

 **Rethinking systemic change:**
practical considerations for market system programmes,
a case study of NUTEC-MD in Northern Uganda

Case study

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December 2016



Citation

Koleros, A. (2016) *Rethinking systemic change: practical considerations for market system programmes, a case study of NUTEC-MD in Northern Uganda*.
The BEAM Exchange, available at: www.beamexchange.org

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Published by:

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The BEAM Exchange is a facility for knowledge exchange and learning about the role of market systems approaches in reducing poverty.

Acknowledgements:

I would like to thank BEAM Exchange and DFID for providing the funds for this research and the whole team of Palladium's NU-TEC programme for inspiring discussions on how to practically apply these findings in their programme context.



The BEAM Exchange is a programme funded by the UK's Department for International Development (DFID) and the Swiss Agency for Development and Cooperation (SDC). It is administered by PricewaterhouseCoopers LLP, working with organisations including the Institute of Development Studies.



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1. Background

Recent research by The BEAM Exchange seeks to understand theoretical perspectives on how market systems approaches can contribute to inclusive economic development through systemic change. It produced a [Discussion Paper](#) and accompanying [Technical Paper](#) with three main insights.

Firstly, economies are evolving systems, building on the mechanisms of variety creation, selection and amplification.

Secondly, both, current economic performance, including aspects like the inclusiveness of growth and economic evolution, are shaped by the ability of a society to explore different options for institutional arrangements and adjust them over time.

Thirdly, this process of evolution is complex. While some aspects can be designed and managed, others need to be explored through a process of learning and adjustment.

This paper responds to these insights by providing a practitioner perspective through the lens of one market systems development programme: DFID-funded “Northern Uganda: Transforming the Economy through Climate Smart Agribusiness – Market Development (NUTEC-MD)”, implemented by Palladium. It begins with a brief introduction to the programme and key aspects of its design phase. It then provides a summary of the three main research insights, with reflections on their applicability for programme design based on the NUTEC-MD experience. Finally, it provides some conclusions for the wider practitioner community based on this case.

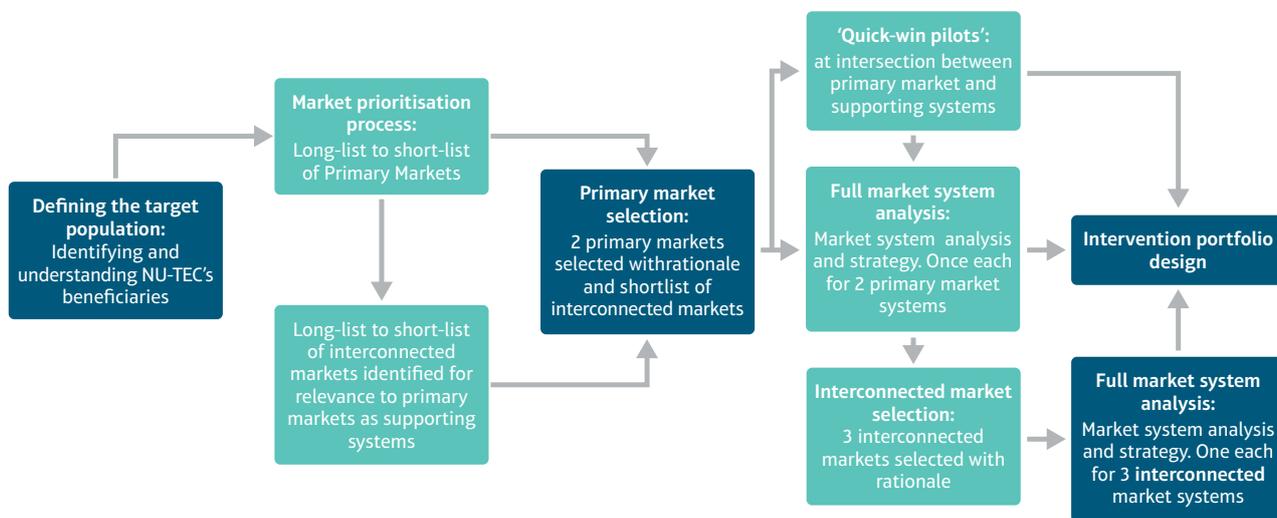
2. Introduction to the programme

NUTEC-MD is a DFID-funded programme that aims to increase the incomes and climate resilience of poor men and women in northern Uganda by stimulating sustainable, pro-poor growth in selected agricultural markets. NUTEC-MD is delivered using a Making Markets Work for the Poor (M4P) approach and aims to catalyse systemic change by addressing the root causes of current system performance that systemically disadvantage the poor from meaningfully participating in markets.

NUTEC-MD’s predominantly analytical design phase was intended to develop a clear understanding of the nature and dynamics of market systems in northern Uganda. It was structured around a number of deliverables, each requiring client approval. The result was a number of market system analysis reports and an opening portfolio of four interventions developed in consultation with potential business partners (*Figure 1*).

During the design phase, NUTEC-MD was also required to develop a programme results framework, including end-of-project targets and annual milestones to demonstrate implementation progress for all indicators. Therefore, for each intervention in the opening portfolio, the team forecasted the likely results the business model would achieve at each result level for each year of the programme. The opening portfolio was contractually required to account for approximately 25% of the total results expected.

Figure 1. Overview of NUTEC-MD design phase activities and deliverables



3. Practitioner perspective on main research insights

3.1 Economic change as evolutionary process

Summary of findings

Evolution is a general-purpose and highly-powerful recipe for finding innovative solutions to complex problems. In the economy, this process aims to cater to human needs and preferences and create wealth. The evolutionary process of creating variety, selecting fit designs and amplifying them is continuously repeated at different levels within an economic system. The economy is a mechanism in which different solutions are developed, tested and amplified. Through competition, markets provide incentives to try new things and create variety. In contrast to biological evaluation, the fitness function that determines what is selected as fit in an economy is thereby an emergent property of the society. It is shaped by the collection of beliefs, perceptions, culture, history, available knowledge and formal and informal institutional arrangements in a society. Good ideas are amplified by shifting resources from unfit to fit designs. For the evolutionary process to work, it is essential that entrepreneurs and a wide range of social actors have an interest and incentive to discover individually and together more of what is possible.

Implications for practitioners

The insight around 'economic change as an evolutionary process' carries a number of practical implications for the design of donor-funded market system development programmes. One of these implies that current market development programmes should focus on better understanding the 'fitness landscape' in which business models are introduced.

Firstly, this requires creating situational awareness of the market system, how the system evolved, and where the opportunities are for change. Secondly, it requires internalising the fundamental concepts of variety, selection and amplification in the identification of best-fit business models. This implies a recognition of the need for failure in identifying best-fit models, accepting that no matter how 'situationally aware' a programme aims to be, it is only by introducing a variety of different business models that the 'best fit' ones can be selected and amplified. Situational awareness can provide insights into the broad parameters of business models that will be a better fit. However, awareness alone is unlikely to replace the need for introducing and testing a variety of specific business models in the real world in order for the system to find a 'best fit'. This includes recognising that many, if not most of these, will fail.

In the case of NUTEC-MD, the heavily analytical nature of the design phase certainly embraced the first aspect of this insight, around creating situational awareness. The numerous contractual deliverables during the inception phase around market system analyses helped the team to better understand that a focus on northern Uganda's economic development would require NUTEC-MD to direct efforts away from traditional low-productivity agriculture, toward the introduction and expansion of modern, high-productivity activities. And that these activities needed to be understood in the context of northern Uganda's economic history, including the importance of the introduction of new products such as high-protein soy bean meal in the 1990s, and new capabilities such as solvent extraction oil seed processing, which demonstrated opportunities for expansion.

NUTEC-MD's design phase activities thus led the programme to focus efforts within the sunflower and soy bean commodity markets and three inter-connected support markets (seed, land preparation, aggregation & storage), with scope to enter new high-growth, high-value-added markets in the future. The opening portfolio included interventions focused on unlocking binding constraints to growth and catalysing sustainable change to business practice among market actors supporting or operating in high-productivity sectors. These included a business model to facilitate an increase in the multiplication and distribution of commercial improved soy bean seeds in northern Uganda.

However, the structure of the design phase contract and related human resources allocated to it meant that the programme was less able to embrace the evolutionary concepts of variety, selection and amplification (and the need for the failure of some business models that this implies). While the numerous deliverables around market system analyses were useful in building situational awareness, in practice the relatively small project team focused more on meeting deadlines for each deliverable than spending time engaging with a variety of market actors. The minute one deliverable was finished, work on the next one began without sufficient time for reflection around what the results of the deliverable meant in context.

This reduced the team's ability to work more iteratively with market actors to broaden the scope of 'what was possible' in order to identify new and promising opportunities, which could strengthen innovation based on their growing understanding of the situation. Most engagement with market actors was targeted and focused on extracting information from them which was required to meet the next deliverable.

For instance, oil seed processors are an important market actor in sunflower and soy bean market systems. In theory, this would suggest that the NUTEC-MD team should have been working collaboratively and iteratively with processors over the life of the design phase to understand the results of the different market system analyses conducted, to interpret the results together and to identify a variety of innovative business models to introduce into the system. In practice, these types of interactions were not incentivised by the contract and thus not prioritised by the team. Rather, interactions with processors were more transactional in nature, designed to gather the data needed to conduct the required analysis.

This was exacerbated by the requirement to present an opening portfolio of interventions which accounted for a quarter of the programme's total expected results and included results projections on an annual basis for the life of the programme. Although the process of developing business projections with private sector actors brought to the surface many of the assumptions within the business models that needed to be discussed, in reality it also forced the business planning into a rigid framework that put the emphasis more on delivery, than on testing, failing fast and adapting. The process of forecasting potential results each year across a three or four-year business plan also contributed to more conservative planning and ambition.

This pushed the programme into identifying 'safe bets', looking for business models that had been successfully tried and tested in other contexts and adapting them to the northern Uganda context. For example, in working with a large grain aggregator and processor, the team opted to identify a current model that the processor was implementing in another commodity market system and adapt it to the sunflower and soy market. This was perceived as less risky for an opening portfolio than other ideas which had not been previously tested in Uganda, as it allowed the team to come up with more certain results projections over the entire programme based on the processor's previous experience in the maize market.

While this planning-focus model has potential for success when business models are well adapted to the local context, in some ways proposing business models with an established 'track record' from other contexts stifled more innovative thinking. It also mitigated against local market actors also becoming more situationally aware and pushing the boundaries of potential new business models.

3.2 Institutions provide structure to human interaction

Summary of findings

Humans have an inherent tendency to reduce uncertainty by structuring their environment. Uncertainty is reduced by creating structures, called institutions, which allow people to expect a certain behaviour from others in a specific situation. Over time, institutional constraints accumulate and an elaborate structure of informal and formal institutions emerges. Institutions are 'the rules of the game' both on the level of personal interactions but also on the level of interactions between organisations, firms, and governments. Institutional change is thus an inherently local process. Societies can borrow selected principles, but the effectiveness of such borrowing is often limited due to differences in culture, management styles and work practices. A society's disposition to change, shaped by its history and culture, strongly influences what is possible.

Implications for practitioners

The second insight is not something particularly new to market systems development programmes, but one that can be difficult to implement. This is particularly true in the current context of results measurement. This has certainly been the case with NUTEC-MD, where a recognition of the importance of institutions and the formal and informal 'rules of the game' influenced how the programme was designed, and where it intended to intervene. This was used more to limit the scope of the programme's interventions based on an understanding of 'what was possible' with market actors based on current institutional constraints, rather than a focus on addressing binding constraints within them.

The M4P Operational Guide defines a market system as "the multi-player, multi-function, multi-rule arrangement comprising the core function exchange and the supporting functions and rules which are performed and shaped by a variety of market players".¹

¹ The Springfield Centre (2014) The Operational Guide for the Making Markets Work for the Poor (M4P) Approach, 2nd edition funded by SDC & DFID

This implies that programmes adopting this approach should engage with a range of different actors from the public and private sectors, representative organisations and civil society. Consistent with this, NUTEC-MD conducted a comprehensive political economy analysis as part of its inception phase to inform its opening portfolio of interventions. The results of this analysis suggested that meaningful growth in modern economic activities was unlikely to happen without government promotion and protection of selected industries. The analysis also identified potential challenges of working with and through public sector actors. For instance, the analysis of the seed market revealed challenges both with the legal framework and enforcement of counterfeit seeds. It also revealed decreasing trust in commercial seed companies; as well as a poorly functioning seed distribution system managed by the national agricultural research organisation, which restricts the private sector from accessing enough parent seeds to produce new varieties in a timely manner.

In order to get the full picture, the political economy analysis was done despite the fact that the original conceptual design documents for NUTEC-MD (business case) explicitly stated that the programme should not work through government or other public sector actors, but rather focus on the private sector.² Consequently, the opening portfolio of interventions was focused only on potential business models with private sector actors, such as commercial seed companies, within the current institutional arrangements, rather than public sector actors that might explore changes in prohibitive policies or their enforcement to alter current institutional arrangements. The interventions could, however, be developed with a strong understanding of the existing institutional framework, and the limits therein, to make them more situationally aware and potentially mitigate against some risks of failure. At the same time, the analysis enabled the programme team to acknowledge such an approach could lead to a preference for market solutions that worked within the current structure, legitimising and strengthening the structure and potentially stifling fundamental and long term pro-poor change.

In addition, although the programme has no immediate plans to engage in policy, the political economy analysis was used to recognise the need to position the programme for the possibility of doing so in the future. Initial steps have included building a familiarity of, and credibility with, key actors in government as well as with bodies that represent business interests with government. For instance, the East African Grain Council was a key design phase partner, allowing them to build a relationship with this business membership organisation which could potentially be important in the future.

While the programme has acknowledged the importance of the institutional framework, it is also important to note that its current results measurement framework— does not include any programmatic outputs around working with formal institutions. Thus the programme in its most basic sense is not incentivised to do this.

Furthermore, the rigid results framework used to monitor and assess performance incentivised the use of direct causal impact pathways: identifying the quantitative results related to how implementing a given number of business models with partners (outputs) would lead to improved sector performance in terms of increased sales among business partners (outcome) and increased incomes for poor people as a results of these business models (impact). The requirement to forecast results for each intervention for each year of the programme also disincentivises the programme from focusing on more indirect causal pathways. These are more difficult (or impossible) to directly attribute to intervention, or require long causal chains that aren't likely lead to higher level results in the short time frame of the programme – including changes to institutional or political processes.

These are both important considerations to take into account when thinking about the results measurement frameworks for market systems development programmes.

² By design, the overall NUTEC programme includes an advisory committee of six people selected by each of the programme's three components. Government is represented on this advisory committee.

3.3 Complexity and social change

Summary of findings

Complexity is a powerful concept to describe the evolutionary dynamics in human systems and the institutional structures which emerge from them. To say that a situation is 'complicated' or that it is 'complex' is not the same. Complicated problems may be difficult, but they are defined as clear problems for which an agreement can be found on how it can be fixed, meaning that solutions can be designed in advance. For complex problems, however, causality is not predictable. Complex problems are not static and do not have an easy fix but require solutions that are continuously created by the interaction of the actors in the system. The structure of the system changes with the behaviour of the actors and with the interventions, meaning that a repeated intervention will lead to a different result. Hence, in complex systems, an understanding of causal relations for each change can only be gained in hindsight and does not allow for foresight. To solve complex problems, change initiatives should not focus on solutions, but on evolution.

Implications for practitioners

The last main insight around complexity and social change was the most challenging for NUTEC-MD to fully embrace. As this research insight explains, change in complex systems is created by changes in the interactions and behaviours of individual actors in the system over time; these interactions cannot be predicted in advance and might lead to a different result if interventions are repeated. As such, NUTEC-MD understood that once it intervened in a market system, it would not be possible to fully predict exactly how market actors would respond over time; too many variables (in and outside of the programme's control) would be in play which would influence how different actors would react to the intervention at different times - beyond what the programme intended - and what changes would emerge within the system as a result.

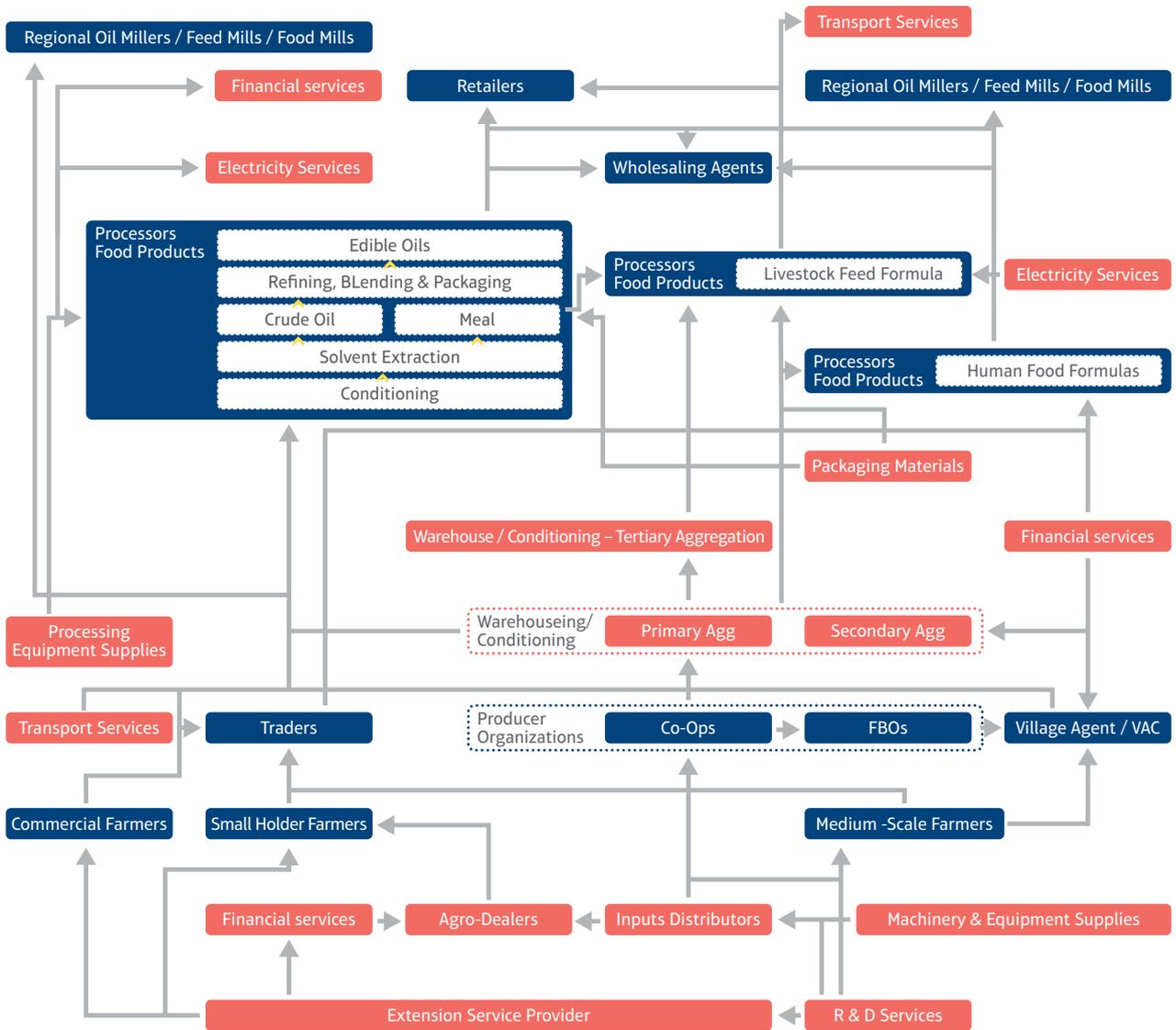
Taking this into consideration, NUTEC-MD understood its role as introducing pro-poor innovation into the system, observing how behaviours and interactions changed among the concerned market actors as a result of the innovation (as intended or otherwise), and responding in reaction to these emergent changes by updating its hypotheses (and the intervention as needed) to catalyse the desired pro-poor change in the long term.

The challenge however was in establishing a system that could effectively accomplish this while adhering to the contractual requirements of the design phase. The team found that the current tools and frameworks required for results measurement and donor accountability purposes overall were not well suited for this type of systemic intervention. Specifically, rigid results frameworks (or logical frameworks / log frames) tended to favour predictability and control over experimentation and iterative adaptation, and thus were more suited for interventions in complicated rather than complex systems. This is illustrated in the example below.

The design phase analysis used concepts and frameworks from the field of complexity science to describe the market system of northern Uganda. The NUTEC-MD team first constructed a detailed actor-based map of each market system. An example of one of these maps from the soy and sunflower market systems is presented in Figure 2 (overleaf). The team then used the planned market system analyses activities to further identify current behaviours of and interactions between market actors maps, as well as the current institutional frameworks and structures within the system to determine how these dynamics disadvantaged poor farming households from successfully participating in the market system (systemic constraints).

NUTEC-MD then used this actor-based behavioural analysis to design a number of innovative business models which had the potential to alter these dynamics and catalyse pro-poor market system change. To achieve this, the team developed a conceptual framework as its programme

Figure 2. Actor-based system map of sunflower and soy market systems in northern Uganda



‘theory of change.’ This adhered to effective principles of intervention within a complex system, as opposed to constructing a cause-and-effect logic model more suited to complicated systems, where activities are identified that lead to a quantifiable number of programmatic outputs and produce a proportionate and linear change in outcomes and impacts.

The conceptual framework rather described ‘how change happens’ through variations in behaviours and interactions of actors within a complex market system to guide intervention design and delivery (Figure 3 - overleaf). This allowed the construction of a series of hypotheses of how each business model might address a constraint to pro-poor change in economic practice among each market actor, leading to sustainable changes in economic practices among other actors. These changes would ultimately lead to the improved well being of smallholder farmers (causal impact pathway).

For example, in the soy and sunflower markets, a business model was proposed to develop an integrated service/input delivery and off-take model between aggregators, processors and smallholder farmers. By aligning incentives among these different actors and addressing their constraints to working together, the model was intended to consolidate input distribution channels, reward higher-quality and ensure accountability within the supply chain.

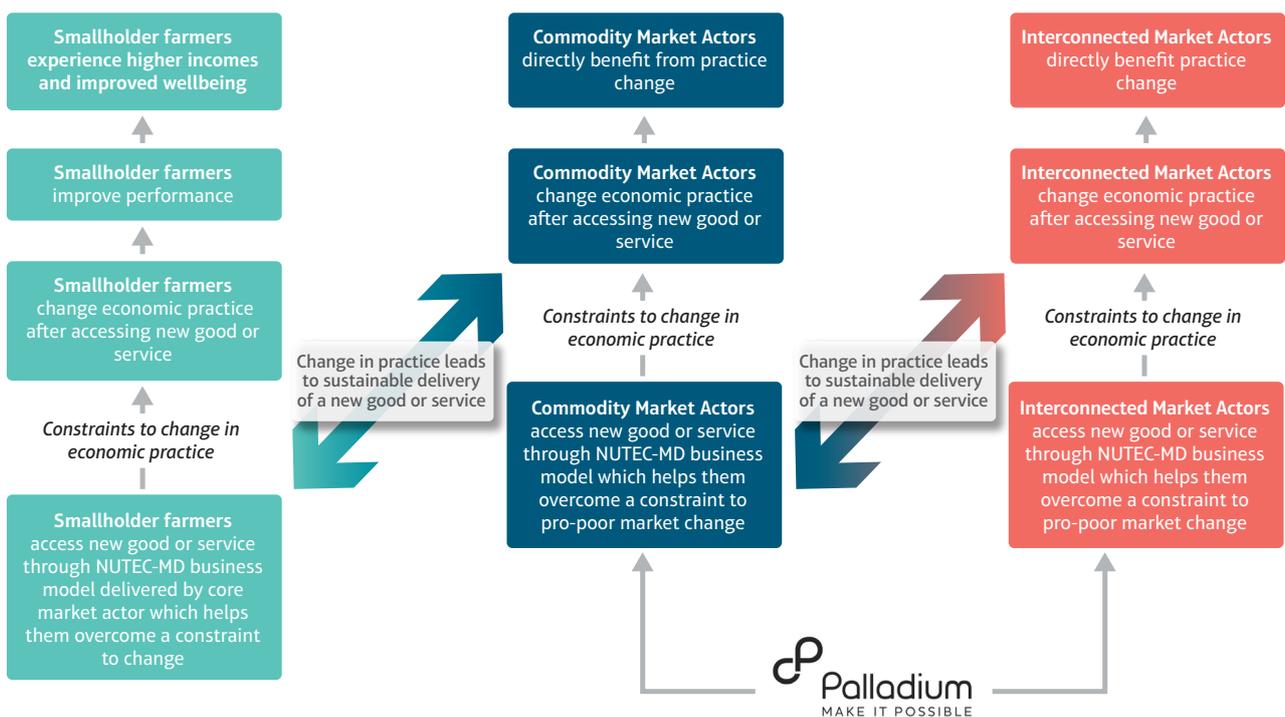
Box 1: An excerpt from the NU-TEC MD inception phase report which provides an example of the type of findings the market system analysis revealed.

The soy and sunflower market systems were characterised by poor yields of poor quality soybean and sunflower grain, leading to low profits for men and women farmers and a limited supply of oilseeds grain for large processors. This resulted in a high cost of processing and uncompetitive, locally-produced vegetable oil products. The reduced productivity was perpetuated as farmers, especially women, had low access to inputs, did not make use of inputs because they did not perceive the benefits, and were often not trained on how to use them. Moreover, the risks associated with investment in increased productivity and better quality inputs were high, and the rewards uncertain, with no guaranteed market offering a price premium for higher quality soybean and sunflower produce.

Limited access to inputs was associated with inefficiencies with input suppliers, which were constrained by poor and unconsolidated distribution channels using multiple actors. This led to low demand for improved inputs, low levels of accountability on quality products, and little capacity to disseminate information on proper use.

Processors had poor linkages to farmers which resulted in a lack of ability to guarantee a supply of sufficiently high-quality sunflower and soybean grain. While processors had a theoretical understanding of the business case for a more integrated model, they lacked the technical capacity or motivation to roll it out in Northern Uganda, where poor relationship development and predatory behaviour by competitors had limited the effectiveness of efforts thus far.

Figure 3: NUTEC-MD conceptual framework for developing intervention-specific causal impact pathways



Using the conceptual framework, the intervention-specific causal impact pathway articulated a series of anticipated results and underlying assumptions of how implementation of the business model with specific aggregators and processors were meant to lead to changes in their economic practices (delivering embedded services to farmers). In addition the framework looked at how these changes in practice delivered a new service which addressed constraints to practice change among farmers (their access to quality inputs and secured premium output markets) and processors (more certain supply of premium inputs), and how all actors would economically and socially benefit.

For each business model, the team developed an intervention-specific causal impact pathway which followed the pathway in the overall conceptual framework with greater detail on the intervention-specific anticipated results and assumptions. These were tracked during intervention delivery and then revised based on evidence of how market actors are actually changing behaviours and interactions within the system. As such, they served as the framework for developing an intervention-specific measurement system. During implementation, regular reflection sessions were held with the team to review the intervention-specific causal impact pathway, analyse evidence to determine how market actors and the system overall was responding to the intervention (as intended or otherwise) and updated the intervention-specific causal impact pathway and measurement system based on evidence to drive adaptation and learning.

The adoption of this conceptual framework coupled with results from the detailed market system analysis provided the team with a practical approach to guide intervention design and delivery within a complex system. Adhering to the principles of complexity however was more problematic in respect to developing a results framework. The example of the embedded services business model above represents just one of a multitude of different business models that NUTEC-MD could have designed to attempt to address the identified systemic constraint. And indeed, embracing the concepts of complexity, suggests that NUTEC-MD should in fact have designed and delivered a larger variety of these business models as part of its opening portfolio, allowing some of them to fail, as the system selected and amplified the 'best fit' models.

The first section of this paper described the challenges the team faced in this regard and the incentives the results framework provided in terms of prioritising 'safe bets' in intervention design.

These challenges risk becoming more pronounced during implementation when the results framework is used as a tool for performance and contract management in order to hold the programme to account. This type of accountability framework seems better suited to intervention in a complicated rather than a complex system if we fully embrace the findings from this research.

As such, the NUTEC-MD results framework as designed is likely to incentivise the programme to deliver a limited number of less risky business models on an annual basis and measure whether these are being delivered according to plan in subsequent years. Though an understanding of complex systems suggests that many of these will fail, the programme may be subsequently penalised for failure to deliver against each business model during its annual performance reviews. The programme team would thus be incentivised to make each approved business model 'work', even if it is no longer appropriate, for fear of failure against these predetermined targets.

The results framework at present does not accommodate for deviations from these plans nor does it incentivise iterative adaptation, failure or exploration. This is a real and practical challenge for NUTEC-MD, as it is for many other adaptive programmes attempting to embrace complexity concepts in design and delivery. There are a growing number of development theorists who are beginning to acknowledge and address this challenge. In the short term, however programmes like NUTEC-MD will continue to struggle to fully adhere to the findings of this research insight using the current tools and frameworks for donor accountability.

4. Conclusions for the practitioner community

Analysing the case of NUTEC-MD, an argument can be made that in some areas the programme adheres to the concept of ‘systemic change’ as outlined in this research. There is still scope for the programme to take these insights more fully into account. Some aspects were within the ability of the practitioner team to address during the design phase, while others require a more fundamental rethink of how NUTEC-MD was conceptualised initially. This has implications for how future market system development programmes are designed as well as for how the NUTEC-MD programme continues to evolve and function.

In terms of understanding the economy as an evolutionary system, NUTEC-MD followed a similar design phase as many other market systems programmes. This structure helped the programme team to develop a rich and robust situational awareness of the market systems of northern Uganda. However, the strong analytical focus was less conducive to establishing the right environment for the programme to adequately identify a sufficiently wide range of diverse business models in the system. Donors and practitioners might consider how the structure of programme design phases could better address this and identify potential ways for these two considerations to come together more closely in inception phases. For instance, moving away from predominantly diagnostics and analytics and promoting more interactions with market actors as a way of both developing situational awareness of the systems in which programmes intervene. Simultaneously exploration of the design space could begin through introducing potential business models and learning from failure.

Next, NUTEC-MD and other programmes that follow the M4P approach have a strong recognition of the importance of institutions. Many of the tools and frameworks used by practitioners, including the DFID and SDC M4P Operational Guide point out the need to understand the formal and informal ‘rules of the game’ in intervention design. For NUTEC-MD and many market systems development programmes, applied political economy analysis is part of good practice in programme design. In the case of NUTEC-MD however, although the programme is encouraged to be mindful of institutional frameworks in intervention design, this is treated more as a lens to analyse what is achievable with private sector actors. It isn’t used as a diagnostic to identify how a market system development programme might proactively work to address constraints in current institutional arrangements.

Working with institutions traditionally has been addressed by governance programmes working for institutional change. For market systems development programmes to truly catalyse long term and sustainable pro-poor market systems change, they will also need to engage more with institutions. This is a particularly important consideration when reflecting on the insight from this research project that working within a given institutional framework may actually strengthen that framework, even though it might not be conducive for pro-poor change in the long run. The structure of results frameworks for most programmes at present does not incentivise this work, as more direct and more easily attributable causal impact pathways are preferred. Work with institutions would require more indirect and longer pathways, which in most cases might not be predictable in advance.

Last, what is currently assumed as good practice for programme design and accountability makes it difficult for market systems development programmes to fully embrace concepts of complexity in intervention design and delivery. These frameworks favour predictability and control. This is in some ways in direct contrast with how a programme that embraces complexity should intervene, namely by exploring the design space in the pursuit of best fit models, and learning from experience. Though there is a growing community of people within donor organisations and practitioners that are aware of this tension, it is still difficult for current programmes to adhere to these ideas.

NUTEC-MD has attempted to deal with this partially, by developing a conceptual framework to guide intervention design and delivery in a complex system. However, the results framework still does not fully incentivise this practice. More thought is required to understand what a more flexible and adaptive framework for results measurement in market system development programmes might look like both among the practitioner community as well as the funders of programmes, that are responsible for the institutional framework in which these programmes are designed and delivered.