A new framework for assessing systemic change in Katalyst: the pilot study in local agri-business network

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This is a much-shortened version of the final report of a study commissioned by Katalyst to assess systemic changes due to Katalyst's interventions in local agri-business networks in Bangladesh. The original report was written by Marcus Jenal, Meso-partner, and Anna Hanchar, Cognitive Edge.

Abstract

Katalyst, a large market systems development project in Bangladesh, has piloted a new systemic change measurement framework. Katalyst is co-funded by DANIDA, SDC and DFID. The framework complements the existing systemic change assessment framework consisting of the Adapt-Adopt-Expand-Respond matrix and the scale/sustainability index. It specifically looks at systemic changes at the level of the beneficiaries, i.e. the outcome level of the project. The framework searches for three dimensions of systemic change: (i) whether a **transformational change** happened in behaviours, perceptions, attitudes or beliefs of beneficiaries, (ii) whether this change has reached a critical mass or **tipping point,** and (iii) whether there are signs that this new behaviour, perception, attitude or belief leads has been **formalised** in organisations and institutions. The pilot study performed by Katalyst used innovative mixed research methods such as narrative research and SenseMaker software. The pilot was specifically looking for changes instigated by the local agri-business networks that have been introduced by Katalyst in Bangladesh. The results of the pilot show clear signs for systemic change achieved by the interventions, but also remaining challenges for institutionalising the model at the central government level.

Katalyst
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Content

1 Introduction and background

1.1 A new systemic change framework for Katalyst

Swisscontact is implementing in Bangladesh the multi-donor funded project Katalyst, which is currently in its third phase. The project applies a Making Markets Work for the Poor (M4P) approach. The purpose of the project is to make markets in Bangladesh more inclusive for poor farmers, providing them a way out of poverty. In the logframe of phase 3, Katalyst has a target to provide evidence that at least three sectors show systemic changes towards better inclusion of small farmers.

In May 2015, Katalyst engaged Mesopartner to propose a framework to assess systemic change with a focus on the outcome level of the project. The proposed framework attempts to show whether there is a systemic effect of the project's interventions on beneficiary level. A feasibility study for the application of the framework was done in the fish sector in May 2015.

Katalyst considered the feasibility study successful and this report describes the application of the new framework to the local agri-business network interventions. Mesopartner and Cognitive Edge conducted the pilot study between October and November 2015 in collaboration with the Katalyst team.

1.2 The local agri-business networks

In Bangladesh, public agricultural extension departments provide important services, information and knowledge to farmers. However, despite having the mandate to extend information services to all farmers on a national level, delivery approaches and resources are insufficient to meet this objective.

Local agri-business networks are an attempt to address the challenges of the growing and changing demands for information services by farmers in a decentralised and demand-driven way. The networks improve the connection between extension officials and farmer groups by building local public-private initiatives that bring together farmers, extension officers and local traders. Local traders associations thereby take a leading role in coordinating the networks.

Katalyst started piloting local agri-business networks in 2007. The local agri-business model was successfully expanded throughout all three phases of Katalyst and now covers a majority of Upazilas (sub-districts) in Bangladesh. In phase 3, the focus has been on further strengthening and deepening the achieved changes[1].

2 Capturing systemic changes in Katalyst

2.1 Historical development of the existing frameworks

Systemic change is at the heart of the M4P approach. Changing market systems to become more inclusive for poor people as producers or clients is the essential mechanism of this approach. Accordingly, systemic change was already mentioned in phase 1 of the project, although no clear definition was provided at that time. In phase 2, the project was scaled up to a national level. The subsequent challenge of how to measure changes in a national market system triggered the debate about systemic change in the project.

[1] A comprehensive case study on Katalyst's work with local agri-business networks is available here: http://katalyst.com.bd/docs/case_studies/Katalyst_case_study-7.pdf

In 2011, a first version of a systemic change measurement framework was created, which later developed into the Adapt-Adopt-Expand-Respond (AAER) framework [2]. From 2012 Katalyst has started to collect evidence systematically using the AAER framework as part of its Comprehensive Sector Strategies. The AAER framework is still used to qualitatively describe the different stages of innovation spread and systemic change.

As a response to the inclusion of a systemic change target in the phase 3 logframe, a systemic change index was developed. The project calculates the index by taking into account two specific dimensions of change: scale, the project's outreach, and sustainability, signifying whether service providers are likely to continue providing the new service[3]. As a basic sign of emergent change, the project also measures copying and crowding-in of service market actors beyond the direct partners of the project.

The systemic change measures used so far focus on changes in the service market, which in Katalyst's case lies at the output level. As such, they can be used to spot early signs of systemic change linked to the project's theory of change. In order to assess the full spectrum of systemic change, these measures need to be complemented by measures beyond the service market, i.e. at outcome level. They also need to capture changes that were not predicted in the project's theory of change. This is the intention of the new framework introduced here.

2.2 Objectives for developing the new framework

The existing frameworks for assessing systemic change used by Katalyst do not quantitatively show behavioural or attitudinal changes of the market actors beyond service providers. As such, they do not provide an overall picture of the systemic changes and how they fit together to a sustainable inclusion of the poor into the markets. The objective of testing a new, complementary systemic change framework was to close this gap. The feasibility and pilot studies have shown that this new framework is able to capture transformations beyond the service market level and make conclusions for a whole sector.

It was not the objective of the new framework to replace the existing measures. All frameworks used in Katalyst look at different aspects of, and have different perspectives on, systemic changes and are therefore complementary. They are useful in different situations to generate the information for different requirements.

3 Conceptual understanding of systemic change

This section introduces in a summarised way the conceptual understanding of systemic change building the theoretical basis used for the new measurement framework.

[2] The framework is introduced in detail in Nippard, D., Hitchins, R. and Elliott, D. (2014). *Adopt-Adapt-Expand-Respond: a framework for managing and measuring systemic change processes.* The Springfield Centre for Business in Development.
[3] Jalil, M. M., Kashem, N. and Azam N. (2013). *Measuring Systemic Change*. Katalyst.

Markets can be characterised as complex social systems[4]. Complex systems are dynamic and involve a large number of elements. In market systems, these elements are people or organisations interacting with each other.

The interactions of the individual actors lead to emergent structures that cannot be observed on the level of the individuals (Figure 1). This adds capabilities to the system that cannot be obtained by individual actors. A simple example of an emergent structure is a community. The community enables a small population of people to live together in close proximity, profiting from each other's presence in terms of security, social integration, etc. A community enables individuals to do things they could not have done alone. At the same time, being a member of a community constrains individuals in how they can behave.

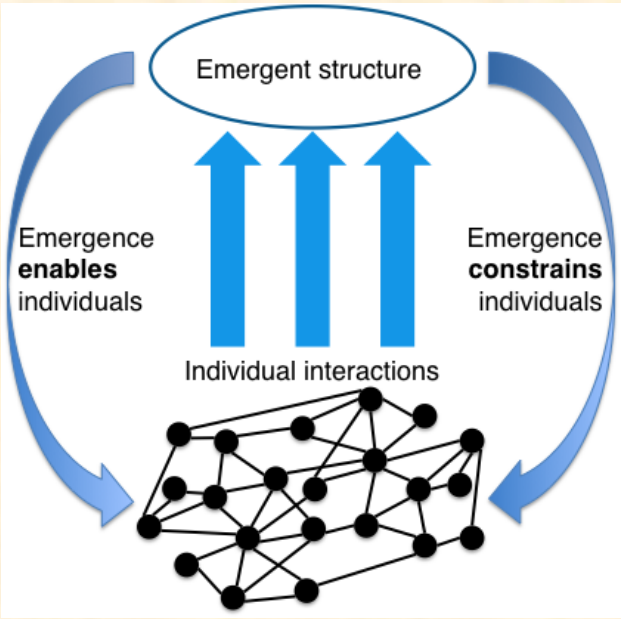

Figure 1: A stylised depiction of emergence, where individual interactions lead to an emergent structure which both enables individuals to do things but also constrains the individuals' options.

Complex social systems are unpredictable on the level of the individual actor. They are, however, somewhat stable and predictable on the level of their emerging structure[5]. Hence, systemic change is defined as transformations in the structure of a system. Positive transformations enable individuals to do things they could not have done before. In this way, the changes contribute to the development of the system.

Systems never exist in isolation. While a system can show consistent new patterns of behaviour locally, it can be forced back into a previous pattern by its environment over time. Changes can only be sustained if they reach a critical mass. One way to get some indication on whether the change is going to sustain is to look at the scale or spread of change. Scale not in a sense of bare numbers of people, but rather in a sense of a process of change spreading through a series of open systems. Such systems could be neighbouring communities or interconnected market systems. If the changes can be seen in a critical mass of people beyond the location or group of people where it originated, it will likely influence the future path of the system.

The structure of a system is also reflected in its institutions. The more an emerging structure is formalised in institutions, the more stable it is[6]. Institutionalisation can be seen as a sign of stability of the new structure of a system. It is a mechanism to formally embed the new capability into the system. Hence, institutionalisation of informal behavioural patterns can be a sign for advanced and sustainable systemic change. Institutionalisation can take different forms such as changes in processes, rules, manuals, training curricula, etc. It can take place

[4] Jenal, M. & Cunningham, S. (2013). *Gaining systemic insight to strengthen economic development initiatives - Drawing on systems thinking and complexity theories to improve developmental impact.* Mesopartner Working Paper No. 16.
[5] For more detail, see Juarrero, A. (2000). *Dynamics in Action: Intentional Behavior as a Complex System*. Emergence, 2(2), 24–57.
[6] Formalisation and institutionalisation can also be dangerous if the institutions become too rigid. This can lead to a catastrophic breakdown if they are not changing fast enough with the context.

in networks of people, businesses or government agencies. Institutionalisation can also be about changes in relationships between different types of actors, for example between farmers and service providers, businesses and the government, or universities and businesses, if these changes are seen as 'the new normal' of interaction.

4 Katalyst's new systemic change framework

4.1 Features of the new framework

The adopted new systemic change framework looks at three different dimensions of change:

1. To discover a **transformational change** in the way of 'how things are done' by the relevant actors is the starting point. The beliefs and predominant attitudes of the actors in the system largely define what can and what cannot be done, i.e. 'how one has to behave'. An effective way to capture change in beliefs, attitudes and behavioural norms is through capturing everyday narratives. Using sophisticated research techniques, the changes in narratives are quantified, not only described qualitatively.
2. **Scale** investigates whether change is reaching a critical mass. For doing so, it asks whether people are affected by changes in the system rather than by the project directly. This shows that change is not only driven by the project but actually happens in the system itself, affecting a wider number of people indirectly.
3. **Institutionalisation** looks for signs that indicate that the changes are embedded in the institutions of the system and also captures commitment to maintain and potentially further spread the changes by the system actors.

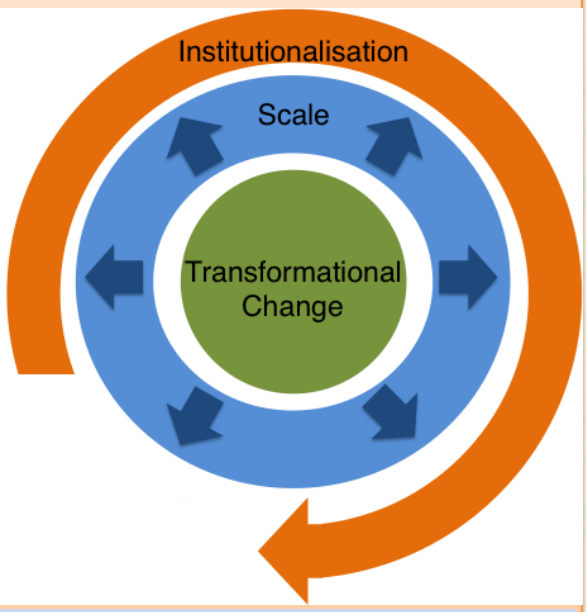

Figure 2 Illustration of the new systemic change framework used for this study

Scale and institutionalisation in the framework above are similar to the stages of expansion and response in the AAER framework, but defined using a complex systems perspective. Scale is not simply seen as others copying an innovation introduced by the project. Instead, it asks whether the spread of changes in behaviours and attitudes of different system actors has reached a critical mass. Institutionalisation specifically scans for formalisation of new behaviours and attitudes.

4.2 Methodology to measure systemic change

Different methods were combined to pilot the new framework in the local agri-business network interventions of Katalyst. Document study and key informant interviews were used to assess institutionalisation of the change. A narrative research approach based on SenseMaker[7] was used to assess transformation by collecting a statistically significant number of narratives from stakeholders. The SenseMaker data collection process has three steps:

[7] SenseMaker is a proprietary research method and tool developed by Cognitive Edge (http://cognitive-edge.com)

1. By asking for a specific experience, the respondents' memory is triggered to mentally place them in a situation related to the field of interest that they have lived through.
2. Respondents record a narrative of that experience and, through so doing, bring the experience into working memory.
3. Respondents are asked to signify (interpret) their own narrative using a set of carefully crafted questions.

'Self-signification' of the stories by the respondents is a key aspect of this method. It allows respondents to interpret their own experiences, avoiding expert bias. Self-signification furthermore, enables respondents to give additional meaning to each situation that is not explicitly expressed in the story. This provides a rich set of quantitative meta-data for analysis.

For the local agri-business network study, respondents were asked to share a specific experience of support they have received from people outside their family related to farming. They were explicitly invited to share both positive and negative experiences. After sharing an experience, which was recorded with a mobile device, the respondents were asked to answer a number of significant questions built up of triads (Figure 3), dyads (Figure 4) and multiple-choice questions.

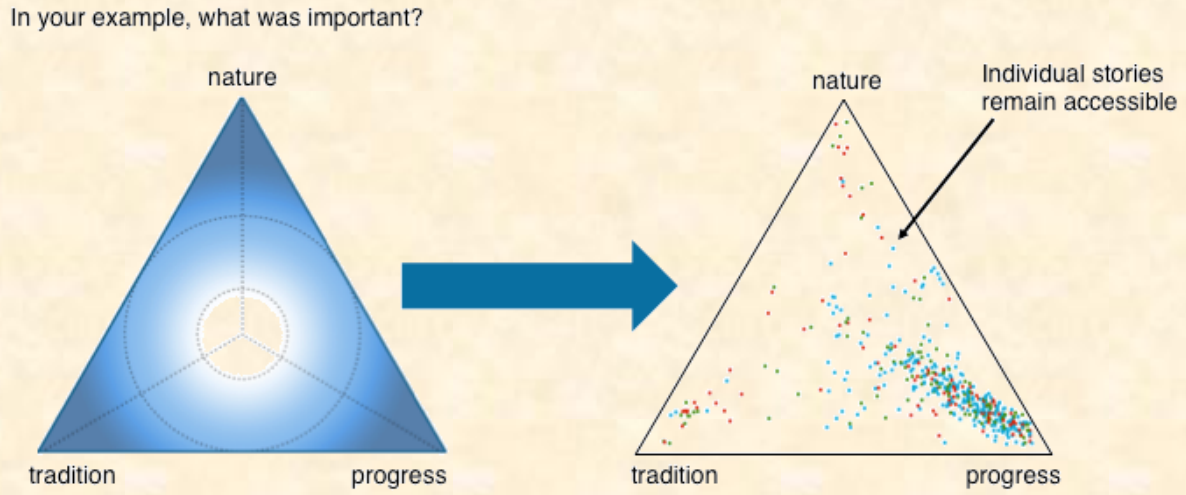

Figure 3 Respondents are asked to place a dot in the triad to the left, signifying how the story represents the blend of the three aspects in the corners. All the dots of all the stories are then visualised during the analysis as seen in the triad on the right. Colour coding allows differentiating between different characteristics of the respondent (e.g. gender, age bracket, poverty level, etc.). Individual stories remain accessible throughout the analysis to give context to the visualised patterns.

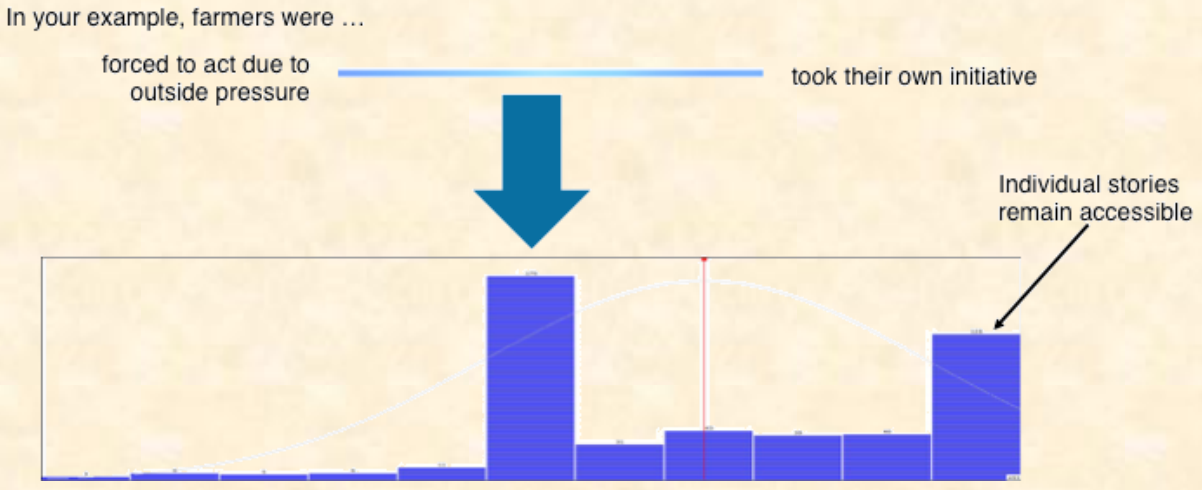

Figure 4 Respondents are asked to drag a ball between the two polarities of the dyad (above), which in this example represent pro-activeness and reactiveness of the farmers, respectively. All stories together can then be displayed as a histogram for the analysis. Individual stories remain accessible.

In total, 497 stories were collected from all four geographical areas where local agri-business network interventions are taking place in phase 3. The characteristics of the sample are shown in Figure 5.

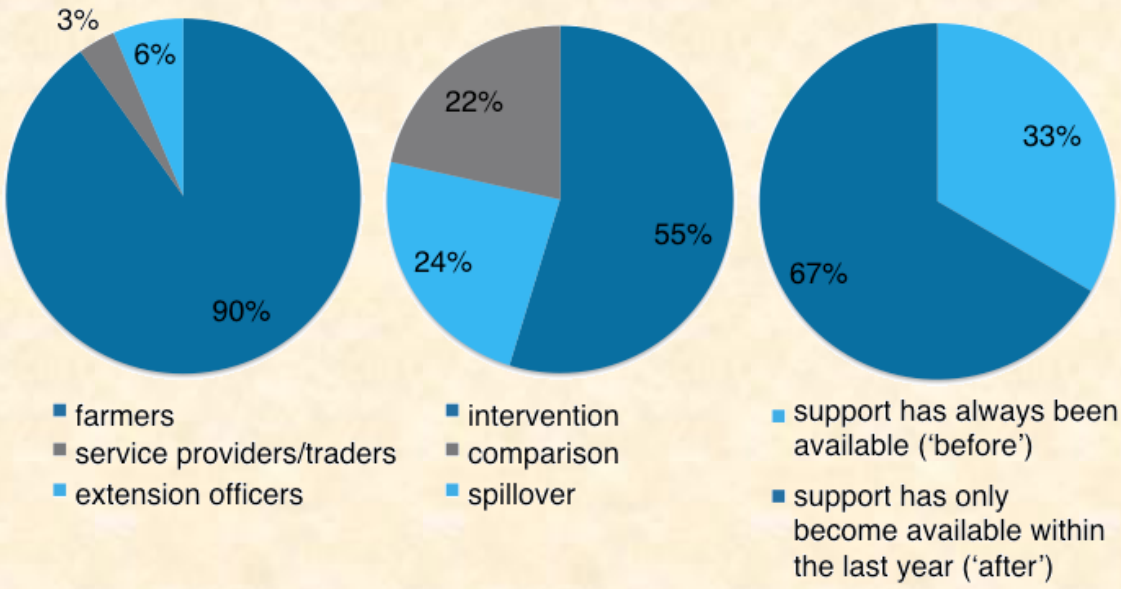

Figure 5 The sample of collected stories mainly comprised stories from farmers as they are the main beneficiaries (left). The sample was split into an intervention group, a spillover group and a comparison group (centre). As a crude before/after measure, the respondents were asked if the support their story was about has always been available or has only become available within the last year – the period in which Katalyst interventions have been going on (right).

The sample was designed to be large enough for statistical analysis. It was also intended to assess the scale of observed changes. The sample population was divided into three groups: an intervention group, which was about 50% of the sample; a spillover group of farmers from adjacent areas where there is a potential for them to have profited from the local agri-business networks indirectly, and a comparison group from areas farther away without any contact to the local agri-business networks. The respondents were also asked to tell whether the support they mention in their story has always been available or has only become available in the last year, which is essentially the period in which local agri-business networks have been active in these areas. As there is no baseline, this allows for a crude before/after comparison, in addition to the comparison between intervention, spillover and comparison groups.

The analysis of the data was done in a collaborative effort between the two consultants involved and the local agri-business network and monitoring and results measurement teams of Katalyst.

5 Results

5.1 Results: Transformation

Based on the analysis of all the data, clear patterns could be found that show that transformational changes in the perceptions and attitudes of the farmers are happening. The following aspects are notable:

- **Improved information accessibility, quality and relevance:** From a farmer's perspective, support is becoming more balanced in terms of accessibility, relevance and quality. A better balance arguably makes the provided service more effective.
- **Formal networks gain in importance:** Farmers give more importance to support received through formal networks. This pattern is most pronounced where formalised local agri-business networks are present, indicating that farmers make positive experiences when working with these networks.
- **Increasing balance of trust and income generation potential:** Farmers value trust, but also need to see a potential to improve income when choosing service providers. There is a visible shift from reliance on trust or potential to increase income alone to the need of balancing both. This growing balance indicates a healthier and more long-term oriented relationship between famers and service providers, while keeping the relationship beneficial for both.
- **Growing importance of progress and innovation:** For the involved farmers, the importance of progress is growing. These farmers are more likely to explore and take risk than to respect tradition and build on existing experiences. Data shows that involved farmers are becoming more proactive and want things to change. These factors make it more likely that farmers will adopt improved production techniques.
- **More balanced innovation:** There is a shift away from innovating only on the way things are produced or what is produced to a more balanced way of innovating. Innovating in how products are marketed and sold is gaining importance. Giving importance to more balanced innovation strategies strengthens farmers' resilience.

5.2 Results: Scale

The intention of the study design was to assess whether some spillover of change from involved farmers to other farmers is happening. This would lead to achieving more scale through the intervention. Spillover is, however, not strongly supported by the data. The patterns in the spillover group are not markedly different from the comparison group. There are some indications, however, that for farmers in the spillover group, copying from others is more important than for farmers in the other groups. This could be a sign that these farmers see positive changes at their peers who are connected to a local agri-business network and copy those. This does, though, not lead to a visible change in their perceptions and attitudes.

One of the reasons for the lack of a visible scale effect lies in the nature of the local agri-business model. It is most likely the close link between scale and the need for institutionalisation of the model at the central extension departments that hampers spillover at local level. The model does not lend itself to spreading itself on a local level, as particularly the government officials need a mandate from the central departments to engage in such activities.

Another reason could be that in the Upazilas (sub-districts) that were included in the study, local agri-business network interventions by Katalyst only started in September 2014, about

a year before the data collection. It is to be expected that some of the effects are not yet strongly visible.

The local agri-business network model is already applied in the majority of Upazilas in Bangladesh, covering those that are most important to agricultural production in the country. Although here are currently no signs that the model could spread into the remaining Upazilas without project support, the steps taken to strengthen the institutionalisation of the model within the central government extension agencies (see below) aim to ensure that the model is sustained in the current location. With the integration of the model into the curriculum of new extension officials, it can potentially diffuse into the remaining areas.

5.3 Results: Institutionalisation

There are strong signs for successful institutionalisation of the model on a local level. In particular the strong focus on changes in relationships between the actors is indicating that these changes are not just temporary but institutionalised in the everyday dealings of the involved parties. In addition, the public private initiatives established by the project are a successful platform to strengthen the ties between the actors and discuss local issues in an engaged and participatory way.

The successful changes on the ground are, however, not yet sufficiently reflected on the level of the three central government extension agencies – the Department for Agricultural Extension (DAE), the Department of Livestock (DoL) and the Department of Fisheries (DoF). While individual members of these agencies are in favour of the model, it has not yet been fully internalised by the departments. Katalyst has recognised this and strengthened its engagement with the central extension departments in phase 3 by establishing collaboration between Katalyst's capitalisation team and the respective departments. The collaboration aims to support national extension agencies to develop an operational manual on the public private partnership concept for service delivery, support national extension agencies on improving their training capacity and partner with the Bangladesh Technical Education Board (BTEB) to improve its course curriculum.

A final assessment of institutionalisation should be done nearer to or after the end of the current phase of Katalyst. Only then it will become clear if Katalyst's efforts to internalise the model in the way the central government extension agencies work has been successful.

5.4 Conclusions

The systemic changes that Katalyst – and essentially all other programmes applying market system approaches – aim to achieve are changes in complex human systems. To reduce this assessment to the question of whether systemic change happened or not, i.e. to a simple 'yes' or 'no' answer, would be oversimplifying reality. The question of whether systemic change has been achieved is tied to the complexities of the realities these programmes face.

However, there are clear signs that systemic change is happening in attitudes and behaviours of farmers about extension services, thanks to Katalyst's local agri-business network. Given that the interventions in the geographic areas that were studied started only relatively recently, they have achieved visible change. There is, however, still work has to be done in institutionalising this change on a central level and making sure that it is reaching the majority of farmers in the targeted areas. Currently, there is a risk that with the government staff changes/transferred, the achievements will be diminished or lost. Unclear instructions within the extension departments could threaten the sustainability of the local agri-business model.

6 The way forward

Due to a lack of earlier data, a crude before/after measure, asking about the availability of support, had to be used to show changes over time. Data collection over a longer period of time would clearly strengthen the link to Katalyst interventions. Geographical areas where local agri-business network interventions were introduced earlier could be included in the sample in order to look at differences between these more mature and the more recently included regions.

Comparing the systemic change data with data collected through impact assessments performed by Katalyst could give insights in whether the observed transformations translate into tangible poverty reduction.

The achievement of scale has, so far, largely depended on project driven expansion into a majority of *Upazilas* in Bangladesh. The need for project support is largely due to the fact that the model does not lend itself to self-propagation into new areas. The expansion of the local agri-business model and its sustainability depends on its institutionalisation in the central extension department. This has proven to be a challenge. While the programme is moving in the right direction, more needs to be done in terms of getting the buy-in of the central extension agencies. This is not particularly surprising, as in general development initiatives that aim to build state capability and change government processes have proven to be most challenging in development cooperation[8].

In general, it is hard to predict the time it takes for systemic change to become apparent. While some changes can become visible fairly quickly, changes in central government agencies are known to take considerable time. Although local agri-business network activities have been going on since 2007, efforts to anchor the model at the level of the central government agencies has only been a particular focus of project activities since the start of third phase. Consequently it is to be expected that more time is needed to get to tangible results on this level.

The assessment framework based on transformation, scale and institutionalisation has proven to be a robust way of assessing systemic changes and Katalyst plans to continue using it for assessing systemic change in other sectors.

The data generated through the SenseMaker studies can prove to be extremely valuable in improving interventions. During the sensemaking workshop it became clear that the local agri-business network team has picked up on many signals from the data that gives them information on how to adapt their interventions. For example, the team picked up that in regions with a higher incidence of extreme weather events, the farmers seemed to be more risk averse and nature plays a more important role. This reflected the team's experience that it was more difficult to achieve change in these regions, although so far they were not able to explain this. Such findings can influence intervention strategies and improve their effectiveness. As such, there is a potential to use insights from SenseMaker beyond the systemic change assessment framework. They can be included in decision-making processes within Katalyst, feeding in information from different levels of the target population to improve programming decisions.

[8] Andrews, M., Pritchett, L. and Woolcock, M. (2012). Escaping Capability Traps through Problem-Driven Iterative Adaptation (PDIA). Working paper 299. Center for Global Development.