve the central level to ensure that an innovation is integrated into the system structure, budget and practices, while using the decentralized approach to implement the innovation. The decentralized approach has the advantage of encouraging local initiatives, spontaneity, mutual learning and problem solving (WHO/ExpandNet, 2012). Adaptive strategies and flexibility are important elements of success in scaling up. The local administrative structure to a large extent dictate the approach used .Expansion and replication becomes more complex when the scaling up is managed by multiple organizations in multiple locations as in many Sub Saharan African Countries (SSA).

Concept of Scalability

According to Holcombe (2012), scalability “is the potential of a particular innovation or change to be scaled up or expanded, adapted or replicated”. It is a measure of the degree to which the potential can be realized through deliberate scaling up processes of an innovation. It gives a level of confidence about a proven innovation realizing its potential impact. Scalability deals with the expansion of successful projects about when and whether a decision should be made to adjust, or abandon testing of innovation. There is no established theory or model for measuring scalability and scaling-up successful innovations. There are no blue prints. But there are emerging number of analyses that propose guidelines for analyzing and planning for scaling up.

As pointed out earlier, planning for scaling up, starts at the design of a pilot project. Often a decision to move toward scaling-up must be based on inadequate information, before all conditions are met, and even before the TOC is validated fully. Although it may not be comprehensive, use of simple tools to assess scalability can allow implementing organizations and funders to focus on small number of actions that will pull along the other implementation steps required for a comprehensive scaling up process.

Measuring Scalability

Based on the literature, there are three approaches that were used in the past to measure scalability. The first approach to measure scalability was proposed by Cooley and Kohl (2006) using what is known as the simplicity-complexity index to guide decision making particularly in the early stages of pilot testing. The greater the complexity involved in the innovation model and its implementation, the more difficult it would be for the model to succeed.

The elements that contribute to the complexity of the scaling up include: the number of decision makers; degree of departure from existing practices and behaviours; required changes to values and practices; level of technical sophistication; clarity and level of the complexity of the technology proposed and the requirement for infrastructure and facilities. Using a set of questions related to these variables the simplicity-complexity index of scalability was computed. It is a crude assessment of the simplicity or complexity of an innovation.

A second study commissioned by World Bank and guided by Holcombe and colleagues (2012) used a number of instruments in addition to the simplicity complexity assessment. They used the original set of questions of Cooley and Kohl as a guide, prepared and used a revised tool. This revised tool lays out a set of questions about the factors that will simplify or complicate the implementation of an innovative project and of any scaling efforts. The issues addressed include: clarity and credibility; legitimacy; evidence and observability of effectiveness and efficiency; financial model; alignment and linkages; and complexity, co-ordination and behavioral changes. This study also assessed the drivers of scaling up as well as the spaces and opportunities and threat that may influence the scaling up process. The final decision regarding scalability is made using the outputs of these three analyses.

Based on a combination of a comprehensive review of multiple literature and field experiences, WHO/Expand Net proposed a checklist for assessing the potential scalability of pilot projects. The check list contained 19 questions. This check list was based on a set of recommendations on how to design pilot projects with scaling up in mind, and a set of conditions that should be considered throughout the process of implementation that could facilitate the future sustainable scale up.

In completing this check list a plus (+) refers to a positive factor for scaling up, a minus (-) to a negative one. The fewer the checks in the plus column, the more effort is likely to be required to scale up the innovation. This check list should not be used mechanically, because a large number of plusses in the columns does not necessarily mean a proposed intervention will be scalable. For example if the proposed intervention is not relevant and not aligned with the priorities of the end users, the value of further pursuing the project is questionable; and abandoning may be the appropriate action even if the number of plusses are larger.

Using this knowledge from the literature, the conceptual framework outlined earlier, and personal experiences of the author, a simple model was developed to facilitate decision making with respect to scalability. The details of this proposed model is discussed in the next section.

Proposed Model/approach for assessing scalability

Moving from an innovative idea in a small pilot project to a large scale intervention is an iterative process. There is no specific time in the project cycle to make decision about scaling up. The agency testing the intervention must constantly be thinking about scaling up with particular attention to:

- The innovation itself and the TOC that explains how innovation works to produce the intended outcome;
- Credibility and clarity of the innovation with key stakeholders and potential agencies for scaling up;
- Legitimacy of the innovation, and whether it is locally owned and embedded;
- Perceptions and evidence of the innovations benefit and efficiency;
- Simplicity of the innovation and ease of implementation;
- Financial model that promises sustainability;
- Capability of the implementing organization(s) in terms of leadership and management;
- Enabling policy and legal framework;
- Alignment with the priorities of the end users, government policy and priorities of the other key stakeholders including the donor;
- The type of scaling up and the pathway; and,
- Planning for scaling up, including careful evaluation of the implementation process and the impacts of the innovation.

Some elements identified in the list above are necessary conditions for scaling up while others act as complementary or sufficient conditions. For example relevancy and superiority of the innovation is vital; without those elements, further pursuing the project is questionable. The other aspect of the so called sufficient conditions is that they are fixable and corrective actions can be taken as part of scaling up process.

The process of assessing the scalability of an intervention can be broken down into two components. First, the necessary conditions for scaling up must be present. Once the necessary conditions are met, then, the sufficient conditions should be assessed, prior to making a final decision to move the process forward. Given these premises a six-step process is proposed to measure and assess the scalability of an innovation.

Step 1: Identify all conditions required for successful scaling up-both necessary and sufficient

Step 2: Ensure that all necessary conditions are met. If they are not, do not proceed with scaling up. Assessment of the innovation and its attributes is a key component of this step.

Step 3: Conduct a modified SWOT analysis of the different organizations engaged in the scaling up intervention. This analysis will enable assessment of whether the partner organizations are ready and equipped to support the process. It will also help identify activities that need to be included in the scaling- up project to enhance adoption.

Step 4: Using the scoring approach assess the sufficient conditions required for scaling up. This step involves the estimation of a scalability index.

Step 5: Using the information from steps, 3, and 4 identify actions needed to address the weaker conditions.

Step 6: Using the information gathered in steps 2, 3, 4 and 5, make a decision about the follow-up action needed to move forward.

It is important to keep in mind that this participatory assessment is based on perception analysis. Decisions are based largely on consensus. To minimize biases, the assessment team should be led by a facilitator who is familiar with the process of collective decision-making but has no vested interest in the outcome. In addition to the key stakeholders the team should include members with technical experience needed to diagnose the most likely scalability and operational constraints. In a good assessment process some members are drawn from outside the implementation team representing all key stakeholders with a broad range of technical and social skills.

The four major steps involved in the analysis are described in the following sections.

Assessing the Innovation or the necessary Conditions (step 2)

This step starts by defining what constitutes the innovation package. List all the components/activities that were necessary to implement the innovation. If necessary, each component of the innovation package should be evaluated separately. This will allow the critical components to be identified. Table 1 can be a useful tool to assist in this process.

Table 1: Assessing the innovation or the necessary conditions

	Attributes	Yes	No	Comments/what needs to be done
1.	Proven and tested, evidence exists			
2.	Results/evidence are clearly associated with the innovation			
3.	Addresses the persistent problem of the end users			
4.	Innovation has been tested in local setting and assessed by beneficiaries			
5.	Provides relative advantage over existing practice			
6.	The increased benefits is observable and significant (net benefit is greater than the additional cost, and rate of return is acceptable)			
7.	Easy to understand and install			
8.	Compatible with the culture and norms of the end users			
9.	Compatible with the existing production system and resource-use pattern of the end users			
10.	Innovation is locally owned or embedded			
11.	Potential risk relatively low			
12	Innovation has been tested in a variety of sociocultural and geographic settings			
13.	Innovation is climate smart			
14.	The innovation is likely to be sustainable in the setting where it will be scaled up			

All innovations must meet conditions 1-6; to justify moving to the next step. If the response to any items 6-13 is no, these issues must be addressed in the scaling- up project.

Analysing the preparedness of Key partners (Step 3)

Tools such as the stakeholder analysis and SWOT analysis are useful for this exercise. First, identify the key stakeholders. For each one of them establish which action pathway in the scaling-up process they will contribute, what competencies are required to deliver on the expectations, what capacities and capabilities exist and what needs to be done to bridge the gaps. This information can be gathered using group discussions. Based on the available data, complete table 2.

Table 2: Mapping and analysing the system/assessing the preparedness of the stake holders

Organisations/actors involved in scaling up	Action pathway each actor will contribute to	Competency/capacity requirement	What capacity exists	What needs to be done

Evaluation of Sufficient conditions and Calculation of scalability Index (step 4)

This is a seven step process.

Step 1: Select the key sufficient conditions that will promote scalability. Based on a review of past case studies and the analytical framework proposed, sufficient conditions are listed in column one in Table 3.

The first step in assessing the sufficient conditions is to examine this list in relation to the scaling up proposed. It can be modified to address special conditions depending on the circumstances.

Ideally an ex-ante assessment should be done at the planning stage of the initiative. At this stage costs and benefits are uncertain, and the values assigned to them are best estimates. Cost-benefit analysis seeks to assess private and public investments in terms of both the economic and social benefits generated for society by the investment as well as the economic and social costs incurred by society to execute the project. Such an assessment will assist in convincing the funders and policy makers to support the scaling up initiative. Through ex-ante evaluation, one can define the base line against which progress will be measured - the targets as well as the assumptions used in making the projections. This will also assist in defining the data to be collected for the ex-post analysis.

Step 2: Review and adjust the question sets for each of the sufficient conditions identified. Each sufficient condition has attributes that could either positively or negatively contribute to the scaling up process. A number of analytical questions were used to assess these attributes. A basic set of attributes needed and the relevant questions are provided for each of the sufficient conditions in Annex A1-A8. This list should be examined and adjusted so that they are appropriate for the

proposed scaling up initiative. Since partnerships, coordination and complexity are closely linked these aspects are combined for the scoring process in Table 4.

Step 3: Score the Individual attributes. All attributes discussed and agreed upon in the previous step need to be scored. The scale to be used to measure the degree to which these attributes are met or addressed in the pilot project and/or the proposed scaling up should be determined in a participatory process. The scale can be defined based on the attribute considered. It is important to keep in mind that these are subjective scores based on the existing knowledge and perceptions. Ideally, this should be done by the pilot project implementing team with the other key stakeholders involved in the scaling up initiative-including those with the best relevant technical expertise-under the guidance of an external facilitator.

The scores for individual attributes are established by discussion and consensus. These are summed to yield a total score for the condition being assessed. A low score indicates that these conditions are not strong and action should be taken to address the weakness in the scaling up project.

Step 4: Estimate the effectiveness ratio using the scoring procedure which measures the degree to which this condition is met in terms of its contribution to scalability

Effectiveness ratio = Actual Score / maximum potential score

The maximum potential score for the set of questions is given in column one in Table 3. The actual scores are the estimates from the participatory scoring exercise. The effectiveness ratio is calculated by dividing the actual score estimated by the total maximum score possible.

Table 3: Estimation of scalability Index

	Key elements/sufficient condition	Maximum potential score (1)	Actual score from step (2)	Effectiveness ratio (3)=2/1	Relative importance and score (4)	Contribution to scalability index (5)
1	A clear vision, strategy and pathway for scaling up exists	14				
2	Target group actively engaged in piloting, prepared for scaling up	23				
3	Drivers of change exist and are effective	15				
4	Enabling environment is conducive for successful scaling up	58				
5	There is legitimacy and the innovation is well aligned and embedded	32				
6	The necessary partnership exists, partners are fully engaged, coordination issues are addressed, the process is relatively simple	31				
7	A plan for M&E and learning space exists and is functional	18				
8	Lead agency and partner organisations are identified and ready or implementation	24				
9	An ex-ante benefit-cost analysis (economic and social) is completed and favourable	4				

Scalability index = sum of the scores in column 5

Step 5: Allocate weights (points) across the sufficient conditions. Using a total score of 100, through a participatory process, distribute these points across the sufficient conditions identified in Table 4. This allocation should reflect the relative importance of each of these conditions for successful scaling up. During the pilot testing of the model it was identified that the project staff had difficulties in assigning weights and distributing the total score allocated. To address this issue, the participants were asked to identify conditions from the list that will have a high, moderate and low impact on scaling up outcomes. The conditions which were rated as high (H) was given a weight of 3; the conditions with moderate (M) impact was given a weight of 2 and the condition with low (L) impact was given a weight of 1.Using these weights, the total score of 100 was distributed in order to get the individual scores in column 5 in estimating the Scalability Index in step 6.

Step 6: Calculate the Scalability Index. Using the ratio estimated in step 4 and the scores assigned in step 5, the contribution of each sufficient condition to the scalability is estimated by multiplying the scores in column 4 by the effectiveness ratio in column 3.The scalability index can be calculated by adding the contribution of individual conditions given in the last column in table 4.

Step 7: **Prepare a summary report** of the comments recorded in the last columns of table 2 and Annex A. This will help with identifying corrective actions that should be included in the scaling-up project proposal to address the weaknesses identified.

Using this information, assess the scalability of the project and decide on follow up action needed.

In scoring each of the attributes in step 3, if the total actual score is much lower than the total maximum potential score estimated, then the reason for this should be discussed. The group should also discuss how this could be addressed and ensure that they are included in the design of the scaling up project in case if a decision is taken to move forward.

If the estimated scalability index is greater than 75 then the scalability is high. This indicates that majority of the necessary conditions are in place. Scaling-up will be successful with minimum efforts or additional investment. Note that these innovations have met the necessary conditions-they are relevant, appropriate and superior.

If the score for the index is 50-75, then the scalability is moderate. A number of issues may need to be addressed for the scaling up to be successful. Necessary actions should be taken prior to or during the implementation of the scaled up project.

If the score is less than 50, then the scalability is low. A significant effort is needed to put in place the sufficient conditions before the scaling up is planned and implemented.

It is important to keep in mind that the results of all three assessments - the innovation (the necessary condition), modified SWOT analysis (the capacity and capability of the key partners) and as the scalability index (related to the sufficient conditions) should be considered simultaneously in making a decision whether to scale up or not.

Ideally, the assessment should be done jointly with the organization implementing the pilot project; the agency most likely to lead the scaling up, and the other key stakeholders including the ultimate beneficiaries. It should be facilitated by external technical experts.

It is important to note that there is no single time to make decision about scaling–up. Rather, the agency implementing the pilot project, along with the funder supporting the project and other relevant partners, must constantly think about scaling-up. They should identify which agency will

drive scaling up and the potential champions who will support the process. They should actively seek funding for scaling up, thus eliminating the gap in the momentum of innovation implementation. If the innovation involves several components, partners should reach consensus on whether all or only a subset of the innovations should be scaled up or on a phased approach.

Advantages of the proposed methodology

The proposed methodology has a number of advantages:

- It is simple and easy to implement. It does not involve rigorous analytical techniques. Participatory tools and soft skills are adequate for the analysis involved. Largely depends on perception analysis.
- It does not require much quantitative data but the additional quantitative analysis can complement and add value to the decision making process.
- Given its simplicity, the entire range of stakeholders in the innovation system can effectively participate in the analysis and subsequent decision-making.
- In addition to serving as a measure of scalability, it could be used as a diagnostic tool, to identify potential constraints to scaling up.
- Potential biases can be minimized by employing an external facilitator with no vested interest in the outcome, as well as members with the best possible technical expertise.

Validation and Field Testing of the Proposed Methodology

The proposed model was discussed with the project staff of seven projects linked to Climate Smart Agricultural Programme (VUNA) and field tested in two of the projects. In addition, discussions were held with a panel of experts, with considerable knowledge on R&D processes and scaling up on the technical soundness, suitability, relevance and operational difficulties in using this approach. The key issues addressed were: (i) can the model predict the scalability of a pilot tested intervention? (ii) Is the model practical to use? And (iii) what needs to be done to improve the procedure.

In two of the projects (e-voucher in Zambia and the Super Seed in Zimbabwe) where VUNA is planning to collaborate in the near future, participants also scored the set of questions and estimated the scalability index for those projects. In these two cases the entire approach was discussed in detail. The key findings and the lessons learned are summarized below.

Logic and Technical Soundness of the Approach

There was unanimous endorsement that the proposed approach was logically consistent and technically sound. The approach can be used to assess any “innovation” for scaling up and flexible enough to be context specific. The scalability index can be used to measure the degree of success that can be expected as well as a diagnostic tool to identify additional investments that have to be made for successful scaling- up.

Relative importance of the necessary conditions

The participants were asked to assess the relative importance of the 10 sufficient conditions, identified as necessary for successful scaling up. Based on the participant’s assessment the following conditions were assessed as having high impact on the scalability of successful pilot projects.

- A clear vision, strategy and pathways for scaling up (including the TOC and long term perspective)
- Engagement and preparedness of the target group
- Effective drivers of change
- Conducive enabling environment

- Fully engaged committed, capable strategic partnership (lead agency and partner organizations)
- A functional M&E system and learning space

It is worth noting that participants of the market driven projects gave high scores for ex-ante benefit-cost analysis.

Ease of Application, scoring questions and computations of Index

Only two groups worked through the entire process. Both groups agreed that it is easy to use provided, they have a full knowledge of the innovation and are fully engaged in the processes. They also commented that the detailed question set provide an opportunity to systematically think through the process.

Assessment of selected projects for scalability

The two projects, where VUNA has formed partnerships to support the scaling up process were assessed using the approach. A brief discussion of these projects and the results of the assessment are summarized in Annex B (for more details refer Anandajayasekeram, 2016).

The **e-voucher system in Zambia** is a mobile delivery and tracking system to distribute subsidized inputs to smallholder farmers. Although this is a complex project involving several components, the participants assessed the scalability of the e voucher component only.

The scalability index for the e-voucher component is 77 (see detail in Annex C1). This is an indication that this component can be scaled up successfully, with minimum additional efforts (investments) for institutional development. However in moving forward and incorporating weather index insurance as a component of this package, one has to consider a number of issues (see Annex B).

Given the circumstances and political support, the program will continue. However, there is a need to look for cost effective ways to achieve the objectives, and increase participation of the private sector in service delivery. Efforts should be made to promote competition, private sector investment, and economic efficiency while paying attention to farmers' demand for services.

The **Zimbabwe Super Seeds Co-operative** is a profit oriented small enterprise dealing with seed production, processing, packaging and marketing of open pollinated varieties of maize, sugar beans and cowpeas. The majority of the owners are the farmers. The model is operational and effective. There is a plan to expand the operation to other crops and other provinces in Zimbabwe.

The estimated scalability index of this project is 85 (See details in Annex C2). A number of the key conditions needed for successful scaling up are already in place. Areas needing further attention are identified in Annex B. The scalability of this business model is very high. This is largely due to the commitment of the CEO and the stakeholders. They are prepared to forgo the short term benefits in favour of the long term growth of the company. To address the issue of collaterals for bank loans, shareholders decided not to take the dividend. The profit is used to accumulate the capital base. They bought a house and a warehouse space. This fixed asset is used as collateral to obtain credit from the bank. In addition to the capital required, the high interest rate is also an additional constraint for expansion and scaling up. An effective interest rate policy can speed up the rate of scaling up .It is worth noting that this is a public private investment in which scalability depends on the commercial sustainability of the private investment.

Guidelines for Using the proposed Approach

Invariably scaling up implies a set of interventions, including the processes, and partnerships necessary to build sustainable implementation capacities. So the first step in the analytical process is to clearly define the package for scaling up. If there are multiple components it may be important to assess each component separately.

In the real world one may encounter three different scenarios with respect to scaling up.

Scenario 1: scaling up as an integral part of the R&D or innovation development process (development, adaptation, dissemination, and adoption and utilization)

Scenario 2: the successful innovation was developed and pilot tested in selected sites within a country and the scaling up deals with replication across the wider target group.

Scenario 3: an innovation that was successful elsewhere is considered suitable for the situation at hand (intelligent borrowing/open innovation). Projects using models that have been demonstrated elsewhere may actually face greater challenge to scaling-up, if the delivery system is complex or a large behavioral change is required. Here, there is a need for local validation of the intervention as part of the scaling up process.

In Scenarios 1 and 3, there is a need to validate the performance of the "innovation" to ensure it is relevant, superior in terms of performance (including profit); and compatible. In these cases it is necessary to assess all three components – the "innovation", partnerships and institutional arrangements, and scalability index – to judge the sufficient conditions.

In Scenario 2, since much is known about the innovation, it is adequate to assess the partnerships and institutional arrangement and the necessary conditions in term of scalability index.

That the proposed methodology not only provides a level confidence but also function as a diagnostic tool to identify the constraints to scaling up. Once diagnosed, these weaknesses can be effectively addressed in the scaling up project.

The basic questions of interest of many development partners are:

- How can we evaluate a pilot project proposal to decide whether it is worthwhile to invest (a sort of an ex-ante assessment/appraisal)?
- At the completion of a successful pilot project, how can one assess whether it should be replicated (a sort of ex -post assessment) either within the country or in other countries?

In both cases, the various aspects considered are relevant for decision-making. However, in the case of replicating a successful pilot project, more reliable data will be available. Therefore, the analysis will be more subjective in the design stage of a pilot project but will be more objective in assessing the replication of a successful pilot project. Thus the same approach can be used to address both questions, but the emphasis and rigour will vary depending on the situation. In assessing the pilot project, heavy emphasis will be placed on the first step. It is important to make sure that the intervention is relevant, technically feasible, economically viable, socially acceptable and compatible. However, for successful scaling up, the appropriate policies, partnerships, institutional arrangements

and other enabling environments are crucial. Therefore, in this case, heavy emphasis will be placed on steps 2, 3 and 4. In both cases B-C analysis is a must to guide decision-making.

The issue of simplicity is relevant, depending on the purpose and also who performs this analysis (an analyst or the decision maker). This is similar to performing a policy analysis and policy brief intended to assist decision- making. The implementers of the pilot project should aim for detailed analysis, which can be used to create a simplified matrix that can assist the decision maker. A sample matrix is presented in Table 4. The higher the number of "no" responses, the lower is the scalability. The comments should identify issues related to the criteria under consideration.

Since scaling up is a costly exercise, a little time and energy spent in doing the analysis may have a significant social and economic benefit in the long run.

Table 4. Check List for Making Decision on Scaling Up

Criteria	Assessment			
	Yes	Yes Partially	No	Comments
Innovation/intervention relevant, superior, and compatible				
The target group/end users are fully prepared to participate				
All four components of scaling up - reach, outcome ,equity and sustainability- are addressed				
Drivers of change exist and effective				
Relevant enabling environment is conducive for scaling up				
Partnership: Roles and responsibilities are defined and clearly understood.				
Roles and responsibilities are in line with mission and mandata of partner organization				
Lead and facilitating organizations have the capacity and capability to deliver				
A plan for M&E and learning space exists and operational				
An indicative ex-ante cost/benefit analysis completed and favourable*				

*It is important to note that this is an investment decision. Depending on the nature of goods and services, one has to decide on the appropriate type of analysis- social vs. private or both.

Finally, greater care should be taken in using the scalability Index for comparing projects. The main purpose of developing this methodology is to assess the scalability of a successful pilot tested innovation or intervention. This is a self-assessment process that relies heavily on the deep knowledge of the participants about the content and processes involved. Conclusions are drawn from perception and consensus. The methodology can be applied to the entire package in the intervention or an individual component. There may be specific reasons to explain the scalability Index computed. Therefore, mechanical application of the approach, and superficial comparison of scalability Indices, between projects is likely to result in misleading conclusions. It is important to keep in mind that the scalability index is computed to support learning and facilitate improvement in the scalability of a given intervention or innovation.

The model application depends on the nature of the project (public, private, and public-private), the context and the investment decision that has to be made. This highlights the need to apply the model differently for different types of pilot projects. Therefore further modifications and refinements are needed to test the robustness, wider applicability in making it context specific.

The numerical index score should not be viewed as carrying mathematical precision, because the scoring is based on subjective judgments. This approach is in no way a substitute for other rigorous assessment of scaling-up options such as B-C analysis.

Conclusion

Scaling up is an iterative process and a costly investment. A good understanding of the process is critical for informed decision making. A six step process using participatory tools and scoring method is proposed to compute the Scalability Index and assess the scalability of a given innovation package/intervention. Partners involved in the validation considered the model to be logically consistent and technically sound. The model can also be used as a diagnostic tool, to identify potential constraints to scaling up. However, mechanical application of the approach or superficial comparison of scalability indices of different projects is likely to result in misleading conclusions. Further work is needed to test the robustness of the approach and its wider applicability.

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Annex A

Annex A1: Scoring vision and strategy

This is an overall description of the innovation to be scaled up, the intended beneficiaries and how scaling will be organised, financed and implemented. How will challenges be overcome and opportunities exploited? How fast will it be implemented? How will results be monitored and lessons shared? The scaling up strategy is an opportunity to ensure that **work is planned thoroughly.**				
Attribute	**Dimension**	**Scoring guide**	**Actual score**	**Comments**
A common vision for scaling up exists	Vision exists	Yes = 2 No = 1		
	Vision is shared by all stakeholders	Yes = 2 No = 1		
The strategy has adequately addressed the threats and opportunities	Threats and opportunities are clearly identified	Yes = 2 No = 1		
	Threats and opportunities are addressed	Fully/adequately addressed = 3 Partially addressed = 2 Not addressed at all = 1		
Time-dependent indicators are clearly identified		Indicators clearly defined = 3 Expectations somewhat clear = 2 Expectations not clear = 1		
Scaling-up project is designed in light of agreed stakeholder expectations		Yes = 2 No = 1		

Annex A2: Scoring involvement and capacity of end users

The target beneficiaries/end users are not passive recipients of innovations. They are active partners in the design and implementation of the scaling-up process. Full participation of end users is critical.				
Attribute	**Dimension**	**Scoring guide**	**Actual score**	**Comments**
Engagement	Target group for scaling up is well defined	Yes = 2, No = 1		
	Innovation is a priority for the target group	High = 3, Medium = 2 Low = 1		
	Target group is involved in designing the pilot project	Actively = 3 Passively = 2 Not involved=1		
	End users were involved in the monitoring and evaluation of pilot project	Actively = 3 Passively = 2 Not involved = 1		
	Concerns and suggestions of end users were addressed in adapting the innovation	Completely = 3 Partially = 2 Not used = 1		
Capacity	End users have the necessary skills to successfully implement the innovation	Necessary skills exist = 3 Need skills but addressed = 2 Need skills but not addressed = 1		
	End users have necessary financial resources to successfully implement the innovation	No external resource needed = 3 External resources needed, mechanisms in place = 2 External resources needed but not in place = 1		
	Risk associated with the innovations are addressed and mitigated	Fully = 3 Partially = 2 Not addressed = 1		

Annex A3: Scoring drivers

Drivers play a catalytic role in promoting the adoption of innovation. This may be an individual/group/organisation committed to the scaling up, either formal or informal. Drivers are the champions and leaders of initiating and promoting the implementation of scaling up. It is important to keep in mind that driving and delivery are very different functions. Drivers need a variety of skills: ability to win over local support and build an effective coalition; competency in technical areas; skills in management and training; and a talent for resource mobilisation.

Attribute	Dimension	Scoring guide	Actual score	Comments
	Clearly identified champions and leaders in place	Yes = 2 No = 1		
	Champions are well respected individuals in the society/community	Yes = 2 No = 1		
	There is an articulated demand for innovation	Strong = 3 Weak = 2 None = 1		
	A credible and demonstrated model exists and is widely known	Yes, well known = 3 Yes, partially known = 2 Not known = 1		
	Champions have the necessary skills	Yes = 2 Skill-building required = 1		
	Resources for champions to operate are provided	Fully = 3 Partially = 2 Not at all = 1		

Annex A4: Scoring the enabling environment

These are the external conditions that affect the processes and prospects of scaling up. An understanding of the environment within which the scaling up occurs permits realistic expectations of the extent to which change is possible. External factors that are influencing or likely to influence the scaling-up process should be identified and addressed to exploit opportunities and to minimize or eliminate threats.

Attribute	Dimension	Scoring guide	Actual score	Comments
Policy environment	Innovation and scaling up in line with existing national policies	Yes = 2 No = 1		
	Additional policy support is needed to enhance scalability	Needed policies identified and addressed = 3 Needed policies identified but still being enacted = 2 Needed policies identified but not addressed = 1		
	There are advocates to engage with policy makers	Yes, active = 3 Yes, passive = 2 No = 1		
Cultural environment	Innovation in line with norms, attitudes and beliefs of the community	Yes = 3 No, but easily addressed = 2 No, and difficult to address = 1		
	Innovation in line with norms, values and operational culture of the organisations involved	Yes = 3 No, but easily addressed = 2 No, and difficult to address = 1		
Political space	There is political support for the project	Strong = 3 Moderate = 2 Weak = 1		
	Political considerations are incorporated in the design of the project	Fully = 3 Partially = 2 No = 1		
	Support from farmer groups and civil society organisation exists	Strong = 3 Weak = 2 No = 1		
	There is political stability for uninterrupted scaling up	Yes = 2 No = 1		

	There is strong public endorsement for the innovation	Strong = 3 Moderate = 2 No = 1		

Enabling environment (continued)				
Attribute	**Dimension**	**Scoring guide**	**Actual score**	**Comments**
Financial space	A financial sustainability plan exists	Yes = 2 No = 1		
Adequate funding assured	Yes = 3 Additional funding needed, a resource mobilisation plan exists = 2 Additional funding needed, no resource mobilisation plan = 1			
Continuous engagement with donors and others to build a broad base of financial support	Yes = 2 No = 1			
Innovation generates resources	Yes = 2 No = 1			
Capacity space	Competencies among the different agencies and actors exist	Adequate = 3 Inadequate, plan to address exists = 2 Inadequate, no plan to address = 1		
Communication and knowledge management space	A communication strategy exists	Yes = 2 No = 1		
Mechanisms for sharing findings and insights in place	Yes = 2 No = 1			
Adequate resources provided for effective communication	Adequate = 3 Moderate = 2 No = 1			
Natural resources and environmental space	Effect of the innovation on the environment is known and well understood	Yes = 2 No = 1		
Environmental consequences are addressed in the design and evaluation	Fully = 3 Partially = 2 Not addressed = 1			
Economic space	Economic situation is viable for end users and private sector	Yes = 2 No = 1		

Annex A5: Scoring legitimacy and alignment

For an innovation to succeed there should be alignment between the innovation being tested and the policies and practices of the governments, donors and other major stakeholders, particularly those agencies most likely to contribute to implementation. Although outside agencies can contribute and facilitate, scaling up needs to be integrated into the national policies and priorities in order to gain legitimacy. The projects must also be seen as locally embedded.				
Attribute	**Dimension**	**Scoring guide**	**Actual score**	**Comments**
Legitimacy and alignment	The innovation is aligned with government goals, priorities and policies	Yes = 2 No = 1		
	The innovation is aligned with the mandate and practices of the lead implementing agency	Strongly = 3 Moderately = 2 Weakly = 1		
	The innovation is aligned with the policies and priorities of the donors	Strongly = 3 Moderately = 2 Weakly = 1		
	The innovation is aligned with the mandate and practices of the facilitating organisations	Strongly = 3 Moderately = 2 Weakly = 1		
	The innovation is aligned with the practices of the target group	Yes = 2 No = 1		
	The innovation is relevant to the perceived needs of the stakeholders	Yes = 2 No = 1		
Embedded	Innovation is locally owned and embedded	Yes = 3 No, but plan in place = 2 No, and no plan = 1		
	There was an active engagement of government agencies during pilot testing	Strong = 4 Moderate = 3 Low = 2 Not at all = 1		
	There was active engagement of the donors during pilot testing	Strong = 4 Moderate = 3 Low = 2 Not at all = 1		
	Government is willing and ready to incorporate the innovation into ongoing development activities	Yes = 3 Maybe = 2 Not sure = 1		
	Donors are ready and willing to incorporate the innovation into ongoing development activities (long-term commitment)	Yes = 3 Maybe = 2 Not sure = 1		

Annex A6: Scoring partnership, coordination and behavioural change

Partnerships and institutions are the core of innovation. Scaling-up processes involve a multiplicity of actors and decision-making. Meaningful partnership among the key actors is critical for success. The number of actors, decision-makers and decision points can influence the process. The more actors and agencies are involved, the greater the challenge of coordination. The more power to decide is diffused, the greater the challenge of coordination. Behavioural change is also **crucial for scaling up.**

Attribute	Dimension	Scoring guide	Actual score	Comments
Partnerships	The key stakeholders are identified and included	Yes = 2 No = 1		
	Inputs from the stakeholders are sought and incorporated	All inputs incorporated = 3 Some inputs incorporated = 2 Inputs not included = 1		
	Scaling-up project is designed in light of agreed-upon stakeholder expectations	Yes, fully = 3 Yes, partially = 2 No = 1		
	A partnership strategy exists	Yes = 2 No = 1		
	Roles, responsibilities and commitments of partners are clearly articulated and understood	Yes, fully = 3 Yes, partially = 2 No = 1		
	Rules of engagements are clear and understood by all partners	Fully = 3 Partially = 2 No = 1		
Coordination and Complexity	Number of key actor groups kept to the critical minimum	3-5 actor groups = 3 5-7 actor groups = 2 More than 7 actor groups = 1		
	Threats and opportunities are addressed	Fully/adequately addressed = 2 Partially addressed = 1 Not addressed at all = 0		
	The number of decision points involved kept to the minimum	Less than 3 = 3 3-5 points = 2 Greater than 5 = 1		
Behavioural change	Successful scaling up requires changes in behaviour of the target group	Significant changes = 1 Moderate changes = 2 Minimum changes = 3		
	Scaling up requires changes in behaviour of the implementing and facilitating agencies	Significant changes = 1 Moderate changes = 2 Minimal changes = 3		

Annex A7: Scoring monitoring and evaluation

Monitoring the implementation and periodical evaluation is crucial for assessing progress, identifying aspects that are not working and identifying lessons learned. Good monitoring documents that the innovation can be implemented and produce the intended results, thus providing evidence of scalability.				
Attribute	**Dimension**	**Scoring guide**	**Actual score**	**Comments**
M&E	An M&E system exists	Yes = 2 No = 1		
	A results framework exists	Exists, fully operational = 3 Exists, partially operational = 2 Does not exist = 1		
	The implementation process is monitored and documented	Yes = 2 No = 1		
	Active engagement of the beneficiaries in M&E	Strong = 3 Weak = 2 None = 1		
	Systematic evaluations are included in the design, and resources are allocated	Yes = 2 No = 1		
	Intermediate outcomes are measured, documented and shared	Monitored, documented and shared = 3 Monitored and documented = 2 Not monitored = 1		
	Opportunities exist to share results and to incorporate new learning into the implementation process	Yes, formal = 3 Yes, informal = 2 No = 1		
Ex–ante benefit-cost Analysis	B-C analysis completed	Yes = 2 No = 1		
	B-C ratio and IRR are competitive and attractive	Yes = 2 No = 1		

Annex A8: Scoring facilitating organisations and intermediaries

"Delivery organisations" are those that are actually involved in the scaling-up operation, facilitating the wider use of the innovation. These may include government agencies, extension services, NGOs, community organisations, service providers and donors. An assessment of the organisational capacity of an agency relies on questions about leadership, systems and learning capacity.

Attribute	Dimension	Scoring guide	Actual score	Comments
Lead Agency	A lead organisation has been identified	Yes = 2 No = 1		
	Members of the lead organisation were involved in the design and implementation of the pilot project	Actively = 3 Passively = 2 Not involved = 1		
	The leadership capacity of the lead agency is adequate for successful implementation	Adequate = 3 Inadequate, but plan in place = 2 Inadequate, and not planned = 1		
	The staff of the lead agency has the capacity to implement the project	Yes = 3 No, but plan to build capacity exists = 2 No, and no plans = 1		
	The lead agency has the culture of a learning institute	Yes = 2 No = 1		
Facilitating Organisations	The leadership of the facilitating organisation is adequate for effective implementation	Adequate = 3 Inadequate, but addressed in the plan = 2 Inadequate, and not addressed = 1		
	Staff of the facilitating organisations has the capacity to implement the projects	Yes = 3 No, but addressed in the plan = 2 No, and not addressed = 1		
	Staff of the facilitating organisations was involved in the design and implementation of the pilot project	Actively involved = 3 Passively involved = 2 Not involved = 1		
	The other facilitating organisations have the culture of a learning institute	Yes = 2 No = 1		

Annex B: Result of Field Testing of the Proposed Approach - Selected Projects

Project	Electronic Voucher System in Zambia	Zimbabwe Super Seed (ZSS)
Project description	The e-voucher is an integral part of the Zambian Farmer Input Support Program (FSIP) that was started during the 2002-2003 season. The farmers paid 20-50% of the market price for fertilizer and seeds. The e-voucher component was introduced during the 2015-2016 season in 13 selected districts. E-voucher is a mobile delivery and tracking system to distribute subsidized inputs to farmers through agro dealers and input suppliers. It was expected to expand to 39 districts during 2016-2017. It is also proposed to integrate weather index insurance into FSIP.	Zimbabwe Super Seed Co-operative Company is a profit-oriented small enterprise established in 2012 involved in seed production, processing, packaging, and marketing of open pollinated varieties of maize, sugar beans and cowpeas. Currently, ZSS is providing breeder seeds and technical backup for 744 smallholder farmers in Gutu, Bikita, Masvingo and Zaka to produce seeds. The seed is procured, processed and sold in 2, 5 ad 10kg packages. ZSS has two types of clients, the intermediate clients (rural trader shops, retail chain hardware stores) and end users (mainly the smallholder communal farmers). A key feature of ZSS is its strong community involvement in terms of ownership, seed production and utilisation. There is a plan to expand the operation to other crops and other provinces in Zimbabwe.
Estimated scalability index	The scalability index of the e-voucher component is high (estimated at 77). Most of the sufficient conditions are in place.	The estimated scalability index is 85. The scalability of the business model itself is very high.
Key issues needing attention in moving forward and incorporating weather index	• Although the focus was on e-voucher, the components of the overall package is complex – improved seed and fertiliser; innovative partnerships (development partners, government, independent NGOs, private sector, banks and farmers); institutional innovation and service delivery (e-voucher); coverage of large number of enterprises and inputs (livestock, fish, lime, equipment, etc.); capacity building and weather index insurance. • There are two issues related to sustainability: financial sustainability is a serious concern as it currently consumes about 50% of the agricultural budget. The IMF has a significant influence in setting economic policy and is not in favour of massive subsidies. As the program is politically driven, the duration is largely a political decision and does not have an exit strategy. • Currently, the M&E system is separated from the implementation. M&E and the associated learning need to become an integral part of project planning and implementation. • Currently, there is very limited experience on the use of weather index insurance in the country. It is important to systematically and critically appraise the effectiveness, efficiency, potential impacts and lessons learned to guide this process forward.	• A number of key conditions – a clear vision, strategy, expansion pathway, business model, organisational capacity and readiness, working partnerships, drivers – exist and the scope of expansion is very clear. • The project requires a partnership strategy, continuous extension support, a proper benefit-cost analysis, and a continuous systematic assessment of progress and performance to document lessons and experiences.

Annex C

Annex C1: Estimation of scalability index for the e-voucher system

	Key elements/sufficient condition	Maximum potential score (1)	Actual score from step (2)	Effectiveness ratio (3) = 2/1	Relative importance and score (4)	Contribution to scalability index (5)
1	A clear vision, strategy and pathway for scaling up exists	14	10	0.71	12	8.52
2	Target group is actively engaged in piloting and prepared for scaling up	23	20	0.87	12	10.44
3	Drivers of change exist and are effective	15	15	1.00	12	12.00
4	Enabling environment is conducive for successful scaling up	56	47	0.84	12	10.08
5	There is legitimacy and the innovation is well aligned and embedded	32	30	0.94	8	7.52
6	The necessary partnership exists and the partners are fully engaged Co-ordination issues are addressed and the process kept relatively simple	31	26	0.84	12	10.08
7	A plan for M&E and learning space exists and is functional	18	9	0.5	12	6.00
8	Lead agency and partner organisations are identified and ready for implementation	24	20	0.83	12	9.96
9	An ex-ante cost benefit analysis is completed and favourable	4	1	0.25	8	2.00

Scalability index (sum of the scores in column 5) = 76.58

Annex C2: Estimated scalability index of Zimbabwe Super Seed Project

	Key elements / sufficient condition	Maximum potential score (1)	Actual score from step (2)	Effectiveness ratio (3)=2/1	Relative importance and score (4)	Contribution to scalability index (5)
1	A clear vision, strategy and pathway for scaling up exists	14	14	1	12.48	12.48
2	Target group is actively engaged in piloting and prepared for scaling up	23	15	0.65	8.33	5.41
3	Drivers of change exist and are effective	15	13	0.86	12.48	10.73
4	Enabling environment is conducive for successful scaling up	56	48	0.96	8.33	7.99
5	There is legitimacy, and the innovation is well aligned and embedded	32	29	0.87	12.48	10.86
6	The necessary partnership exists and the partners are fully engaged; coordination issues are addressed and the process kept relatively simple	31	29	0.94	12.48	11.73
7	A plan for M&E and learning space exists and is functional	18	17	0.94	12.48	10.86
8	Lead agency and partner organisations are identified and ready for implementation	24	24	1	12.48	12.48
9	An ex-ante cost benefit analysis is completed and favourable	4	1	0.25	8.33	2.08

Scalability index (sum of the scores in column 5) = 84.62