The story of MSD: achieving sustainable development at scale

Twelve examples of market systems development from four continents

Case studies

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Achieving sustainable development at scale

The story of 'market systems development' told through twelve examples from four continents

1. Introduction

Practical experience in the last fifteen years shows that by harnessing the energy, resources and skills of the private sector, the market systems development (MSD) approach can contribute to sustained poverty reduction at scale. The purpose of this publication is to communicate the results, versatility and implications of the MSD approach to a wide audience, without losing them in a Kafkaesque labyrinth of development jargon.

The twelve cases highlighted here demonstrate that the MSD approach can be excellent value for money, with the economic benefits greatly surpassing the cost of initial investments. They also show that by changing prevalent business models and pioneering new ones, the MSD approach can achieve lasting, transformational improvements to how markets work for people living in poverty.

Our examples illustrate that MSD can be successfully applied to a wide range of contexts. The approach has worked in densely populated, dynamic Asian countries. But it has worked also in isolated small island nations in the Pacific, in post-conflict economies, in transition economies, in economies facing the 'resource curse', and in economies characterised by high transaction costs and a lack of transparency.

The MSD approach has often been used to improve agricultural productivity, as many cases will demonstrate. But it can also be relevant to increase industrial and export competitiveness, and to develop financial and service markets of various kinds, including low-cost private healthcare and education markets for the poor.

Programmes using the MSD approach work with an astonishing array of partners, from the very big to the very small. Their partners include for-profit businesses, not-for-profit community structures and government bodies. So, the stories told here feature a broad spectrum of economic actors: mobile seed vendors, tractor service providers, rural pharmacies, solar sales representatives, silage entrepreneurs, shelling service provider, master trainers, business networks and radio stations, to name a few.
All cases demonstrate how private sector engagement is instrumental for poverty reduction.

The twelve cases we selected cover a broad range. They include a few 'greatest hits' from the past fifteen years that were instrumental in forming our understanding the approach. These cases tend to be better documented and thus can better demonstrate sustained impact and scale and transformational systemic change in time. We mixed this up, to the extent possible, with fresh stories from lesser known countries, sectors and programmes.

It should be noted that we relied on resources and materials that already existed in some form or other. We hope that these twelve cases are some of the best available, but they are not the only ones out there. We would have preferred to include more cases, for instance from Eastern Europe, on trade and on economic reform through government engagement. Overall, the story of MSD is much richer than we can show here.

A note on terminology: the MSD approach has evolved through a series of name changes over the last twenty years. Early labels such as Business Development Services (BDS) were replaced by Market Development, to Making Markets Works for the Poor (abbreviated to M4P) and later MSD. We present cases from programmes from different eras which may have used varying terminology to introduce themselves. They are different ways to express the same ambition; a coherent approach to understanding and intervening in markets so that they perform more beneficially and sustainably for people living in poverty.

> The **Market Systems Development (MSD)** approach works with economic or political actors to bring about lasting changes in incentives, rules, norms or supporting functions within markets, and so ultimately improve the terms of participation for poor women and men. The approach requires a clear vision of how things could work better for large numbers of people without continued external intervention in future. MSD programme tactics are thus geared to facilitate and uphold long-term changes. They consciously try to avoid activities that merely create temporary shifts in incentives or behaviours.

In preparing these cases we have carefully interpreted the information provided by programmes to create relatively short, accessible stories that communicate how the MSD approach works and what it can achieve in terms of scale and sustainable change. We have tried to avoid drowning stories in detail or stripping them bare of any meaningful context. Implementing the MSD approach is an entrepreneurial, 'business-like' process of engagement with markets and actors that involve investigation, trial and error, lucky deals and unexpected breakdowns. Glossing over this would mean not showing the essence of the process that delivers sustainable impact at scale and systemic change. Without understanding the process and methodology, the results would become tricks we are not sure how to repeat.

Documentation and research standards vary between programmes driven by contextual or budgetary constraints or management priorities. We have polished each story to make it fit a similar template, but invariably some stories will be more equal than others. Each story takes us through four steps:

1. Introduction of the context (what sustainable development is not happening),
2. The implementation process (how, with whom, were new systemic solutions identified, worked out and introduced to the market)
3. The sustainable impact this yielded and at what scale; and finally
4. The systemic implications in terms of a change in mindset, discovering new markets, adoption of new business models, further innovation and investment, etcetera.

Half of the programmes listed here were audited under the DCED Standard and this generally contributes to a better documented process and clearer results statements.

We hope that the twelve cases provide good insight into the potential and versatility of the MSD approach. We believe that these stories tell us more than 'yes, we can'. What stands out amidst their diversity is several common threads. They tell us about what it takes to make the 'yes, we can' happen. If we want more of this, we need to ensure these common threads are well understood and provided for in future programmes.

2. Overview of the twelve cases

The first case selected is from one of the 'founding fathers' of the current M4P / MSD approach: the Katalyst programme in Bangladesh. Katalyst was not the first M4P programme, but it was one of the first ones able to translate a rather conceptual approach into a functional, practical methodology. It is befitting that our story of MSD starts with a story from Katalyst.

Case 1. Katalyst - making last mile seed distribution work for small farmers in Bangladesh

Between 2008 and 2012 Katalyst worked with Syngenta and others to establish a new 'last mile' seed distribution system to reach smallholder farmers. The central interventions involved innovation in seed packaging and a retailer training programme. All players in the case are well-established in their own way and knew the seed business; new linkages between them and adjustments to an existing product were enough to open up a new market. The programme resulted in income and nutritional benefits for millions of people living in rural poverty.

Katalyst's experiences have shaped our understanding of what is effective in MSD: relatively light-touch, short-duration interventions, often technical assistance to introduce firms to new business practices that make markets more inclusive, but that do not deeply impact on their underlying business model. The selected intervention case is a good example of this. This is how we would like to do MSD: the investment is limited, the learning curve not too steep. Failure is not 'fatal' for any party involved, and the potential gains in terms of pro-poor outreach are significant.

Unfortunately, as all other eleven stories will tell us, in most cases more is needed. Turning the Katalyst model into the model for all other MSD work would be a mistake. The second case from PrOpCom, illustrates this point.

Case 2. PrOpCom - buying down risk to unlock the tractor rental market in Nigeria

PrOpCom was a 'founding father' of MSD in Africa. This case focuses on a hard won, complicated risk-sharing deal to unlock the distorted tractor rental market in Nigeria and creating access to the equipment small farmers, short on labour, need to till their land.

There are a number of similarities between the Katalyst and the PrOpCom case, but also a key difference.

Both operated in countries plagued by corruption, which makes doing business more difficult and costly, but rarely impossible. Indeed, most of the twelve cases are situated in environments often deemed hostile for economic development. In less mature markets the risks may be higher and the need for facilitation more pronounced, but change can also be more transformational. Both cases describe how the business facilitator had to take the initiative to do research and develop business cases to get existing players interested in considering new ways of doing business.

Also, in both cases there were initially only one or two players interested in trialing new ways of doing things. **This is important for three reasons.**

First, it demonstrates that we cannot assume that the private sector is 'innovation-ready', i.e. that grants and challenges are enough to make them innovate. We may challenge them to adopt proven innovations, but in the design and testing of new models and practices the role of the business facilitator may be essential.

Secondly, a successful business facilitator is not a grants administrator, but a professional who analyses markets and imagines new ways of doing things.

Thirdly, innovations rarely work in one go; a business facilitator needs to stay in a market for a little while to work through several rounds of change to get things to work.

The key difference between the Katalyst case and PrOpCom cases concerns the need to be creative and persistent. Katalyst innovations emerged largely from trial and error – few would have predicted that work with mobile seed vendors and small seed packs would be this effective. In the PrOpCom case a deal had to be painstakingly put together, with a lot of talking, thinking and tweaking to get three parties to work together. The art of its work resided in that initial revolutionary deal.

The third case is from ALCP in Georgia and reiterates some of the key points that emerged above. It is set against another inhospitable backdrop, this time of economic transition, in which the approach nonetheless managed to thrive.

Case 3. ALCP - building veterinary infrastructure in post-Soviet Georgia

ALCP facilitated the gradual build up of infrastructure for product development, distribution and information to enable commercial veterinarian services to fill the void left by the post-Soviet collapse and reach small farmers.

ALCP emphasises the importance of the business facilitator being equipped with market intelligence. The programme had to demonstrate the business case for a commercial rural veterinarian series and made use of its local network to get the first pilots going.

Where the case adds to the narrative is that it demonstrates that complex business models in which various parts need to come together to make a commercially (more) sustainable whole do not emerge overnight. In the ACLP case, first it had to be proven that better distribution to, and training of, local pharmacies would generate more viable businesses. Then it had to be proven that outreach could be further extended into rural areas via satellite pharmacies. Then investments in a private laboratory and production development were warranted to keep up with the growing demand. Then investments in an online portal helped solidify the proper circulation of information and products through a growing base of clients and pharmacies. What started small, with a handful of pharmacies, could over five years be nurtured into a model that now is exported to other countries and offers other service providers, such as micro-finance institutions, a platform to hook into. This could not have been achieved in a faster or feather-light-touch manner.

The fourth case is from ÉLAN in the DRC and describes a similar scenario but in much starker terms. The Soviet collapse in Georgia left an educated population and technically competent companies to figure out how to make things work in a different way. ALCP's main partner, Roki, was a lead firm to build on. In the DRC there was little to build on, and Altech, the company ÉLAN partnered with, was not a lead firm yet when they first met: they were selling solar lamps to teachers in a corner of the vast DRC.

Case 4. ÉLAN - bringing light to the Democratic Republic of the Congo

ÉLAN supported Altech to develop a purely private business model able to make customers aware of solar products, make these accessible and affordable to off-grid households and attract private investment for future expansion. Public sector ineptitude created a huge market gap; Altech became the first company to demonstrate how to fill this gap, stimulating crowding-in by other private companies.

The ÉLAN case focuses on how to give consumers access to electricity in a country in which the public sector, despite the vast amounts of aid propping it up, is unable to provide this service. Where this case adds to the narrative is that MSD also works for consumer products in failed states, but more importantly Altech's expansion was significant and genuinely high-risk: it could have jeopardised the company's future more than any of the other partners described so far. Thus, we are again one step further away from feather-light-touches, to shaping a model from the ground up.

The fifth case is from MDF in Pakistan and strongly reiterates the need to take risk and to build up partners rather than 'finding' them (and hence the time, team and investment it takes to do this).

Case 5. MDF - building a silage market from the bottom up in Pakistan

MDF built a system of services around farmers that gives them access to silage, silage-making equipment, financial services, rental services and, ultimately, other feed options to improve year-round animal nutrition and productivity. It also demonstrates the importance of the business facilitator doing their 'homework' and identifying new business models worth testing.

This case adds to the narrative in that it demonstrates that sometimes there are no lead firms to work with. We want to aim for scale, and we want to create system change, but we may need to start small, either because bigger firms are not present or not interested. The case describes how MDF started off really small, with very local silage entrepreneurs. Their success opened the eyes of increasingly bigger players from machine suppliers, to banks, to large dairy processors and even the Government of Pakistan. Katalyst could work 'top-down' with two seed companies to shrink seed packs in order to

reach half a million farmers within a year. MDF is working with dozens of (mostly smaller) firms to shrink bale sizes to potentially reach 100,000 farmers over a five-year period. It is effective enough to have triggered many autonomous investments.

Systemic change is not necessarily about working with lead firms, then having them and others adapt, adopt and expand. Systemic change is often about carefully facilitating the process whereby all key market functions necessary for productivity and market competitiveness are increasingly available and relevant for those that need them. This can be a process with many partnerships over years, demonstrating, scaling, sharing and connecting until a critical mass is reached.

The sixth case from M4C in Bangladesh reiterates the lessons from the MDF example – piecing systemic change together, partnership by partnership.

Case 6. M4C - integrating extremely poor and isolated island maize farmers in Bangladesh

M4C is a Katalyst offshoot tasked to demonstrate that systemic development can be effective in another inhospitable context: reaching the extreme poor on the isolated riverine islands in Bangladesh, called chars. M4C succeeds in doing so by incessantly demonstrating the business case for market actors to consider the chars as a viable opportunity for business expansion and see their extremely poor inhabitants as potential clients.

M4C's case, like MDF before, is built from many partnerships and actors covering different angles, each seeing strong crowding-in. Where M4C adds to the narrative is that it should dispel the myth that MSD does not work for the very poor. Even around the Chars, a strong business case can be built.

We go from riverine islands to Pacific island nations – another geography sometimes thought inhospitable to the MSD approach. The Pacific poses specific economic and development challenges, but good business cases can also be found here. What makes the Pacific stand out, and where it adds to the narrative, is that markets are so thin that systemic development often depends on a single lead firm. Whereas the 'Asian' scenario of MDF and M4C describes a multitude of actors for many system functions, in the Pacific scenario the lead firm is often value chains and support system in one. The seventh case focuses on ECF funding that enabled a lead firm to invest in a new business model with smallholder farmers, introducing a range of innovations for more profitable export cattle production in Vanuatu.

Case 7. ECF - supporting smallholder farmers in thin Pacific markets (Vanuatu)

Demonstrating a new business model linking large cattle breeders to smallholders so that each focuses on their most effective functions in the value-chain. Large cattle farmers buy smallholders' cattle at a younger age so that they can finish them for abattoirs. Smallholders benefit from better genetic stock (the bull), the ability to produce more animals (due to the change in herd composition) and more revenue per animal (less costs, better price).

The eighth story describes how a programme committed to an MSD approach – FSD Zambia – dealt with a scenario where no obvious commercial entry point existed in the market. FSD-Z concluded that to give the poor better access to suitable financial services in Zambia it could not work with any established financial institutions. The distance between banks and micro-finance institutions on the one hand and the poor, particularly rural clients, on the other was too big, both geographically and in terms of understanding each other. Products did not match needs and expectations were perhaps unrealistic. This case demonstrates how fairly extreme scenarios can occur, and how FDSZ dealt with it.

Case 8. FSD-Z - where no bank ventures: expanding financial services in rural Zambia

Community-based micro-finance institutions, while successful in Africa, have been dependent on donors investing in their establishment and maintenance. With no commercial leverage point available to manage expansion and upkeep, FSD-Z started a pilot with Master Trainers. They establish and provide advice to new groups for a fee and train up new trainers for a fee. In this way they create a growing pool of incentivised trainers working with a growing pool of community groups.

PSP4H ran into a comparable situation when exploring the potential for scaling up low-cost healthcare services for the poor in Kenya. The big commercial players were not interested, believing that people living in poverty could not pay for services. Many other parts of the (public) healthcare system were either poorly managed and/or too dependent on aid money to consider commercial services to reach the poor at scale.

Case 9. PSP4H - commercial healthcare networks for those who cannot pay in Kenya

Working with licensed, but unregulated, small pharmacies, laboratories, physicians and local associations, PSP4H established member-based service networks to provide value-adding services and practices such as bulk purchase, training and branding. This enabled members to lower prices, increase quality and attract more clients.

The PSP4H story adds to the narrative whereby they found a systemic and scalable solution with an amorphous group of small players. In the MDF and M4C stories systemic change had to be built from the bottom up, with larger players emerging in the scenario once small local actors had demonstrated the business case. The larger players are missing in the FSD-Z and PSP4H stories. As with the Pacific, markets in Africa are often thin compared to Asia.

Case number ten focuses on another successful approach to enable semi-formal, low-cost service providers servicing poor households to run like sustainable businesses.

Case 10. DEEPEN – investing in low-cost private education in Lagos, Nigeria

The DEEPEN programme catalysed a financial market to make loans available to very low-cost private schools. This enabled these semi-formal, low-cost service providers to invest, grow and become more sustainable as businesses serving poor families. The financial market has opened up with loans being issued, a growing recognition that risks are manageable and more financial service providers have started offering services.

DEEPEN's research showed that low-cost private schools in Nigeria struggled as businesses because they could not invest. It was difficult enough to make their, mostly poor, clients' parents pay on time while banks simply had not recognised them as clients. Existing loan products were not suitable for them.

DEEPEN emphasised that it was essential to take away the information asymmetry between demand and supply. Banks had to be informed about the demand for financial services from low-cost private schools. Schools had to understand what banks required in order to be able to issue loans. This was achieved after a significant study on 'Schools as a Sustainable Business' took place, followed by a forum to share and discuss the findings and facilitated follow-up.

Here we come nearly full circle. It starts to look like the ideal Katalyst at the beginning - where market intelligence is all that is required to make strong partners open up a market. However, this story unfolds in an unusual market (low-cost private education services) in an unlikely country (Nigeria). Knowing how to unlock a market proves hard to predict – it all depends on context.

We shift gear again for the eleventh case. In all the cases so far, the beneficiaries were poor self-employed farmers or small, often informal, enterprises working with the poor. In such cases a change in the supporting environment, the 'system', can have an immediate impact on enterprise performance. However, as urbanisation progresses, a growing number of people will be employed in larger industries. Increased competitiveness may be very important for poverty reduction, stable employment and job quality. Case eleven describes how MDF tried to achieve this in the leather export industry in Pakistan.

Case 11. MDF - localising skills and services for a competitive leather industry in Pakistan

MDF focussed on the leather footwear industry: developing missing ancillary services, increasing skills and participation rates for women in the more productive sub-sectors, and ensuring internationally compliant testing services were available.

The leading firms needed access to a range of services and production line improvements to increase their international competitiveness. For each of these new services, partners, equipment and clients need to be found – a typical job for a business facilitator – and together they contributed to a more sophisticated market system around export-orientated leather production.

In this kind of industrial transformation process, the task of the business facilitator remains the same and the relevance of this work for poverty reduction and having a decent life is the same, but results look different. Many innovations need to come together to make a more complex production process more competitive, and this will gradually translate into more jobs, more stable jobs and better-paid jobs. The global MSD portfolio still leans towards agriculture, and its most prominent cases come from agriculture and related services. These market systems lend themselves more easily to stories of scale that communicate value for money. But agriculture will intensify in the face of climate change, and poor women and men will continue to move to cities to find employment. Economically transformational change for stable, sustainable livelihoods is therefore important too.

Case 12. Road to Jobs - promoting good agricultural practices in post-conflict Afghanistan

Road to Jobs used media and training programmes for local commercial extension services to get information and knowledge to farmers about better agricultural practices that emerged while they were isolated during the many years of conflict. They needed to catch up on developments to regain their position in international markets.

The final case shows another context in which communicating hard numbers might be easy, but the value of investing in sustainable economic transformation may be huge. It focuses on the work of the Road to Jobs programme in Afghanistan to build market systems in a post-conflict environment. The results are also difficult to quantify, but that does not make them any less relevant.

3. Four main messages to take away

The relevance of the MSD approach is not determined by locations, economic conditions, sectors or partners.

Under all but the most extreme conditions people living in poverty use markets, pay for services, engage in business and trade for their livelihoods. This means that under virtually all circumstances the potential exists for viable, sustainable, scalable business activities that create jobs, income or access to services.

MSD is largely about identifying business cases. This is especially the case for those not yet identified by the private sector because they do not know the potential customers, do not recognise the potential of new products and services, and do not know the business model to make and deliver to these customers in an affordable and useful manner, and cannot mobilise investment for unproven business models. Or all of these combined!

As the cases tell us, conditions never seem too adverse or partners too small, but the poor are often not recognised as attractive clients. Making products and services for them, that are affordable and understood, is not easy.

The MSD approach is not exclusively characterised by interventions that are light-touch, involving short-duration technical assistance.

More committed, medium-term and 'heavier' support is sometimes justified. Applying a straitjacket may undermine the sustainability of results. The cases show very different types of partners, requiring and getting very different 'deals', resulting in sustainable outcomes.

MSD is about supporting the design, testing and fine-tuning of innovate business models with an appropriate support package to allow business models to become commercially sustainable. A support package should never violate core MSD principles, but it does need to be realistic about the extent to which it can lean on available local services and work out how to fill financial, technical and managerial gaps in the model as sustainably as possible. This implies that the support required can change in time and that multiple steps with one partner may be required to make a model robust.

As the cases tell us, sometimes demonstrating the business case is all that is needed. In other cases, a prolonged and risky investment plan is required. In some cases partners know what they are doing, in other cases they are finding their way in the dark.

The MSD approach does not assume that market development experts are necessarily best placed to understand the root causes of system underperformance and propose innovative solutions.

Nor does it assume that our private-sector partners know best, and fund whatever they propose. Either would underestimate the complex nature of the task at hand, namely working out models that do not exist yet and making them commercially viable.

Business cases are 'found', and business models worked out in the field, informed by the invariable intricate and complex realities faced there. More than these brief cases can show, MSD is about how

we do research, the actors we engage with, the questions we ask (do we think we know or do we know when to listen), which facts we take at face value and which we challenge, the time we have to learn, and how we distil answers from seemingly contradictory and incomplete findings.

Business and MSD are both methodology and art. There are proven practices to guide us, but they do not bring us all the way to a good deal. This also helps explain some of the differences between the cases. Some programmes are good at making networks work, some know how to present business cases to investors, others know how to manage multi-stage investments plans, and others excel in making deals and grasping opportunities. There is no one-size-fits-all here.

If we want to share the story of MSD - and the good development principles behind it - we need to get more systematic at researching and writing up our success stories.

All cases show fascinating systemic impacts but only a few are able to capture and quantify these. Programmes which are not audited to the DCED Results Measurement Standard are typically more tenuous about linking market outcomes to pro-poor results. Very little of this rich tapestry of change laid out here is backed up by what some call 'independent' research. Finally, many stories are never documented, or never followed up.

Impact stories are complex – you need to be there as they unfold, and you need a system for recording what unfolds (this we have, it is called the DCED Standard). But you also need to be able to turn this richness into convincing stories and perhaps independent research to add more credibility.

Case 1: Katalyst, Bangladesh
Making last mile seed distribution work for small farmers

Pioneering MSD when reaching millions matters

Katalyst was one of first programmes to translate the M4P / MSD concept into a functional approach that increased the incomes of millions of poor people in Bangladesh.

Katalyst challenged many conventions. For instance, it pioneered a flat organisational structure in which young talented business graduates, mostly without a development background, worked together to analyse market dynamics and design new commercially sustainable business models. Also, it emphasised the importance of a strong entrepreneurial ethos, 'acting like a business would' and investing in pro-poor market opportunities instead of delivering aid in the more traditional manner.

Development concepts that were hot in 2018 such as adaptive management were practiced by Katalyst from the early 2000s. Many of its lessons remain relevant and perhaps are still not fully appreciated today. Due to its success, Katalyst was implemented for three consecutive phases.

How to make affordable quality seeds available to millions of small farmers

In 2008, when Katalyst started working on making 'last mile' quality seed distribution work for small farmers, there were an estimated four million poor small vegetable farmers, including more than a million female farmers. Small farmers typically work plots of land of less than 2.5 acres, on which they

build their house, and grow rice for home consumption as well as a few cash crops such as vegetables (often both sold and consumed). Nearly all these small farmers can be categorised as poor; from such small plots it is difficult to derive a reasonable income.

For these farmers, vegetable farming presents an important income opportunity due to the relatively high returns. At the same time, it can help improve nutrition as in Bangladesh the average consumption of vegetables is less than half of the recommended amount.

Demand for vegetables has been growing in Bangladesh over the past few decades due to a gradual increase in national prosperity, urbanisation and changing dietary habits. However, many small farmers, especially in remote areas, have benefited only marginally from this growth. Their productivity was, and remains, low due to the use of low-quality seeds, fertilisers, and pesticides. According to the Ministry of Agriculture, in 2008 only 18 per cent of all farmers were using fresh and high-yielding seed varieties, with the rest using old, often genetically impure seeds, retained for many generations, which are less likely to germinate and more prone to diseases and low yields.

At the time, there were about 100 big seed companies in Bangladesh, only ten of which had a reputation for supplying good quality seeds. These few companies focused their efforts on the most informed and most commercial, often better-off farmers who were able to invest in better quality seeds. While they heavily competed with each other for these commercial farmers, the seed companies had no plans to expand their market to the small farmers and did not see them as potential clients.

Seed companies lacked the distribution networks to reach small farmers. They typically sold seeds through distributors and/or retailers established in larger towns or near the main markets. Smaller farmers had no contact with these retailers and tended to buy from local seed sellers known as mobile seed vendors (MSVs) in small local markets who mostly sold inferior quality, non-packed seeds. This also meant that small farmers had no access to the information and technical advice provided by bigger retailers, so they were less familiar with modern agricultural practices and inputs such as quality seeds.

Finally, even if they had known, they might not have been able or willing to buy regular-size seed packets as they were too big for their needs. An average regular seed packet would cost around BDT 90 to BDT 150 (USD 1.20 - 2.00 at 2018 rates), which is a lot if you are living on less than USD 2.50 per day.

The question Katalyst had to answer was how to establish distribution systems that would bring quality products and information within the reach of small farmers at affordable prices.

New mobile distribution channels and smaller seed pack sizes

The last mile distribution problem usually refers to fast-moving consumer products such as soap: as products move closer to the final consumer, volumes go down and unit costs go up.

Because seed companies did not see small farmers as potential clients, they were not ready to invest to develop this market. Katalyst concluded that it had to demonstrate the market potential to the seed companies without incurring significant costs. This had to be practical innovation on the cheap.

First innovation: integrating mobile seed vendors into seed company distribution networks

Katalyst persuaded one seed company, Lal Teer Seed Limited, to experiment with integrating the MSVs into their distribution system. As with other last mile solutions, their incentive was that making use of hawkers keeps costs down while massively increasing outreach.

Another advantage was that no major business process had to be changed – the same seeds were distributed through a pre-existing channel. Katalyst shared the costs of getting this new channel operational. This primarily related to training MSVs about the new products so they could make the case to farmers about why more expensive seeds made sense. MSVs often buy seed from farmers without knowing exactly what they are buying and sell in small rural markets or at farm gates, often from open hessian sacks. They had a business incentive to sell high-quality seeds as these offered the promise of a higher profit margin.

The model caught on. Within two years, sales through MSVs enabled Lal Teer to reach 5,000 new client farmers. Other seed companies adopted the same MSV model, indicating there was a growing realisation that this was a viable market.

At the same time, however, Katalyst's impact assessment showed that it wasn't always cost effective for small farmers to buy whole seed packets. In response, MSVs had started to open packs, selling the contents to multiple farmers. This threatened to bring everything back to square one: when packs are open, seed quality deteriorates and the guaranteed origin of pack contents is lost. Farmers were still reporting higher yields, so the model was proving itself, but further innovation was needed.

Second innovation: shrinking seed pack sizes

The next step was to develop mini-packs to match the needs of small farmers. Even though it had been established that small farmers have an appetite for quality seeds, seed companies were still hesitant about mini-packs which had never been tried before. In response, Katalyst did further market research and developed a business plan for mini-packs enough to cover up to 0.03-0.04 acres of land (compared to 0.2-0.3 acres for normal packs).

After discussion with several seed companies, just two showed interest, Lal Teer and A.R. Mallik. Katalyst worked out more detailed business plans with each company for mini-packs of 35 in-demand varieties of vegetable seeds. Katalyst supported the promotion of these new mini-packs through community meetings, demonstrations, promotion materials and attractive packaging. MSVs were trained so that they could inform poorer farmers in more remote locations.

Nearly half a million users in one year

Sales of the new mini-packs surpassed all expectations. Both seed companies had sales target for the first year of 100,000 mini-packs, but sales in the first season alone surpassed 200,000 packets, followed by further sales of 558,000 in the following six months – about four times more than expected. Mobilising MSVs helped them reach small farmers in most parts of Bangladesh: 55 out of Bangladesh's 64 districts were covered.

Based on sales figures and average use per farmer, Katalyst worked out that the total number of households using mini-packs grew from 236,000 to 339,000 to 460,000 in three subsequent vegetable seasons, 80 per cent of which were poor households living on less than USD 2.5 per capita per day.

Repeat buying rose season by season from 15 to 41 per cent. In those three seasons, the intervention created USD 14 million worth of additional vegetables. The income of individual farmers increased by approximately USD 17 per season. Moreover, 90 per cent of the beneficiaries used the produce grown from the mini-packs to feed their own families.

The strong demand for mini-packs and the clear benefit and increase in repeat buying clearly suggest that seed companies, MSVs and farmers are incentivised to continue with, and expand on, these new business practices.

Last mile vendors as the new normal

As a result of this intervention seed companies changed their outlook and actively started targeting small farmers. This led them to expand their distribution networks and make more affordable quality seeds available to smaller clients. Small farmers showed that they were more acutely aware and less conservative than many would have given them credit for. Also, the understanding of the value of MSVs became more nuanced as they proved themselves to be a functional link in distributing seeds and disseminating good practice to farmers.

Katalyst's efforts created a ripple effect in the market. Lal Teer made a significant investment to train up more than 1,000 MSVs to develop its distribution system further and reach even more farmers in remote locations.

Other companies followed suit. A competitor explained how they poached Lal Teer staff to gain access to the business model for marketing seed mini-packs. Their aim was to get into this market and reach 40 to 45 per cent of all small farmers.

The number of MSVs has grown significantly. By 2018 there were an estimated 4,500 MSVs operating in Bangladesh, each supplying an average of 125 farmers. Because they have become part of the seed companies' distribution networks, the MSVs are empowered with knowledge on how to use quality seeds, which again is passed on to farmers.

Mini-packs of seed have become the new normal and other agro companies are now using the same formula to introduce other agro-inputs to this new market segment.

In 2014 Katalyst won the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee Prize For taking development innovation to scale.

Katalyst: the bigger picture

The work described in this case study represents just one intervention area in the wide portfolio of the Katalyst programme that spanned three phases from 2003 to 2018.

In Phase I, Katalyst had a budget of CHF 26 million (approximately USD 27 million at 2018 rates) and was funded by the Swiss Agency for Development and Cooperation (SDC), United Kingdom's Department for International Development (DfID) and the Swedish International Development Cooperation Agency (SIDA). Katalyst was implemented by Swisscontact and GIZ International Services. Its first phase helped to create around 200,000 full-time equivalent jobs and benefited 700,000 farmers and small businesses, by increasing their access to better services, technology, inputs and representation.

In Phase II, Katalyst had a budget of CHF 51 million (approximately USD 53 million USD at 2018 rates) and was funded by SDC, DFID and two new donors: Canadian International Development Agency (CIDA) and the Embassy of the Kingdom of the Netherlands (EKN). It was implemented through Swisscontact. In this phase, Katalyst built on its initial success to reach more poor people by using the market development approach, but added more focus on mitigating environmental, social and gender-related issues. In Phase II, Katalyst impacted around 2.36 million farmers and small businesses, increasing their income by around USD 295 million.

In Phase III, Katalyst had a budget of CHF 32 million (approximately USD 32 million at 2018 rates) and was funded by SDC, DFID and the Danish International Development Agency (DANIDA). It was again implemented through Swisscontact. In Phase III, Katalyst further expanded its outreach but also focused on sharing its learning with the private and public sectors. By the end of Phase III it was estimated that all three phases had benefited 4.75 million farmers and small businesses, with an income increase of USD 724 million.

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Case 2: PrOpCom, Nigeria
Buying down risk to unlock the tractor rental market

Protecting agriculture from the 'resource curse'

When the Promoting Pro-Poor Opportunities in Commodity and Service Markets (PrOpCom) project started in 2006, it was one of the first to implement the M4P / MSD approach on the African continent, and the first to do so in Nigeria. PrOpCom was funded by the United Kingdom Department for International Development (DfID).

Nigeria is an African economic powerhouse with a large domestic market, ethnic groups with a strong business tradition, and a relatively developed and diversified domestic economy. In some respects, Nigeria was a suitable country for the introduction of the M4P/MSD approach, since this can feed off and amplify such a strong domestic dynamic.

But the high levels of corruption and the high cost of local production caused by the oil boom raised doubts about what a programme such as PrOpCom could achieve. Agriculture, once a key driver of economic growth in Nigeria, had suffered from the resource boom.

PrOpCom went through several phases. A lengthy inception phase, from 2004 to 2006, during which commodities were researched and selected, was followed by a pilot phase, from 2006 to 2008. Full scale implementation only came about in the third phase, from 2008 to 2011.

This case study focuses on PrOpCom's work to develop a commercial market for tractor services, circumventing poorly managed government subsidies and creating access to the equipment small farmers short on labour need to till their land.

Keeping farming attractive and developing an equipment rental market

Notwithstanding its dependence on oil for revenues, Nigeria has remained a largely agricultural society. Approximately 70 per cent of the population engages in semi-subsistence agriculture. These are mostly smallholder farmers cultivating one-to-two hectares (ha) of land. Together they cultivate approximately 30 million ha, less than half of the land suitable for cultivation.

Decline in agricultural production in Nigeria began with the oil boom in the early 1970s. In a classic 'resource curse' scenario, the boom led to the appreciation of the Nigerian currency while strong demand for goods, services and labour drove up prices further. Export crops became less competitive while domestic commodities suffered from price controls to satisfy the urban demand for cheap food. As a result, agriculture became progressively less attractive.

The number of workers available for seasonal farm employment declined due to migration. Being dependent on the arrival of the rains, farmers were unable to scramble enough labour resources when the season began and plant their first crop on time, which also impacted the second crop. The result was lower yields, more crop failure, and even farmers abandoning planting a second season altogether.

Mechanisation was the cheaper and quicker alternative to labour. Average labour costs were around USD 50/ha in the north of Nigeria and USD 57/ha in the south. The average costs of hiring a private tractor were USD 29/ha and USD 37/ha respectively. Tractors were cheaper and faster, and properly combined tractor-pulled land preparation tools could also increase productivity.

However, tractors and commercial equipment rental providers were in short supply. In 2008, there were around 20,000 tractors in Nigeria, although not all in working order. Given that one tractor could service around 137 smallholders in the course of a typical year and that approximately 9.6 million out of the nation's 16 million smallholders could be potential customers for tractor service providers, PrOpCom estimated a demand for more than 70,000 tractors.

The main reason for the shortfall of tractor services was government schemes that undermined the development of commercial markets. First, importers focused on courting government officials for big contracts rather than developing a private clientele. As a result, there were no local sales and service networks for tractors, equipment or spare parts, and trained mechanics were sparse. According to PrOpCom's estimates, in 2008, half of Nigeria's tractors were in a state of disrepair and being cannibalised for parts.

Government would purchase tractors for distribution at subsidised rates (40 per cent) to cooperatives and farmer groups. Often these would end up being sold to businessmen who would resell them at near market rates to well-connected bigger farmers.

Government would also purchase tractors for public agro-service centres, which would rent them out at subsidised rates, often to politically connected, bigger farmers. Tractors at these service centres were often grounded due to poor maintenance.

Finally, farmers could purchase a subsidised tractor under a government-backed loan scheme. Corruption and complex procedures made this channel ineffective. Purely commercial loan products for heavy agro-machinery were considered too risky by banks.

Ultimately, most tractors operated by genuine service providers emerged from one of these schemes and most were in poor shape. Nevertheless, these service providers were the only channels through which tractor services reached smallholders at commercial rates. The subsidies intended for them had been eaten up by others.

Finally, neither the government nor the tractor suppliers trained farmers on tractor usage. Tractor service providers tended to offer only basic services like ploughing, while a combination of ploughing, ridging and harrowing was required to increase productivity.

Brokering a three-party deal to connect finance, supply and demand

PrOpCom had to demonstrate that business could be done in a different and better way. It had to establish a new sales channel geared towards supplying private tractor service providers with new tractors and supporting services while keeping in mind that most importers and distributors would still find it more attractive to cater to large government orders with cash up front.

This new sales model needed to have all the components to make the business commercially attractive and sustainable for the distributors, their client service providers and their client farmers.

First innovation: the first-ever deal to open up the tractor rental market

Despite the presence of a clear business case for private tractor service providers, no tractors were sold privately and no private finance was available. PrOpCom had to broker a three-way partnership to catalyse the private sector supply of tractors.

The first partner was the Tractor Owners and Operators Association of Nigeria (TOOAN), a nationally-registered association of commercial tractor operators. PrOpCom asked TOOAN to estimate the demand for tractors among their members and identify the preferred brand. TOOAN highlighted the Indian-made Mahindra 60HP model, the sole distributor of which was Springfield Agro Ltd.

PrOpCom had spoken to several tractors distributors but none believed that the PrOpCom concept could work in Nigeria. However, Springfield Agro had a different outlook due to its Indian connection. Mahindra had entered the Nigerian market in 2005. Their experience in India had convinced them that private sector-led distribution and servicing was the future for Nigeria but they hadn’t found a way to open up this market.

PrOpCom's approach gave Springfield the opening it had been looking for to start investing in sales and marketing, establishing a network of spare part distribution agents, working out operator training programmes and offering after-sales service. However, financing was still an issue.

Like the tractor importers, PrOpCom had approached several banks to explore lease-financing, but none of them had the expertise or genuine interest to assess agricultural loans. To demonstrate the business case, PrOpCom developed a model cash-flow statement and lease risk analysis. The First Bank Nigeria showed interest, but it took a very carefully crafted arrangement involving the Central Bank of Nigeria before the bank was willing to issue lease agreements.

PrOpCom signed an MoU with all three stakeholders (Springfield Agro, First Bank and TOOAN), to pilot the purchase of 50 tractors in the Oyo, Ogun and Kaduna states of the country. This was the first pilot of its kind in Nigeria's history.

Second innovation: follow-up training to improve the quality of service

Despite this careful planning, the pilot revealed several issues. The flat rate for loan repayment had to be adjusted given the seasonality of work. Furthermore, despite selection by TOOAN and initial training by Springfield Agro, tractor operators needed more technical training. Also, the range of tractor implements had to be expanded to maximise the benefit of mechanised land preparation.

PrOpCom collaborated with the Institute for Agricultural Research and Training to provide training to TOOAN tractor operators. This course enabled operators to help farmers increase their productivity. Also, PrOpCom assisted Springfield Agro to develop better training materials for operators.

PrOpCom knew it had to demonstrate the pilot's success to a wider audience to gain traction, so it organised a stakeholder event in Lagos. Among the participants were bank officials, tractor companies, farmer associations and the media. PrOpCom showed a promotional video about the pilot intervention, which generated more interest.

PrOpCom invested a total of Naira 53M (approximately USD 147,000 at 2018 rates) to develop the tractor market. This included the cost of training programmes as well as the 20 per cent cash-back guarantee provided to First Bank. Given that potential buyers of the new tractors may have also been averse to the risk of taking out loans, PrOpCom agreed with First Bank that the cash guarantee would, after eight months of on-time repayment, be handed over to the loan recipient or tractor buyer as a reward.

Sustainable impact at scale: 40,000 farmers have access to tractors

In just one year the pilot intervention was able to pave the way for the private sector to follow suit and offer services to a market that was previously considered too risky.

According to an impact assessment, 85 tractors were delivered in that first year to new owners and only one customer defaulted. In line with the agreement, TOOAN reallocated the defaulter's tractor to another TOOAN member who continued the loan repayment.

Also, 160 tractor operators and 18 mechanics received training on operating, maintaining and repairing their tractors. Encouraged by the potential sales, Springfield Agro made further investments in promotion, importation and distribution of additional machinery.

Farmers utilising the private tractor services cultivated more land and grew multiple crops. Their productivity also increased because of the efficiency of using a tractor. Finally, farmers saved money as tractor services were cheaper than hiring labour.

By December 2011, the PrOpCom intervention had directly reached 9,495 farmers and created 2,244 additional jobs for farm labourers and tractor operators. Two years later this figure had gone up to 47,011 farmers and 10,986 jobs. The intervention created approximately USD 12,900,000 in additional income.

Three banks and one tractor company wake up to the potential

Further benefits followed as other commercial banks started to show interest in financing agricultural machinery. In 2011 Springfield Agro invited five interested banks to visit the Mahindra production plant in India. On the back of this trip, PrOpCom was able to facilitate another MoU with Oceanic Bank, Springfield Agro and TAK Tractors (another tractor distributor) to finance 150 tractors in northern Nigeria. Intercontinental Bank also initiated its own similar scheme in the South for 30 tractors. Neither of these banks was provided with a 20 per cent cashback guarantee from PrOpCom.

TAK Tractors followed the Springfield Agro example and started offering a complete package of services to farmers. TOOAN became more organised because of it work with PrOpCom and expanded to other states such Adamawa, Bauchi, Kaduna, Kwara and Taraba.

PrOpCom: the bigger picture

The work described in this case study represents just one intervention area in the wide portfolio of the PrOpCom programme that spanned phases from 2004 to 2011

The total budget was GBP 16.6 million (approximately USD 21.3 million at 2018 rates) of which the bulk, GBP 9.9 million (approximately USD 12.7 million at 2018 rates), was allocated to the third scaling up phase. During these phases PrOpCom was implemented by Chemonix.

PrOpCom's total programme outreach up to 2011 was 1.26 million beneficiaries; it created 17,633 new jobs and USD 52 million in additional income.

After 2011, the programme evolved into Propcom Mai-Karfi ('stronger'), which had its design phase from 2012 to 2013 and full implementation from 2013 to 2017 (it was also subsequently extended to 2019). The programme continued to be supported by DFID with a total budget of GBP 27 million (approximately USD 34.6 million by 2018 rates) and was implemented by Palladium in partnership with TechnoServe.

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Case 3: ALCP, Georgia
Building veterinary infrastructure in a post-Soviet economy

Filling the void caused by economic transition

The Alliances Caucasus Programme (ALCP) in South Georgia aims to reduce rural poverty by implementing the 'Making Markets Working for the Poor (M4P) approach.

The programme demonstrates the relevance of the MSD approach for creating markets in an era of economic transition – in this case after the collapse of the Soviet-style planned economy. This was a particularly traumatic era in Eastern Europe as virtually overnight all collectively provided services were wiped out with practically no private commercial alternatives to replace them. The economy shrank and semi-self-sufficiency returned to agriculture. Only gradually were new businesses able to step into the void and get business going. The ALCP case illustrates this step-by-step rebuilding of – this time commercial – markets.

How to rebuild veterinarian services after economic collapse

After Georgia gained independence from the Soviet Union in 1991 it went through a period of civil unrest and painful economic transition until 2003, when a new government began social and economic reforms.

Agriculture was particularly affected as in the Soviet era all services were provided by government. Also, farms were managed by the collective Kolkhoz, which effectively treated its member farmers as

workers. With the demise of the Soviet Union this system collapsed. Back in charge of their farms, farmers lacked the professional knowledge to manage them; publicly managed input systems and veterinary services had stopped working. As a result, animal health care, breed quality and animal productivity all declined. Between 1997 and 2007, agricultural GDP declined by 9 per cent.

This case starts in 2011 when the Alliances programme started investigating the state of veterinary services, or lack thereof, in the livestock sector. In the three mountainous areas in which ALCP is active, 90 per cent of farming households were reliant on semi-subsistence livestock farming, supplemented with small amounts of crops for livestock or household consumption. Most farms in the region were small, with fewer than 10 milking cows or 50 sheep. Half of the population was poor, living on less than USD 1.25 a day.

Livestock farming was relatively unproductive due to the system collapse. The genetic stock of livestock was depleted due to years of overbreeding. Farming practices were basic and cash investments minimal. Animals were often underweight and suffered from diseases and high mortality rates that could have been prevented by appropriate vaccines.

Maintaining livestock health is crucial for the resilience of these families' livelihoods, which in turn depends on accessibility and availability of veterinary services. However, except for the main towns, veterinary services in Georgia had all but ceased to function. Only 8 to 14 per cent of farmers had access to local veterinary services and just 5 to 8 per cent were using appropriate products such as de-worming drugs.

Despite all this, livestock farming showed much potential in Georgia. There is strong demand for food safety and hygiene-compliant, quality-assured meat and cheese products. This is driven by the rapid expansion of supermarket chains all over Georgia. There is also potential for export to markets in the Caucasus, Central Asia, the Middle East, the Ukraine and the European Union. Within Adjara there is a growing tourist industry, which creates a potential market for regional products.

After the collapse of the collective system, most farmers started relying on self-educated veterinarians operating from their rural homes, selling a limited range of drugs, as well as on small veterinary pharmacies in the cities. These pharmacies were often run by untrained staff. In Ajara there were only 19 such small veterinary pharmacies, all located near the municipality centres. Farmers had difficulty accessing them as they were far from the villages and their services were expensive.

This problem was compounded by the fact that in Georgia women do most animal husbandry work and are usually the first to notice signs of disease. However, due to prevalent cultural norms, they are not expected to travel outside their villages to nearby towns where a pharmacy would be located. Only women living close to urban centres or markets would visit pharmacies. As a result, most farmers relied on traditional home-made remedies and buying the few drugs available based on what they thought could work.

Veterinary product manufactures and importers had no rural distribution channels. Both farmers and pharmacists had to make the long journey to the capital Tbilisi to buy products and get advice. Manufacturers and importers lacked the confidence to invest in rural distribution networks.

Most businesses operated conservatively given the regulatory uncertainty of post-Soviet Georgia. Also, they didn't recognise small farmers as potential clients. They assumed demand would be limited so they

focused on bigger clients. That meant farmers had no exposure to their products and were unaware of the difference appropriate treatment could make. How to get this market to move?

Better distribution and product development

A conventional development approach might have been to give free support to rural pharmacies and distribute veterinary products. This might offer quick relief for some farmers but would not contribute to anything sustainable. Instead, Alliances identified that veterinary product manufacturers and importers in Tbilisi would be the ideal channel to reach the smaller livestock farmers. They had the business incentive to invest in upgrading pharmacies, training pharmacists, educating farmers and ensuring the timely distribution of products. Alliances also concluded that if they could successfully persuade at least one major manufacturer to upgrade rural distribution – and thus demonstrate a viable business model – other businesses would have the confidence to invest too.

Alliances approached Roki Limited, the largest distributor and manufacturer of generic veterinary drugs in Georgia. Alliances showed its market analysis to Roki, demonstrating the business case for rural expansion. It suggested a deal in which Roki could make use of Alliances' market intelligence and connections to expand its distribution network into unexploited rural areas. Alliances also offered co-investment to further reduce the risk.

First innovation: training and supplies for five one-stop-shop pharmacies

The first intervention, in 2012, was designed as a pilot to test the viability of the new business model. Roki engaged with five pharmacies identified by Alliances in the KK region and supported them with veterinary training so that these pharmacies could provide farmers with appropriate medication and information.

Roki would also ensure a weekly supply of products to these pharmacies at wholesale prices and connect pharmacy store phones directly to its advice hotline. Once Roki was comfortable with the initial pilot, it expanded the business model to eight other pharmacies in the SJ region.

Roki took the initial model a step further by promoting its products through brochures, flyers and shop banners at pharmacies. Since Roki needed a push to get into the market, Alliance contributed 61 per cent to the total investment of CHF 105,243 (approximately USD 106,085 at 2018 rates).

Second innovation: satellite pharmacies to expand rural outreach

In 2013, Alliances and Roki came up with another solution to expand outreach to women who could not travel to local market towns in the form of low-cost mobile satellite pharmacies in the KK region.

ALCP contributed 59 per cent of the total investment of CHF 13,925 (approximately USD 14,036 at 2018 rates). When the model proved itself, Roki decided in 2015 to scale-up its distribution model to the Ajara region. It also set up two new warehouses for nationwide distribution.

At this stage ALCP decreased its support to 33 per cent of the total cost of CHF 322,027 (approximately USD 324,603 at 2018 rates).

Third innovation: a laboratory for developing new vaccines

As a third step ALCP supported Roki to set up a laboratory to help diagnose infectious animal diseases and work on new vaccines – hitherto a key constraint in their business model. Previously, they had been reliant on the painfully slow government laboratory, which resulted in a production backlog.

ALCP covered 33 per cent of the total investment of CHF 42,645 (approximately USD 43,000 at 2018 rates).

Fourth innovation: an agro-portal to deliver information directly to farmers

In 2016, as part of a scaling up of rural distribution to the rest of Georgia as well as Armenia and Azerbaijan, ALCP supported Roki to develop an agro-portal called Agroface, through which farmers would be able to directly access information on livestock management.

The portal helped farmers monitor the risk of animal diseases, built awareness of available treatments and connected them directly to Roki distributors.

ALCP contributed 31 per cent of the total investment of CHF 27,250 investment (approximately USD 27,500 at 2018 rates).

Nearly half a million beneficiaries

Encouraged by the sales and response from rural areas after their interventions, Roki significantly scaled up its distribution network to include a further 346 pharmacies across Georgia – 44 new pharmacies in areas in which ALCP operated and 302 pharmacies outside the programme area. As a result, in 2018 an estimated 67 per cent of Georgian famers were using Roki products.

In the five years following Roki's initial investment in new business models with ALCP, 442,000 farming households benefitted. Their collective income increased by CHF 11 million (approximately USD 11 million at 2018 rates) thanks to better access to veterinary services.

Roki's model of providing information alongside products has resulted in positive behavioural change as farmers have started taking better care of their animals and taking preventive health measures. Roki supplying satellite pharmacies directly made the pharmacy business more profitable, especially in remote areas.

The programme also contributed to changing gender norms in the industry. Veterinary pharmacies used to be run by men; today half of the pharmacies are run by families. Finally, Roki's laboratory has increased production of veterinary medicines by 20 per cent. Roki makes 1,035 types of veterinary medicines available in Georgia, 510 of which are produced locally.

Roki also increased product exports to Azerbaijan and Armenia using a similar approach. In Azerbaijan, Roki developed a commercial partnership with Real Vet Ltd, a veterinary inputs supplier company covering 600 veterinary pharmacies. Roki replicated the one-stop-shop pharmacy model with an improved range of veterinary medicines, training for veterinarians, pharmacists and farmers, and a hotline.

In Armenia, at the time of writing, Roki was in the process of replicating the same model but is still looking for a reliable partner. To get a distribution license in Armenia, medicines must be individually

registered. Roki has increased the number of veterinary medicines registered in Armenia from two to five.

In Turkmenistan, Roki established a partnership with two large veterinarians who have been distributing new Roki products for sheep farmers.

Finally, Roki entered into a partnership with Tekro Ukraine, a Ukrainian veterinary supply company to test and distribute Rumifos, a feed additive which can increase milk yields by 12 per cent and live weight by 13 per cent.

What is clearly developing is a regional system of commercial veterinarian and animal health services based on the original Roki distribution model.

Ongoing investment in livestock services

Roki's work in the veterinary market system has worked both on the demand side (creating awareness among livestock farmers) and on the supply of veterinary services (increasing distribution). Pharmacies are now better equipped to offer veterinary solutions to rural farmers.

Roki's testing laboratory has helped to further improve the quality of their products. The laboratory has improved the service of diagnosing medicines as it can efficiently run sample tests in a matter of hours – a process that used to take days.

Farmers are also saving considerable time and money required in travel by connecting directly with input distributors through the agro-portal.

This more receptive environment for veterinary services triggered increased business activity. In 2016, 11 independent entrepreneurs opened their own pharmacies copying the Roki model. Since then, three more independent entrepreneurs have followed suit.

The two other main veterinary inputs suppliers in Georgia, besides Roki, are Invet and Megavet. They have adopted a similar model of distribution and training with pharmacies, for which Invet received support from another SDC-funded programme.

Credo Bank started working with Roki and 30 other veterinarian pharmacies to offer micro-loans for purchasing drugs and livestock-related equipment. Credo reduced its 8 per cent base interest rate to 5 per cent with Roki and the pharmacies covering a further 2 per cent, which means that farmers can take loans at 3 per cent.

ALCP: the bigger picture

The work described in this case study represents just one intervention area in the wide portfolio of the ALCP programme that started in 2008 and still continues.

ALCP was implemented by Mercy Corps and was expanded several times. It started as the Alliances Programme in 2008 with funding from the Swiss Agency for Development and Cooperation (SDC) in the Samtskhe Javakheti (SJ) region. In 2011 Alliances SJ received a two-year extension while a new Alliances Kvemo Kartli (KK) commenced operations. In 2014, Alliances KK was extended into a second phase, a new branch was added to the programme in Ajara, and the older SJ branch was awarded a two-year monitoring and sustainability 'standby phase'.

The three branches together formed the tri-regional Alliances Lesser Caucasus Programme (recently simplified into the Alliances Caucasus Programme, but the acronym was kept as ALCP). From 2014, under the newly formed ALCP, management and operations were fully harmonised across the regions. From 2014 to 2017, ALCP had a budget of CHF 7.5 million (approximately USD 5 million at 2018 rates). The current phase of ALCP runs from 2017 to 2021 with a budget of CHF 6.5 million (approximately USD 6.5 million at 2018 rates).

ALCP works with businesses of all sizes that have the potential to generate lasting and economically beneficial changes. ALCP prioritises the inclusion of women. Broad programme objectives are to provide small livestock farmers with better inputs and services, market access, and an efficient and resilient operating environment.

Over ten years from 2008 to 2018, ALCP achieved substantial scale and systemic change benefitting 558,000 households and generating additional income to the value of USD 39 million for farmers, businesses and employees.

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Case 4: ÉLAN, RDC
Bringing light to the Democratic Republic of Congo

Finding private ways to make markets work

Despite its extraordinary economic potential, the Democratic Republic of the Congo (DRC) remains desperately poor, ranking at 176 out of 187 in the 2015 Human Development Index. Decades of conflict, instability and bad governance have taken their toll and most of the poor lack the opportunities to lift themselves out of poverty.

In 2014, the UK Department for International Development (DfID) launched ÉLAN RDC its first MSD programme in DRC.

This case focuses on a partnership within ÉLAN's renewable energy portfolio. The programme partnered with Altech, a private distributor of solar lamps in DRC, to offer access to modern energy to off-grid households (which constitute more than 90 per cent of DRC's population).

How to increase access to electricity when the public grid only manages 10 per cent coverage

DRC has one of the world's lowest rates of electrification. According to ÉLAN's market research, over 90 per cent of the country' population live without access to electricity. This amounts to 13 million households. Even households with access to electricity, estimated to be about 1.3 million, experience frequent power blackouts. Despite massive aid support, access to the grid has been steadily decreasing. Key bottlenecks preventing the development of the energy sector include a lack of governance and

regulation, a limited and decaying grid – the rehabilitation and expansion of which is very expensive and perhaps uneconomical beyond the main hubs – as well as high taxes and duties on solar products.

Due to the energy crisis households end up spending a major part of their monthly income on low-tech, toxic, polluting and expensive energy solutions such as candles, kerosene lamps and fuel to light their homes, charge mobile phones, power home appliances and cook.

This is ironic as the country is blessed with a rich resource of potential renewable energy (solar and hydro). If this resource could be properly utilised, all of DRC's population of 85 million people, including the 25 million urban poor, could have access to electricity. According to ÉLAN's analysis, this would result in poor households having USD 7 per month more to spend, which would allow them to work longer hours, saving on fuel and being less exposed to fire and health risks.

Most power generation development in DRC is directed toward mining companies seeking to power their facilities. Thus, the major share of the electricity produced, mainly from ill-conditioned hydro and thermal power stations, is directed to the industrial sector and few urban areas.

The Inga Dam on the Congo river has the potential capacity to generate 40,000 to 45,000 MW of electric power, enough to supply the electricity needs of the whole Southern Africa region. Nearly all aid earmarked for energy has been directed toward the national electricity company, Société Nationale d'Electricité, to unlock this massive potential, but management of these investments has been poor.

In 2017, USAID found that only 675 MW was generated that year. Plans have been underway to build the Inga III dam, which has the potential to provide electricity for the whole country, but work is continually being delayed. The extent of degradation of the dams, transmission line and other critical infrastructure, as well as the corroding effect of endemic corruption, political instability and theft, were all underestimated.

The private sector's involvement in the production and distribution of renewable energy products has been low. Until 2015, no solar power products were to be found anywhere outside the Kivu region. Private companies found it less risky to target the relatively affluent part of the country's population.

Also, there is a complete lack of awareness among consumers of solar products and the private sector lacks the financial capacity to open up DRC's potential market. And there is no government initiative for the promotion of renewable energy. Solar products were unnecessarily expensive due to a 42 per cent government import tax.

Given that the private sector was not equipped with the knowledge or resources to truly open up the market and to meet the needs of the poor, ÉLAN saw an opportunity to apply the MSD approach to build the use of renewable energy by assisting private market players to develop effective models of education, product marketing and distribution.

A private channel for solar power

While ÉLAN wanted to work with the private sector, its initial market research and scoping suggested that very few companies were interested in collaborating because of the perceived risk. Altech emerged as a suitable partner that was interested in expanding its existing solar solutions distribution business as it was already in the market, albeit selling to a very small clientele.

At that time, Altech was a small distributor in Kivu importing solar lamps to distribute exclusively to teachers. It provided lamps on credit through partnership deals with school authorities. The market was saturating fast but Altech was reluctant to sell to a wider audience because of the risk and costs associated with expanding. ÉLAN signed a partnership with Altech in 2016 to pilot an innovative distribution system to get more households using solar lighting.

ÉLAN studied the domestic and international markets and concluded that direct marketing was the best way to convince consumers to switch to solar solutions. So, ÉLAN supported Altech with technical and financial assistance in the following areas.

First innovation: expanding the sales force for direct marketing to create awareness

ÉLAN helped Altech to pilot its direct marketing campaign by expanding its sales team from 15 to 100 people in 2016 to sell to consumers beyond Altech's traditional schools market to include the general public, and areas beyond the Kivus to the western (Kinshasa), central (Equateur) and southern (Katanga) regions. ÉLAN was confident that there was a vast potential market if Caltech's products were marketed properly and sales agents were motivated to earn their commission.

Second innovation: sales on credit to facilitate purchases

ÉLAN and Altech quickly realised that to increase sales, it was important to offer credit, as consumers were often not able to afford full payment for products, which cost between USD 10 and USD 50 depending on the type of device. Some of the better performing sales agents were asked to test product sales on credit. In 2016, the test showed that agents were able sell on credit and ensure good repayment rates. During the test phase of the credit system, 5,000 lamps were sold and paid for in less than two months.

Third innovation: pay-as-you-go automatic collection of instalments

To expand sales on credit but manage the associated risks, another innovation to the business model was needed. ÉLAN helped Altech link up with Omni-Voltaic Energy Solutions, a leading producer and distributer of off-grid energy products, to introduce the very first pay-as-you-go (PayGo) solar systems in DRC. The PayGo systems allowed automatic collection of instalments and turned off the device if it had not been paid for. ÉLAN's supported Altech in negotiating better payment terms with Omni-Voltaic, easing cash flow issues and allowing for a continuous supply.

Fourth innovation: external investment to expand the capital base

To sell on credit, Altech also needed a solid capital base, for which it required access to external capital. Since it was difficult to get a loan without collateral, ÉLAN linked Altech with an investment firm, Persistent Energy Capital, which specialised in investing in under-served markets. Persistent Energy Capital supported Altech by improving its financial system and de-risking investment by providing a USD 50,000 grant that leveraged a further USD 200,000 investment, the first of its kind in DRC
ÉLAN allocated GBP 150,000 (approximately USD 195,000 at 2018 rates) to the intervention with Altech.

Half a million users in two years

By the end of 2017, nearly two years after ÉLAN started working with Altech, 120,000 solar home systems had been sold by Altech (this includes sales through activities supported by other donors). In

total an estimated 500,000 users have benefitted from these systems. Each household has on average USD 78 per year more to spend due to extra income and savings.

Savings have been used for food, education, clothing and productive investment. Research in 2018 by Gogla (a not-for-profit off-grid solar energy industry association) found that nearly 60 per cent of off-grid solar customers undertook more economic activity within just three months of purchasing a solar home system – whether by gaining a new job, using their system directly within a business, or being able to work for longer.

In addition, over 90 per cent of households that replaced toxic kerosene lamps with solar alternatives report that they have experienced improvements in both health and feeling of safety.

Changing perceptions on what can work in DRC

Altech was the first company to develop a national distribution network of solar energy products and to roll out direct sales and a pay-as-you-go system, demonstrating a new model for solar sales in DRC. The market reacted positively as people became aware of solar products as an alternative to traditional and expensive energy solutions.

Four major international companies have entered the DRC market. When ÉLAN first approached international solar providers in 2015, none of them were interested in DRC. In 2016, ÉLAN first supported Dlight to enter the DRC market, by de-risking its investment. Others took notice, and GLP, Omni-Voltaic, and Bbox entered the market in 2017. ÉLAN supported their entries with technical assistance and smaller financial packages to reduce risk.

Furthermore, 12 companies that source most of their products from these four international companies have started to distribute solar products. These are now sold in all major economic zones of the country, including Dev Solaire in the South, Eco-Minda and Orange in the West and Total which is distributing nationwide. Some of these companies have been supported by ÉLAN, others have just replicated the model after seeing other players' good results.

Six of these companies are using direct sales based on the model developed with Altech and four are doing consumer credit with pay-as-you-go devices. Like Altech, Bbox has secured international investment. All these companies have joined a national marketing campaign supported by ÉLAN in order to educate consumers on the benefits of solar devices.

In 2018, ÉLAN brought together all stakeholders in the solar industry to discuss common issues. A few months later, an association was formalised with 22 members. One of the association's main goals is to engage with the government and support the development of regulations designed to support the industry. It has commissioned a study to benchmark DRC import tax against other Sub-Saharan African countries. This will hopefully result in lower import taxes. In October 2018, the Congolese government agreed to an exemption for a major international solar home system player, a first step towards a sector-wide exemption.

The impact of ÉLAN's interventions in the renewable energy space with Altech demonstrates the sustainability of the market systems development approach to improving access to energy solutions for the poor, at scale. They help encourage other private sector investors to gain confidence and take the risk to enter an untapped market.

ÉLAN RDC: the bigger picture

The work described in this case study represents just one intervention area in the portfolio of the first ÉLAN RDC programme that ran from 2014 to 2019. This five-year programme aimed to reduce poverty in DRC by increasing the incomes of over one million poor smallholders, entrepreneurs and consumers by the end of 2020. It had a budget of GBP 50 million (approximately USD 64.9 million at 2018 rates) implemented by Adam Smith International. A two-year extension to 2021 was contracted in 2019.

Given the basic economic infrastructure in a country the size of Western Europe, ÉLAN focuses on agriculture (grains and specialty crops) and access to finance, renewable energy and transport in four economic zones. These cover DRC's three main economic corridors – Kinshasa (the capital with 15 million inhabitants), the two Kivus (bordering Rwanda and Uganda) and Katanga (home to DRC's copper belt) – as well as the former Equateur province, one of DRC's remotest areas.

ÉLAN built up a portfolio of more than 150 private-sector partnerships in DRC. The programme also focused on advancing the role of poor Congolese women and adolescent girls, who are some of the most marginalised in the world.

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Case 5: MDF, Pakistan
Building a silage market from the bottom up

Getting big business out of its comfort zone

The Market Development Facility (MDF) is one of Australia's leading programmes for private sector engagement. MDF stimulates investment, business innovation and regulatory reform to create jobs and increase income for poor people.

MDF was set up as an expandable multi-country facility. It is currently active in five countries: Fiji (since 2011), Timor-Leste (since 2012), Pakistan (since 2013), Papua New Guinea (since 2015) and Sri-Lanka (since 2015). Expansion to more countries is underway. MDF functions as a network of country teams which share processes, information and learning to ensure quality and efficiency.

MDF's work in silage is part of its strategy for the dairy, meat and wool sector. The aim is to increase yields and returns for smallholder farmers by stimulating investment in products and services that allow animals to be more productive year-round (feed, veterinarian services and medication, information on basic husbandry practices) and by stimulating investment that connects production to higher-value markets.

Pakistan represents a mix of mature and thin markets. While the country boasts a diverse and dynamic private sector, there are significant differences in economic activity between the Punjab and the Karachi hub and the border land provinces. There are also significant differences in the services available to big farmers compared to those available to smallholder farmers. Most, if not all, relevant agricultural

technology is available in Pakistan but does not reach certain provinces and client groups. Unlike countries such as Bangladesh, the belief is still engrained that small farmers are too conservative to be clients.

How to trigger investment that makes smallholder livestock productive year-round

Pakistan has the fifth largest livestock population in the world, 80 per cent of which is owned by small farmers. There are an estimated six million smallholder livestock farmers in Pakistan. A typical small farmer of Pakistan has 5-10 animals (cows, sheep, goats), depending on the region. Farmers rely on livestock as a source of nutrition from milk and meat. Livestock is also a source of income through daily milk sales as well as occasional meat sales, especially during the Eid season. Other key functions of livestock are security and investment; animals are bought as a store of wealth and are sold according to cash flow needs.

Despite the size of its livestock population, Pakistan still imports milk and meat to meet local demand. Pakistan is currently importing 60,000 tonnes of powder milk and 1,000 tonnes of meat per year. This is because livestock productivity for small farmers is low. One key reason for this is the two drought periods, also known as the 'fodderless seasons', from May to July and from December to February. Agriculture in Pakistan is heavily dependent on the monsoon rains (July to September and March) and flood irrigation.

During the dry seasons, farmers rely on traditional fodder crops such as wheat straw, which is low in nutrition. Smallholders see cow milk yields drop from seven litres/day to four litres/day, whereas with proper feeding ten litres would be possible all year round. Due to the lack of nutrition, even meat animals do not gain weight according to their potential and can lose up to 0.4 kg/day. The key question is how to develop a market for known solutions such as silage (or, for instance, more drought tolerant fodder crops) so that farmers can adopt these and their livestock can be productive year-round.

Silage-making is not rocket science. The required knowhow and machinery are present in Pakistan, but only within the reach of big farmers. Smallholder farmers are considered too conservative to change their ways and the assumption is that their means are too limited to form a credible market worth developing. As a result, the bales and machinery available in the country are generally too big for smallholder farmers.

From their end, smallholder farmers may not be aware of better feeding practices and/or cannot afford what is in the market. Their ability to invest and test is very limited; financial products to facilitate agricultural investment are virtually non-existent. As a result, innovation in business models and products is needed to open up the market for silage and make it reach the millions at the 'bottom of the pyramid' (Prahalad 2006).

Adding systems functions from the bottom up

The penetration of agricultural technology is limited in Pakistan and most companies seem quite content to serve the top end of the market. As a result, MDF often found itself having to introduce agricultural innovation through smaller, often newer companies, occupying the niche between the big established agribusinesses selling advanced technology to big clients, and small informal operators offering low quality solutions to local clients.

This was also the case with silage. MDF launched a series of partnerships, each adding a service or function to the market system, but the first few partnerships had to be really simple. They had to work with new and very local service providers to demonstrate that a small-bale silage model was viable and smallholders were willing to buy them.

MDF's research identified an opportunity to develop an innovative business model for silage suitable for small farmers. A key component was the development of a model for the local production and distribution of a 60 kg silage bale for around PKR 480 (approximately USD 4) as opposed to the normal 1,000 kg bale at PKR 7000 (approximately USD 60).

For the first time, silage would be available in the right sized units, at the right price and with the right distribution model. The series of innovations – each introduced through different interventions – are described below.

First innovation: launch local silage entrepreneurs to demonstrate viability

MDF partnered with a handful of small local service providers who were willing to invest in the equipment (baler and wrapper) and marketing needed to make small silage bales locally available. The outreach of each service provider was small – hundreds of farmers at best – but it helped demonstrate the viability of the business model.

MDF launched these service providers first in Punjab province, then replicated the model in other provinces of Pakistan, making 12 entrepreneurs in total. This included female entrepreneurs, who were better placed to market the bales to female farmers. The feeding of animals and gathering fodder is generally considered a female task and purchasing silage could help reduce women's workloads. Pioneer, a seed company promoting maize varieties suitable for silage, acted as a technical partner, helping new silage makers ensure the quality of their product. MDF shared the cost of the silage equipment and marketing efforts with the new service providers. The collaboration with Pioneer was with a 'closed wallet'. They would benefit from increased seed sales.

Second innovation: get the equipment supplier and a bank involved to stimulate expansion

Having established the viability of the business model and the appetite of smallholders for silage, MDF wanted to take a step back.

MDF felt that with a proven business model in hand, they should not need to cost-share silage equipment. Instead banks should be interested in funding the next generation of silage entrepreneurs. This took shape in the form of a tripartite agreement between MDF, Bank Alfalah (a leading private bank in Pakistan) and Cattlekit (at the time the only small-bale silage machinery supplier in the country).

Under the agreement, Cattlekit agreed to collateralise loans for silage equipment, thereby reducing the bank's risk. This would result in a 3 per cent discount on loans to new silage entrepreneurs. MDF supported Cattlekit's initiative by sharing the cost of 'going rural'. MDF supported the establishment of two rural promotion centres for the servicing of, and providing information on, silage equipment. MDF also supported Cattlekit to go out, engage farmers, and promote their equipment.

Third innovation: rental services for more scale

Silage entrepreneurs started experimenting with the business model, expanding maize cultivation in order to sell more, developing subcontracting arrangements with maize farmers to secure even more scale, and also renting out their equipment to increase the utilisation rate of the machinery.

Seeing the increase in machinery utilisation and knowing that rental services in the past had been important for popularizing the use of tractors, MDF took the initiative to partner with Cattlekit to get it interested in the rental business. With MDF support, two sets of machinery were made available for rental services – another small pilot to demonstrate viability and whet appetites.

The advantage of demonstrating the rental model through a machinery supplier is that more farmers get access to the machinery and once successful, they know the business and are well placed to increase the number of machinery available.

Towards 100,000 beneficiaries

Farmers reacted positively to the increase in silage availability in the market. All MDF-supported silage entrepreneurs sold out in the first season, which made them plan and increase the production of silage bales for the subsequent seasons.

More than the expected number of farmers wanted to buy silage all year round and not just in the fodderless seasons as they saw instant increase in milk productivity of their livestock and could observe the improvement in their livestock's health and weight (a sign of the amount of distress animals were facing).

In the two years after work commenced in 2015, MDF's silage interventions contributed to 1.2 million bales of silage being produced and sold, benefitting 40,000 small farmers. In response milk yields increased by four litres per animal day. Most farmers sell this milk, while some use it for household consumption. On average, this results in an increase in income of PKR 12,000 (approximately USD 96) per household per month.

Loan applications were slow to take off. Farmers struggled with lengthy application procedures. Also, from a religious point of view the paying interest was frowned upon. Nevertheless, MDF and other banks see the strategic importance of loan products for investments in agricultural intensification. The National Bank of Pakistan has launched a similar product and the state bank of Pakistan expressed its support for the initiative. Cattlekit's rental business started recently and others have also moved into this market. Overall, with many investments in silage still in their early stages, growth in the silage market is expected to continue to be strong and reach close to 100,000 farmers in the years to come.

To operate the silage machinery each entrepreneur requires a minimum of three full-time workers. More seasonal work is also required for cultivating maize for silage. An estimated 300 full-time jobs have been created so far. Also, before silage bales most women had to go to the fields, chop fodder and then carry it to their households for feeding livestock. Now all they have to do is open the silage bale and feed it to their animals. This has decreased their workloads by 14 hours per week.

Beyond the changes at farm level, the strong market reaction to silage also made larger agribusiness, that were hitherto not interested in smallholders, recognise them as potential clients. As a result, one

investment and one entrepreneur at a time, a market system around small bale silage for smallholder farmers is forming.

A growth market

MDF's work with 12 silage entrepreneurs resulted in more than 100 other small bale silage entrepreneurs crowding into the market and starting operations. This was helped along by the fact that MDF had a market champion in the form of the Pioneer seed company, which has been raising awareness of silage and the small bale model on a large scale.

With an increasing number of entrepreneurs, the demand for small bale manufacturing machines has also increased. Six new silage machine suppliers have entered the market: four local manufacturers, and two importers of foreign equipment. Four businesses exclusively focused on machine rental have also entered the silage rental market started since MDF started work with Cattlekit.

Maxim Seeds, a leading seed company in Pakistan, has started selling small bales of nutritious alfalfa hay to small farmers. Farm Dynamics Pakistan, a seed importing and distributing company, has commenced distributing seeds for drought-resistant Rhodes grass and ryegrass in small packs. Fauji Foods, a dairy processor, is setting up input shops close to its milk collection centres targeting small farmers. Silage will be sold in those shops. ICI, another big agro-inputs company, is planning to enter the small bale silage business.

The government trialled the distribution of 500,000 small bales of silage in collaboration with Engro, a leading dairy processor.

MDF is working to drive systemic change, with the objective to reach more than one million smallholder livestock farmers to reach a critical mass. It is currently working on a mass awareness campaign to explain the benefits of silage for farmers, as well as the feasibility of the silage business model.

MDF: the bigger picture

The work described in this case study represents just one intervention area in the wide portfolio of the MDF programme that started in 2011 and still continues.

MDF (Phase 1) was a multi-country programme working in Fiji, Timor-Leste, Pakistan, Papua New Guinea and Sri Lanka. It ran from 2011 to 2017 and was implemented by Cardno Emerging Markets with a budget of AUD 48 million (approximately USD 35 million at 2018 rates), working in

At the end of Phase 1 MDF had an active investment portfolio of 149 partnerships, leveraging USD 9.7 million in private sector investments, expected to benefit 225,000 poor people, and generating additional income in the order of USD 120 million.

MDF Phase 2 runs until 2022 and is implemented by Palladium and Swisscontact with a budget of AUD 80 million (approx. USD 58 million at 2018 rates).

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Case 6: M4C, Bangladesh
Integrating extremely poor and isolated island maize farmers

Demonstrating the potential for systemic change in the chars

Making Markets Work for the Jamuna, Padma and Teesta Chars (M4C) is a programme in Bangladesh funded by the Swiss Agency for Development and Co-operation (SDC) and implemented by Swisscontact and Rural Development Academy, Bogra, under the aegis of the Ministry of Local Government, Rural Development and Cooperatives, Government of Bangladesh. M4C is a Katalyst offshoot and works specifically to reduce poverty and vulnerability of char households in northern Bangladesh, who are among the poorest in the country.

Chars in Bangladesh are shifting riverine islands that are formed from river sand and silt deposition and then destroyed and washed away by floods and erosion. They have an average lifespan of 20 to 30 years. Thus, families who live in these chars are not only extremely vulnerable to floods and other natural calamities but are also dispersed when their land erodes and need to relocate to other chars or the mainland.

While other programmes provided services directly to poor char households, which raises questions about sustainability, M4C's mandate was to demonstrate that a systemic approach could also be effective in these extreme circumstances. Thus, M4C uses the Making Markets Work for the Poor (M4P) approach to help increase incomes and reduce vulnerability of these extremely poor households.

This case looks at M4C's work to push development of the maize sector and create income generation and employment opportunities for poor char households.

How to integrate the chars into market systems for access to services and markets

Bangladesh saw impressive growth rates over the last two decades and a drop in poverty, which led to it recently becoming a middle-income country, but pockets of extreme poverty still exist, concentrated in isolated, geographically vulnerable areas like chars, hoars (wetlands) and the Chittagong hill tracts. In its seventh five-year plan, the government of Bangladesh has prioritised the eradication of poverty in such locations.

Approximately half a million households (around 2.5 million people) are living in the chars, spread across ten districts, each earning less that USD 1.25 per capita per day. They face geographic isolation, lack of access to basic public and economic services, and are exposed to natural disasters such as floods. Char dwellers are forced to move homes five times or more during their lifetimes.

However, the chars also present economic potential: they are fertile and offer space. Livestock rearing offers potential due to the comparative advantage of having land available for grazing and the isolation from sources of disease. And there is potential for agriculture due to the alluvial nature of the soils, which makes them very suitable for certain crops. A diversified range of crops such as rice, maize, groundnut, onion, pumpkin, mustard, chilli and fodder for livestock can be cultivated successfully on the chars.

One of the crops M4C focused on was maize. Strong demand and the suitability of the soil meant there was potential to expand commercial maize cultivation. Research revealed that half the land suitable for maize cultivation was not properly utilised.

Most maize farmers in the chars have limited knowledge of cultivation techniques, the right choice of inputs, post-harvest handling etc. Isolated from other sources of information, they depend on what the neighbours think or the opinions of seed and fertiliser retailers on the mainland. However, the retailers are often not very knowledgeable themselves and do not always sell the best quality products.

Char farmers typically have low yields of lower quality maize that fetch low prices. Furthermore, they can either sell their produce to a very small number of traders who would take the maize to mainland or take it themselves, in which case they would incur high transport costs. Also, they are often also not on traders' radars as a potential sourcing location.

Due to the distance to the mainland and perceived low purchasing power, input companies do not consider char farmers as attractive customers so do not invest in developing this market segment. A lack of competition and the absence of any regulatory oversight encourages low quality products to enter the chars.

Financial service providers hardly cater to the chars because of high transaction costs and the perception that char households are high-risk clients. Moreover, most of the char households cannot use land ownership documents as collateral because the chars are erosion-prone and are often not covered by latest land surveys. The limited presence of financial institutions coupled with their inability to offer any collateral compels char households to depend on informal sources of credit with very high interest rates.

Business cases to build bridges to the mainland

M4C set to work to understand the dynamics of the chars: who would have an interest in better connecting the chars to services and markets? A market system comprises a constellation of private and public players – from the seed retailer and extension worker in the village up to government departments, feed mills and banks – who all have the potential to influence livelihoods in the chars.

Analysing the market system, M4C identified that, since there was demand for maize and profits could be made from trading maize and selling the required inputs (seeds, fertilisers, pesticides), retailers and traders might be most willing to invest in maize cultivation in chars if there was a business case. Unlike more conventional development programmes, which tended to assume that poor char households were outside the system and hence had to be given aid directly, M4C set out to partner with system players to bring char farmers further into the system.

First innovation: getting input companies invested

M4C partnered with four agro input companies (Auto Crop Care Limited, Petrochem Bangladesh Limited, ACI Limited and NAAFCO/SEMCO Limited), all of which were already doing business on the mainland, to adopt business strategies for the distribution and promotion of agro inputs and information for the chars.

M4C partnered with these companies to reduce their risk of venturing into this new market and to show them that providing char producers with the correct inputs and information could help them extend their market and increase their business.

M4C helped them find retailers who could serve char farmers (both on the mainland and in the chars) and train them on the use of quality seeds, fertilisers, pesticides and micronutrients. M4C also helped these companies train their own staff on maize cultivation in the chars so they were able to serve char clientele. They also helped the companies organise farmer field days and meetings to demonstrate how using quality inputs can help farmers improve their yields.

Second innovation: getting traders to set up sourcing arrangements

Early on, in 2012-13, M4C partnered with 11 traders to have them source maize from the chars. Gradually, M4C introduced a system whereby the traders could expand their business by contracting char farmers to produce maize for them. This model grew to encompass 154 traders who provided char farmers with inputs on credit, combined with basic knowhow of how to grow maize and in return buy their harvest. It was an efficient way for traders to purchase in bulk.

M4C then worked to expand this sourcing system further to include 409 traders by 2017, who could supply directly to feed mills. This directly connected the previously disconnected char farmers to the main source of demand for maize in Bangladesh.

Third innovation: investments in post-harvest handling

Also, early on in 2012-13, M4C partnered with four interested entrepreneurs to become shelling service providers in chars. Shelling is the process of separating maize kernels from its shell. At the time, most farmers were using their bare hands to shell maize, which was time intensive and resulted in a lot of waste.

Improved shelling services could help farmers improve the quality of their produce and save time. M4C partnered with these four entrepreneurs help them invest in good quality machines and market their service. Later, M4C partnered with Sarkar Engineering Workshop to make the equipment more broadly available in the chars.

Finally, M4C partnered with tarpaulin and poly bag sellers to promote low-cost drying materials in the chars. Before this intervention, char farmers would dry maize on the ground or on rooftops, which meant the crop lost its quality and colour due to too much dust and moisture. Proper drying helps them to get a better price by improving the quality of the maize.

Nearly 50,000 beneficiaries

Input companies witnessed a strong sales increase as a result of targeting the chars. Before partnering with M4C, only three or four retailers would target the chars. After the intervention with M4C, this has increased to 10 or 11. According to M4C's impact assessment, Auto Crop Care Limited increased its sale of maize seeds from 29 metric tonnes to 68 metric tonnes within one year, increasing sales revenue by BDT 150 million (approximately USD 1.7 million at 2018 rates).

Shelling service providers realised a healthy profit of on average BDT 38,250 (approximately USD 395 at 2018 rates) per year. The number of shelling service providers increased to 137 by 2017, covering five out of ten char districts. They helped increase household income by BDT 1,324 per year (approximately 15.9 USD at 2018 rates).

For drying material sellers, the average profit increased by 83 per cent in one year from BDT 336,050 to BDT 614,200 (from USD 3,474 to USD 6,350 at 2018 rates), with the customer base increasing from 448 households in 2015 to 678 in 2016. According to M4C's monitoring data, using drying material helped increased household income by BDT 2,107 per year (approximately 25.3 USD at 2018 rates).

For traders, the average profit increased by 25 per cent in a year from BDT 119,880 to BDT 159,840 (from USD 1240 to USD 1,652 at 2018 rates), with their individual customer base increasing from 410 in 2015 to 525 in 2016. In 2016-17, each trader procured an average of 172,800 kg of maize.

As a result of all these interventions, 47,026 maize farming households benefitted from M4C's work in Phase 1. The average income of individual benefitted households increased by BDT 19,380 per year (approximately USD 230 at 2018 rates). In total M4C spent approximately BDT 18.4 million (USD 0.21 million at 2018 rates) on all maize interventions.

In total, M4C benefited 103,700 farming households in the chars as a result of all its work in Phase 1.

Significant expansion of services and crowding

As a result of these interventions involving many more players, M4C created a more functional maize market system, whose functions were able to reach the chars. While previously the different players (input companies and char farmers, traders and feed mills) had little or no interaction with each other, now there are stronger relations between them. As a result, poor char maize farmers have access to quality inputs, information, post-harvest services and market linkage, which together enable them to grow maize as a high-yielding cash crop.

M4C's work in boosting maize cultivation in chars has resulted in the market becoming dynamic and new market players have emerged to cater to the needs of char farmers.

More sales officers, distributors and retailers of different agro input companies now target char farmers. Service providers from M4C partner companies are in high demand because of their knowledge. This knowledge spreads to other companies. Companies now also allow their distributors to sell products on credit to char farmers (90 days limit), something they wouldn't have dared do before. This shows that they have come to regard char farmers as reliable clients.

Shelling machine manufacturers visit M4C partners to understand their business. Engineering workshops near and inside the chars are now assembling shelling machines due to increasing demand for shelling services. More than 100 shelling service providers have crowded into the market without any direct facilitation from M4C.

On average, three to four stores have started selling drying materials for post-harvest processing in every relevant large market in the chars, seeing the success of M4C supported drying material sellers. So far, nearly 50 drying material sellers have joined the market.

The number of traders sourcing maize from the chars has also increased. Before M4C's intervention there were very few small traders buying from chars. By 2018 there were 50 to 60 seasonal traders visiting every char village. While previously most of the farmers used to bring their maize to mainland markets, by 2018 80 per cent was bought by traders directly. Mid-sized traders buy 1,200 to 1,400 metric tonnes of maize per season to sell directly to agents of feed mills (CP, Nourish Feed, etc.).

Overall, given the boost in maize cultivation in the chars, micro finance institutes have started extending different facilities such as seasonal loans. M4C supported three micro finance institutes National Development Programme, BRAC and SKS to offer such loans. In 2016, Grameen Bank started offering a similar seasonal package on its own and in the 2017-2018 season provided 1,600 char farmers with seasonal loans of a total of BDT 50 million (USD 0.56 million at 2018 rates).

M4C: the bigger picture

The work described in this case study represents just one intervention area in the wide portfolio of the M4C programme that started in 2012 and still continues.

In Phase 1, from 2012 to 2016, M4C had a budget of CHF 8.2 million (approximately USD 8.13 million at 2018 rates). It focused on agricultural sectors such as maize, chilli, jute, onion, groundnut, mustard, rice and non-agricultural sectors such as handicrafts, transportation and financial services. M4C facilitated partnerships with a broad range of public agencies (research, extension), private companies (agro-input, agro-processing) and local service providers (retailers, traders, etc.) to promote and provide inputs and services, strengthen supply chains, as well as test new business models to bring about pro-poor changes in the market systems.

In Phase 2, from 2017 to 2020, M4C has a budget of CHF 3 million (approximately USD 2.83 million at 2018 rates). It has shifted from a sector-centric implementation model to a broader services-centric implementation model. It currently focuses on three major intervention areas: input supply and production services, output market and post-harvest/processing services, and financial services – all targeting both crops and livestock farming households.

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Case 7: ECF, Vanuatu
Supporting smallholder farmers in thin Pacific markets

Pioneering private sector engagement in the Pacific

The Enterprise Challenge Fund (ECF) was the first development programme funded by the Australian Government that worked directly with the private sector and also the first programme of its kind working in the Pacific.

ECF offered private companies matching grants to support innovative solutions that addressed market failures and led to sustainable, pro-poor economic growth. Firms were required to prove their commitment by investing their capital on a 1:1 ratio or more. These rounds were held in eight countries: Cambodia, East Timor, Fiji, Laos, Papua New Guinea, Philippines, Solomon Islands and Vanuatu.

How to help smallholder farmers grow cattle for export

Vanuatu is a Y-shaped archipelago of around 82 small islands of which just 14 have a surface of more than 100 square kilometres. It is located between Fiji and Papua New Guinea in the Pacific Ocean. The population of the country was approximately 230,000 in 2009. The Pacific presents many unique development challenges: geographic isolation, high production costs (lack of economics of scale, dependence on imports), a lack of specialised services (market too small) and a small local

entrepreneurial base mostly constituted of non-natives, as local community structures, while not necessarily prohibiting entrepreneurship, didn't really foster it either. On top of this, real growth potential only lay in exports as domestic markets were so small.

One successful industry in Vanuatu was beef production. In 2009, beef production in Vanuatu was characterised by a small number of large estates at one end of the spectrum and a large number of smallholder farmers at the other. According to the 2002 census, there were approximately 3,000 smallholder farmers with fewer than 100 cattle. But this number was estimated to be significantly higher in reality as around half of all rural households were estimated to own cattle. The cattle population also grew from around 130,000 to 170,000 between 2000 and 2010.

The beef industry in Vanuatu had a competitive advantage as disease did not have a significant impact on animal health. Also, the genetic base of cattle breed was relatively good and carcass weights could be increased by improving pasture management.

Beef production was the third most important export after coconut and kava. All cattle for the formal market were slaughtered through two modern abattoirs in Port Vila and Santo (Santo Meat Packers), which were certified to export to New Zealand, Australia, Japan, and other Pacific island countries. Their main business was to purchase cattle and process this into beef products to sell. However, only a few per cent of cattle at the two abattoirs was supplied directly from the smallholder sector due to their suboptimal weight and quality.

Transportation of cattle is a major issue in Vanuatu for small holder farmers as trucking animals from farm to market was expensive, especially from remote areas where there were no roads and the only alternative was to transport by sea. Most of the cattle bought by Santo Meat Packers was produced on Espiritu Santo, the main northern island.

Average carcass weight of smallholding cattle had also declined from 220kg to 200kg. One reason for this was that smallholder farmers had limited access to finance to invest in pastures, cattle feed and better breeding bulls. Pastures periodically need to be renovated by fertilising, growing quality varieties of grass and legume, and weeding. Investment in supplementary feed such as forage or silage can also increase animal weight significantly.

Finally, another major constraint was access to water. Cattle grow when feed is lush thanks to good rains, but growth is restrained during periods of low rainfall and drought.

The lead firm provides all

Sarami Plantation was a private company that had been breeding cattle on the island of Espiritu Santo in Vanuatu for more than 30 years. Sarami applied for a matching grant from ECF to introduce a new model that would see them work with smallholder cattle farmers to boost beef production in Vanuatu and at the same time increase smallholders' incomes through purchasing cattle from them at higher than average prices.

In the Pacific context, with thin, small markets, value chains tend to be short and access to specialised services nearly absent. As a result, lead firms need to perform many functions and master many skills. Sarami was just such a lead firm. They proposed a symbiotic business model that would create functional specialisation between themselves and smallholders, building on each party's strengths. Smallholders would focus on breeding young animals; Sarami would buy them before feed and water

stress affected the quality of the meat, then fatten them up under more controlled conditions. In 2009, ECF approved a grant of AUD 1.38 million (approximately USD 1 million at 2018 rates) to Sarami to fund 30 per cent of the project.

There are a number of innovative steps packed into this ostensibly simple business model.

First innovation: providing a fresh bull

Sarami would provide smallholder farmer groups with a free commercial bull once they had agreed to sell 40 cattle to them. Using a better bull to breed would improve cattle genetics, resulting in a more robust herd.

Second innovation: buying and transporting young animals

Sarami would buy young animals once they were weaned to ensure they would not suffer stress due to a lack of fodder, water or disease (all of which toughen the meet, reducing quality). Shorter weaning periods would mean that smallholders would be able to change the structure of their herd, allowing for more productive cows. Sarami would provide appropriate transport, saving farmers money while ensuring that animals were unharmed in the process (which again reduces quality).

Third innovation: investments in yards and pastures

Constructing yards suitable for cattle unfamiliar with yards would allow Sarami to keep cattle under optimal conditions and save the animals from stress. In a similar vein, Sarami would invest in improving pastures, planting improved varieties of grass and legume. Improved pastures would help to increase stocking rates, from two cattle units/hectare (ha) to four cattle units/ha.

Fourth innovation: making silage as a buffer crop

Finally, Sarami would start producing silage from a forage sorghum crop, which would be treated with an enzyme to improve silage fermentation quality. This will allow the project to provide secondary cattle feed, both for regular use and to mitigate risks from drought and poor pasture growth. This buffer could also be used by smallholders if need be.

Smallholders earn hundreds of dollars extra per year

Sarami was able to negotiate a premium price with Santo Meat Packer for the better-quality cattle delivered.

By 2012, three years into the project, Sarami had purchased over 2,000 cattle from more than 240 smallholders. These cattle were purchased at a total cost of AUD 0.61 million (approximately USD 0.43 million at 2018 rates) from 21 locations across Santo Espiritu at an average price of AUD 305 (approximately USD 215 at 2018 rates) per head, which was considerably more than prices offered by other buyers. Sarami would buy young cattle weighing up to 300kg and feed finish them up to 500kg, which would fetch them the highest premium from Santo Meat Packers. The total sales value of cattle sold to Santo Meat Packers was approximately AUD 1.1 million (approximately USD 0.78 million at 2018 rates).

Sarami established itself as a significant and preferred buyer of younger cattle. Smallholder farmers benefitted by restructuring their cattle herds to sell younger steer (neutered male animals) and heifers

(female animals that had never had a calf) to Sarami, which allowed them to increase the cow per centage of the herd up to 70 per cent and, related to this, improve weaning rates to 60 per cent.

Smallholders with an average of six cattle produced on average two more animals per year and increased their annual income by AUD 574 (approximately USD 405 at 2018 rates). Smallholders with an average of 24 cattle produced on average five more animals per year and increased their annual income by AUD 745 (approximately USD 525 at 2018 rates). Smallholders with an average of 60 cattle produced on average 11 more animals per year and increased their annual income by AUD 1,510 (approximately USD 1064 at 2018 rates).

The new business model changes the market – even beyond Vanuatu

As a result of this intervention a new business model was established whereby a big cattle breeder connected with smallholder farmers to buy their cattle at a younger age so that they could finish them to grow into better quality animals to sell to abattoirs.

Smallholder farmers benefitted through better genetic stock (the bull), the ability to produce more animals (due to the change in herd composition) and more revenue per animal (lower costs, better price). On top of this, they valued the relationship with Sarami and technical, management and commercial advice provided, since this information came from an established buyer.

ECF research in 2012 found that a few larger cattle holders were setting aside funds from cattle sales to reinvest in farm infrastructure to replicate the Sarami model. Even smallholder farmers showed signs of investing in improving their cattle production, particularly by improving fencing and water facilities. Some smallholder farmers with more than 20 cattle had also begun to invest in improved pasture using better quality grass.

Another big success of the Sarami project was that in 2011, the sale of 400 heifers from Sarami was negotiated with the government of Solomon Islands. These heifers were the genetically improved variety introduced through the Sarami project and were required by the Solomon Islands to improve their breed quality. They were sold at 360kg at a price equivalent to the sales value of heifers to Santo Meat Packers at around 500kg, which essentially meant Sarami benefitted from selling the animals without having to grow them for a further year.

This delivery was so successful that in late 2012 the Solomon Islands' government started negotiating with Sarami for delivery of a further 400 heifers and 20 commercial European bulls. The cattle population of Solomon Islands was estimated at 14,500 in 2010. The 800 heifers delivered through Sarami resulted in a herd expansion of 5.5 per cent.

The Sarami project was successful in demonstrating how an innovative model could benefit the local beef industry and contribute to economic activity. Lessons from Sarami have been shared and even possible interventions suggested in Fiji and Papua New Guinea. Two workshops were held in Fiji in conjunction with the newly formed private sector Fiji Crop and Livestock Council. These were well attended by a cross-section of private sector, donor and government parties. In 2013 Sarami also agreed to facilitate a visit to Santo Meat operations by Fijian Department of Agriculture officials, which may have lessons for upgrading the dairy industry in Fiji.

ECF: the bigger picture

The work described in this case study represents just one investment in the wide portfolio of the ECF programme that from 2007 to 2013 and was managed by Coffey International Development. ECF was a challenge fund selecting innovative projects that compete for donor funding against pre-established criteria.

A distinguishing feature of a challenge fund over other development programmes is its light-touch management structure, with often virtually no in-country 'boots on the ground' and very limited backstopping of partners. The fund manager is usually involved in advising bidders and assessment panels, guiding companies during implementation and monitoring progress without managing the interventions themselves. This means that for challenge funds to be effective, they are more dependent than other programmes on strong partners who have already identified new business models to invest in, are able to articulate and underpin this in a proposal, and can implement and troubleshoot the proposal without much assistance.

Interest for the grants was very high, with more than 1,200 companies registering and 532 submitting concept notes. These businesses had to demonstrate that the funds they applied for were crucial to the project being implemented and that they would satisfy the assessment criteria in three key areas: commercial sustainability, benefits to disadvantaged communities, and likelihood of broader impacts in the wider market and economic development. The grant decisions were made by experienced, independent assessment panels with no government input, and grant drawdowns were administered by the managing contractor, Coffey International Development.

The assessment panels approved 24 projects, of which 21 ended up being completed. Private sector companies used the ECF funds to build infrastructure, develop skills and develop more products with and for poor and rural communities. In total ECF awarded around AUD 11 million (approximately USD 7.76 million at 2018 rates) in grants to these 21 projects.

These projects increased the incomes of 78,154 people (39,196 men and 38,958 women) by an estimated AUD 8 million (approximately USD 5.76 million at 2018 rates) over the three-year monitoring period. The total ECF budget was AUD 17.23 (approximately USD 12.5 million at 2018 rates). ECF estimated that if projects continued to yield, by 2015 the whole public investment in ECF would be earned back in the form of additional income for the poor.

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Case 8: FSD-Z, Zambia

Where no bank ventures: expanding financial services in rural areas

Pioneering MSD to extend financial inclusion

Financial Sector Deepening Zambia (FSDZ) is a non-profit company working with financial service providers, policy makers and civil society to expand the country's financial sector to include the poor.

FSDZ works in nine financial market segments including small-to-medium enterprises, digital finance, savings groups, rural and agricultural finance, policy action, women and finance, insurance, knowledge management and financial education. Overall, as a result of FSDZ's work in these sectors, 1,239,539 low-income Zambians benefitted from an increase in income opportunities and/or a reduction in vulnerability.

This case study looks at FSDZ's work to create sustainable financial services for the rural population by making savings groups market-driven instead of being reliant on donor funding, as traditionally was the case.

Creating stable financial institutions for the poor without formal partners

FSDZ's market research showed that while the Zambian economy had grown significantly over the last decade, poverty continued to be a challenge. With a high dependence on the copper industry for exports, government policies had focused on the empowerment of urban or semi-urban workers. The

rural population, 60 per cent of the total, did not receive as much attention and did not benefit from the economic upturn.

FSDZ's research demonstrated that poverty in Zambia remained widespread and severe with 55 per cent of the population living below the national poverty line. Of the rural population of 10 million as much as 80 per cent was living below the poverty line (FinScope 2016).

While financial inclusion had significantly increased between 2009 and 2015, from 37.3 per cent to 59.3 per cent, it remained a barrier to economic development. The key challenge was that providing formal financial services to people, especially in rural areas and those with a limited budget, remained costly. The penetration of financial services was relatively higher in urban areas, where 70.3 per cent of the population were reached, whereas in rural areas this was only 50 per cent. Access to suitable and affordable financial products and services was very limited. The rural economy largely continued to be dependent on informal financial services and cash transactions.

Better access to both formal and informal financial products and services would allow individuals and enterprises to make plans, to invest and to manage risks, which would generate growth and employment.

Poor households prefer small transactions and have limited investment opportunities, so they generate less revenue for financial service providers. This means that banks and micro-finance institutions lack the incentive to invest in a rural presence and do not have the know-how or the right products to operate in these markets. Processing rural loans from their urban base drives up costs further, making such loans unaffordable for the rural poor.

Procedures were also a problem. Typically, banks assess the risk of default of loans against a borrower's credit and transaction history. With such a high per centage of unbanked people, it is unlikely that many would qualify for a loan. Moreover, the process of verification and paperwork takes time and is often quite rigid.

There was a self-fulfilling prophecy at work: because costs, structures and procedures are ill-suited for poor rural customers, they remain relatively unattractive, so banks do not interact much with them, so there are no opportunities or incentives to learn and develop better-suited products and services.

On the client side, many poor households do not understand the importance of financial planning and developing a credit history. Also, they lack confidence to go to banks and micro-finance institutions. There is a tendency to rely on informal financial services. These can be either indigenous providers or those facilitated through development initiatives.

Indigenous providers have no formal training and offer basic credit services using their own capital, charging high interest rates. Community-based providers such as savings groups are limited in number because the poor lack the capacity and financial literacy and capacity to run such groups. They are dependent on technical and financial assistance through different aid programmes.

FSDZ estimated that informal financial services offered a clearer pathway to financial inclusion at scale than formal services. The gap between providers and customers was, for the time being at least, too big. Informal financial services were more popular because of geographic proximity, low transaction costs, and the flexibility and speed with which services could be provided. The challenge was to increase the scale, quality and efficiency of such services.

FSDZ designed interventions to increase financial inclusion through different informal routes such as savings groups (time-bound savings/credit/risk management groups), Chilimbas (rotating savings associations) and Kalobas (money lenders).

This case discusses FSDZ's work with savings groups.

A fee-based mechanism for expanding financial services to replace aid

Following the huge success of savings groups in east Africa, several international aid agencies (including the Bill and Melinda Gates Foundation, Care International and World Vision) supported the establishment of saving groups in Zambia. FSDZ estimated that despite this, there was still an unmet demand of two million people hoping to join a savings group. How to reach them?

Savings groups are community-based, typically comprising 15-to-30 self-selected individuals who meet regularly to save and eventually borrow money if they need to. These groups depend on 'commitment savings', whereby members support each other in achieving their financial goals through the habit of saving regularly, often weekly.

The saving amount is based on each member's ability. Groups then pool the savings to make loans on which they charge a relatively high service fee or interest rate, which in turn increases the loan fund. Research shows that borrowing members from savings groups typically pay back loans easily (the 2010 FinScope study showed a default rate of only one per cent for community-based borrowers).

In 2014, FSDZ started partnering with local NGOs to help them scale up their operations to set up new savings groups. FSDZ supported two common models of savings groups.

Through the first model, Village Savings and Lending Associations, FSDZ supported partner NGOs to go out to villages and form new savings groups. These groups would comprise the poor in the target communities and would provide micro-finance services (micro-savings, micro-credit, micro-insurance, etc.) to their members. These associations are self-managed and receive no external capital but are reliant on NGOs for their set-up.

In the second model, Savings and Internal Lending Communities, FSDZ supported partner NGOs to set up savings groups through private savings providers (PSPs). The NGOs select active community members to become PSPs and train them to set up and help run saving groups, providing them with a monthly stipend for a year for their services. The communities would meet regularly to save small sums of money, which is lent to group members for repayment with interest. After a pre-agreed period (usually 6-12 months), the savings, plus interest from internal loans, are shared among the group members.

While these savings groups proved very effective in expanding financial inclusion to the poorest in rural communities, FSDZ recognised that their expansion was completely reliant on FSDZ and NGO support and hence not self-sufficient. There was a need to find a market-led, sustainable solution for the formation and running of these groups.

Innovation: groups of master trainers teach community-based trainers

To try out a more sustainable solution, in 2016 FSDZ designed a new market-led pilot intervention that built on the two models described above but would be independent of any future stipends. The pilot entailed training high-quality individuals who could set up and supervise savings groups. The idea was that these trainers would become private, rural-based financial experts who would charge a fee for their

services to saving groups thus making them no longer reliant on external support. They would have a business incentive to launch more savings groups and provide them with good services in order to boost their own income.

FSDZ launched a pilot master trainers programme in the peri-urban areas around Lusaka to train and certify master trainers. FSDZ carefully selected the first batch of master trainers through a competitive process, based on experience, dedication and drive for the cause. They engaged experienced consultants to develop the training curriculum, perform the training and develop a constitution for saving group procedures. The future master trainers had to demonstrate their commitment by paying a fee to enrol in the course.

To qualify for the master trainer certificate, candidates had to form eight savings groups with an average of 20 members per group that they were to supervise closely. They were also responsible for selecting and training community-based trainers from the savings groups for a fee. After a year, these trainers could qualify for master trainer certification. FSDZ envisaged that through this programme it could generate a continuously growing pool of private master trainers who would help expand and support savings groups.

More than 100,000 beneficiaries and counting

By 2017, as the result of its initial support to NGOs to establish new savings groups, FSDZ had supported the establishment of 4,896 savings groups comprising 105,375 members (of which 80 per cent are women). FSDZ's impact assessment shows that these savings groups have proved to be an effective means for its members to cushion themselves in hard times.

Most of the savings groups' members are women who felt that being a part of a savings group increased their financial security and made them less dependent on their husbands for cash. For the first time these women had access to credit. Women's access to savings and loans led to an increase in their business income and ownership and in their influence over household and business decisions.

Savings groups led to a general increase in financial literacy. Given the rural disconnect from formal financial channels, most members previously had no exposure to financial services or an understanding of how they worked. FSDZ observed that informal finance was the first step towards formal financial inclusion. Some members from savings groups close to urban areas ended up opening bank accounts.

The master trainer programme finished its pilot phase in 2018 with 24 people trained, eight of whom received the master trainer certificate, having successfully formed eight savings groups and meeting the criteria for quality and productivity. The other trainers also received certificates of participation and remain committed to the formation of savings groups. These eight master trainers ended up training 18 community-based trainers who established their own savings groups.

In total, 135 savings groups were formed in the two pilot years with 2,854 members, 95 per cent of whom are women. FSDZ's monitoring information shows that 80 per cent of savings groups pay a fee to the master trainers. They receive an income of between ZMW 140 and ZMW 230 (USD 12 to USD 20 at 2018 rates) per month depending on the number of groups and their membership base.

An impact assessment by FSDZ in 2018 showed that the master trainers generated good financial performance in their groups. The net profit per group per year was ZMW 10,363 (USD 870 at 2018 rates), which is a decent return. Annualised savings per member were ZMW 3,595 (USD 300 at 2018

rates). Most members were able to buy what they were saving for (setting up businesses, buying poultry and chicken feed, or land for building their own houses, for example) by the end of the annual cycle.

A sustainable self-driven model for expansion

Savings groups have enabled their members to access financial services, reducing their vulnerability and increasing their income-generating opportunities. They also instil discipline in members to save money.

The master trainer programme has resulted in positive changes at both the market level and for the poor. The master trainers have been successful in charging fees to form savings groups and provide advice on how to run them. Most savings groups recognise the value of having a trainer and are willing to pay for their services. Master trainers identify and train community-based trainers to become future master trainers, thus creating a growing pool of service providers.

The master trainer programme was a pilot to demonstrate a market-led sustainable way to establish and maintain savings groups that expand financial inclusion. The high proportion of savings groups willing to pay for services and the high proportion of female participation are encouraging signs for the programme to extend to other parts of the country, especially in rural regions where people live closer to each other and are most vulnerable.

In 2018, SaveNet Zambia, a network that works with development agencies, private sector organisations, and government, recognised FSDZ's master trainer programme as a sustainable solution to create self-forming, self-sustained savings groups. It has since incorporated the curriculum from the master trainer programme and adopted the same model to certify master trainers. The master trainer programme is now planned to be rolled out to all provinces in Zambia by SaveNet.

FSD Zambia: the bigger picture

The work described in this case study represents just one intervention area in the wide portfolio of the FSD Zambia programme that started in 2012 and still continues.

FSDZ's first phase, which ran to 2018, was implemented with financial support from the United Kingdom's Department for International Development (DFID), Swedish International Development Cooperation Agency (SIDA) and the Rural Finance Expansion Programme with a total budget of USD 20 million. Due to the programme's success, it was extended into a second phase that will continue until 2021.

Using the MSD approach, FSDZ first conducts extensive research to understand how financial markets work and identify what holds the market back from addressing the needs of the poor. FSDZ then partners with key stakeholders in the financial sector to make financial markets work better and offer access for all Zambians to a wide range of sustainable and affordable financial services. The work is particularly targeted at rural families, women, youth and low-income people who are often overlooked and underserved by the market.

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Case 9: PSP4H, Kenya
Commercial healthcare networks for those who cannot pay

Pioneering MSD in healthcare services for the poor

The Private Sector Innovation Programme for Health (PSP4H) began as an action research project in December 2012, to explore markets in which poor people pay commercial healthcare services providers in Kenya.

Eventually PSP4H was applied to improve the private health market in Kenya, to offer poor people better value for money. This project was funded by the United Kingdom Department for International Development (DfID) and was the department's first dedicated Making Markets Work for the Poor (M4P) programme in the health sector.

Before this, Katalyst in Bangladesh had worked on private healthcare services for the poor and the Support to the National Malaria Programme in Nigeria had applied MSD to create a sustainable market for items such as mosquito nets.

PSP4H was implemented by Cardno Emerging Markets, from 2012 to 2017, with a budget of GBP 4.97 million (approximately USD 6.33 million at 2018 rates). The programme's objective was to understand how the low-cost private health care sector works in Kenya and to explore how a market systems approach could strengthen the sector and create large-scale, lasting benefits for the poor.

It applied the MSD approach by partnering with the private sector to pilot innovative approaches that targeted low income consumers, encouraging the private sector to invest its own money in the process. Lessons from PSP4H's work were intended to inform similar future programming to improve healthcare throughout East Africa and beyond.

This case focuses on PSP4H's approach to intervene at scale by engaging with existing health aggregations in Kenya.

How to improve low-cost healthcare services for the poor

PSP4H first worked to understand the context of the Kenyan health sector, how it served the Kenyan population and whom it reached, and how it could add value as an MSD programme. Its research revealed a grim picture: the number of poor Kenyans with inadequate access to health facilities is overwhelming.

Early research on big business in the private Kenyan health market suggested that outreach was limited to serving the top five per cent of the population: those who could afford health products and services. They weren't even interested in reaching the next 45 per cent of the population who could pay less, let alone the poorest bottom half of the population. The perception was that the poor could and would not pay for medical services.

Other parts of the healthcare system such as maternal health, HIV/AIDS, tuberculosis and family planning were crowded with multiple donors. Kenya had 273 donor-funded health programmes in early 2014. It was obvious that aiming for commercial sustainability would be difficult in such donor crowded areas as the presence of grant funding, subsidies, medical commodities, equipment and budgetary support tends to crowd out commercial investment.

However, there were significant under-served areas of potential interest to the private sector at the bottom of the health system, such as low-cost delivery models of effective drugs through pharmacies and reliable laboratory services. Lack of services in these areas lead to delayed diagnosis and treatment of diseases, further leading to avoidable mortality, drug wastage and high expenditure for government and individuals.

The private sector was already an important source of healthcare for many Kenyans, including the poor. According to the Kenya National Health Accounts (2012/13), the private sector share of Kenya's total healthcare expenditure was estimated to be at 40 per cent. PSP4H's research suggested poor consumers preferred private providers as they perceived the quality of health services to be better.

The Kenyan public health sector was plagued with inefficiencies and corruption. Although illegal, most doctors in public health centres were also practising privately in their own clinics. These doctors would focus mostly on their private practice, referring richer clients to their private clinics.

Customer service in the public health sector was of poor quality. People seeking public healthcare had to wait long hours just to receive a rushed five-minute consultation. Facilities were so bad that patients had to bring their own bed sheets if admitted.

The public health sector had its own supply chain for medicine (Kenya Medical Supplies Authority) which was mostly funded by donors. Despite this, the product shelves of public health centres were often empty with 'leakages' reported during transportation.

This explains why the working poor were willing to pay for specialised services. Moreover, they expressed their willingness to pay for more services from the private sector if they were affordable. Note how this contrasts with the perception of the big private sector players, which believed the working poor were unwilling and unable to pay for their services.

Beyond inaccessible top tier private healthcare services and failing public healthcare services, there were other factors impeding access to adequate healthcare. Even lower-end private services were concentrated in and around cities, making access for rural patients difficult. Saving for (future) diseases was seen as invoking bad luck and thus not widely practised. Women could not buy healthcare services as men controlled the household income and would not always understand women's needs. The situation was especially bad for Kenyan women in the highly conservative Muslim majority areas near the Somalian border.

Lack of financial resources is another barrier that greatly influences health-seeking behaviour. In their attempt to save money, the poor were at real risk of spending more on multiple visits not resulting in a cure. Depending on the illness, patients would first try self-medication, purchasing some form of treatment from a local drug shop, kiosk or pharmacy. If this did not cure their illness, the patient would consult an informal provider because they could not afford to pay a private health provider or pay the fee at a public facility.

Low quality and substandard medication from informal providers often resulted in illnesses getting worse. According to PSP4H's research, about 30 per cent of medicines supplied by the pharmacies and drug shops in Kenya are substandard and most are circulated among low-income communities. Drug stores would source medicines from wherever they could at a low price, even if they were smuggled into the country.

As their illness progresses, the patient enters the formal health sector. Depending on the illness and cost of treatment, they might bounce between public and private sectors before being successfully treated.

Only a few of the pharmacies, health shops and service providers catering to the poor population were qualified and had a government approved licence. Poor Kenyans purchased medicines from unlicensed shops or pharmacies, some of which were inappropriate or of poor quality, with little or no advice on dosage. Diagnostic laboratories were also part of the same system, in which raw materials came from unreliable sources, which resulted in undependable diagnoses. Laboratory tests use a number of consumables which determine the authenticity of a test, thus raw materials are vital in determining quality.

Healthcare networks providing collective services

Traditionally, donor programmes are based on lots of macro-analysis and insights from policymakers and governments that don't necessarily understand the market well enough and often also spend too much time on research, which delays the actual implementation of interventions.

In contrast, PSP4H chose to work with a quick intervention model based on direct market testing working with partners who were already engaged in the field. PSP4H also chose to work with a group of partners instead of working with individual enterprises to reach scale in interventions and impact more people.

First innovation: Pharmnet to promote pharmacies selling reliable drugs

As in many countries, pharmacies were the first point of call for medicines. However, consumers had little knowledge of gauging the quality of the drugs they were purchasing and many pharmacies were selling poor quality medicines.

To establish credibility and highlight licensed pharmacies, in 2014 PSP4H partnered with the Kenya Pharmaceutical Association, a professional association with 8,500 licensed members. Before PSP4H's intervention the Kenya Pharmaceutical Association was just a traditional association, providing its members with government licences to distribute drugs. Members' businesses were run individually and they could procure supplies from any vendor of their choice, which enabled some pharmacies to source sub-par drugs at low rates for higher profits.

To address this, PSP4H and the Kenya Pharmaceutical Association established Pharmnet, a business network of licensed reliable retail pharmacies. It was not mandatory for all pharmacies registered under the Kenya Pharmaceutical Association to become members of Pharmnet –pharmacies interested in joining had to pay a nominal fee of USD 50.

Pharmnet would start by managing a collective procurement mechanism for all member pharmacies from a reliable supplier, Nairobi Techpharm Limited. This would lower prices and reduce the risk of reputation damage due to poor quality drugs.

PSP4H also helped Pharmnet to organise training to increase the business acumen of members, covering topics such as inventory management and customer care, so that pharmacies could provide a better service. In the future, the Pharmnet membership fund could be used to cover such training.

Pharmnet members were already running their pharmacies, predominantly in the low-income neighbourhoods. Thus, the newly established Pharmnet network delivered medicines under a common brand, owned by the Kenya Pharmaceutical Association, with the promise of assured quality. Pharmacies in the network expected to increase their profits by serving more clients, attracted by product quality, and paying lower prices because of the lower costs of procuring in bulk.

Second innovation: Labnet to promote cost-effective, reliable diagnostics

In 2016, PSP4H used the same model to strengthen the business case for reliable diagnostic services by partnering with the Association of Kenyan Medical Laboratory Scientific Officers to establish Labnet. Again, association members could pay a USD 50 fee to become a member. This gave them access to a collective arrangement to procure in bulk from a reliable vendor, which would help them reduce costs.

Furthermore, PSP4H worked with the association to help them set up and manage the network and the brand, with marketing and relevant business skills training. As with Pharmnet, Labnet members were expected to see an increase in their customer base as people became aware of the quality of diagnostic services available at low prices.

Third innovation: Docnet to promote physicians adhering to good practices

After establishing a network of pharmacies and laboratories, PSP4H decided to consolidate other key players in the health services nexus. The programme partnered with the Kenya Medical Association to establish a network of consulting physicians called Docnet.

Like the previous interventions, qualified and licensed doctors could pay a membership fee to join. Again, the purpose of the network and branding model was to strengthen the business case for adopting proven products and methods to ensure quality of service.

Overall, PSP4H invested around GBP 300,000 (approximately USD 380,000 based at 2018 rates) in these three interventions.

Millions benefit from more reliable low-cost healthcare services

Since its establishment in 2014, 250 pharmacies have joined Pharmnet. According to independent research commissioned by PSP4H in 2016, 74 per cent of these pharmacies experienced an increase in monthly turnover, with an average increase of about 21 per cent. Some even saw sales double.

Research also showed that 76 per cent of the pharmacies experienced an increase of approximately 32 per cent in the number of people visiting the pharmacies who make no purchases but could become future clients. Overall, by 2016, Pharmnet had reached 3.2 million low income Kenyan consumers with quality assured medicines, 74 per cent of whom PSP4H categorised as poor.

Since its establishment in 2016, 90 laboratories have joined Labnet. These laboratories are spread across 24 Kenyan counties and could potentially be serving about one million patients per year according to programme estimates.

Docnet is also gaining traction and other donors have started to show interest in implementing a similar model for quality healthcare services dissemination.

A replicable and scalable model spreading to other east African countries

By working with existing health associations, PSP4H was able to create a quality health services distribution channel for the poor under the Pharmnet, Labnet and Docnet brands. Private health sector customers would be able to recognise the brands and know that they would receive reliable services. The health service providers under the brands were able to increase sales, save costs and also experienced an increase in their customer base.

PSP4H's initial research was validated, as the poor were happy to pay for quality health services. The network's branding gave people confidence in the health services being offered. The increased access to quality products and services resulted in an improvement in health at lower costs.

The positive experience with Pharmet made it easier for PSP4H to create other branded networks. Showing that the network model is both replicable and scalable, in less than a year, Labnet expanded into neighbouring Uganda.

The Ugandan laboratory network drew on the experiences of Labnet in Kenya and the Association of Kenyan Medical Laboratory Scientific Officers agreed to share the Labnet name and branding with its Ugandan counterpart with a goal of achieving a uniform East African identity for qualified labs. By 2017, there were already 48 laboratories under the Ugandan Labnet network with a potential of serving one million people per year.

Although still in its early stages, Docnet has already been picked up by the Swiss Agency for Development and Cooperation and a pilot, by the name of Caafinet is being replicated in Somalia. This doctor's network also consists of individual qualified medical doctors that are registered with the Somali

medical association and are working with the low-income community. In 2018, Caafinet had 59 doctors in its network. Just like the Docnet model, members pay a fee to join the network, making the model sustainable. This fee is used to cover various inventory and operational costs. The one-year pilot intervention is expected to have 100 doctors under the franchise and serve around 100,000 patients. SDC is already considering a full health project in Somalia.

PSP4H's work in the healthcare sector proves it is not always necessary to spend a lot of money to see positive impact or to reach scale. Market incentives are what lead to uptake and scale, whereas incentives created by external funding will be mostly unsustainable and only effective in the short term. PSP4H shows that understanding and leveraging existing networks, with aligned incentives, is an efficient way of creating wider impact.

PSP4H: the bigger picture

The work described in this case study represents one intervention area in the portfolio of the PSP4H programme that ran from 2012 to 2017. That programme was funded by the United Kingdom Department for International Development (DfID) and was the department's first dedicated Making Markets Work for the Poor (M4P) programme in the health sector.

Before this, Katalyst in Bangladesh had worked on private healthcare services for the poor and the Support to the National Malaria Programme in Nigeria had applied MSD to create a sustainable market for items such as mosquito nets.

PSP4H was implemented by Cardno Emerging Markets with a budget of GBP 4.97 million (approximately USD 6.33 million at 2018 rates). The programme's objective was to understand how the low-cost private health care sector works in Kenya and to explore how a market systems approach could strengthen the sector and create large-scale, lasting benefits for the poor.

It applied the MSD approach by partnering with the private sector to pilot innovative approaches that targeted low income consumers, encouraging the private sector to invest its own money in the process. Lessons from PSP4H's work were intended to inform similar future programming to improve healthcare throughout East Africa and beyond.

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Case 10: DEEPEN, Nigeria
Investing in low-cost private education in Lagos

Pioneering MSD for low-cost private schools

Developing Effective Private Education Nigeria (DEEPEN) was a five-year programme funded by the United Kingdom's Department for International Development (DfID). The programme sought to improve the quality of education in private schools, especially those serving children from low-income households.

DEEPEN's aim was to improve the learning outcomes of children going to low-cost private schools by facilitating:

- a more transparent, inclusive and favourable regulatory environment for private schools
- increased access to financial products and services for parents and schools
- access to good quality yet affordable school improvement services
- increased availability of media platforms to discuss education issues and provide information on good schooling practices

This case study focuses on DEEPEN's work to facilitate the growth of low-cost private schools by increasing their access to finance. They did this by convincing Accion, a micro-finance institute, to work in the sector.

Allowing low-cost private schools to be run like businesses

One of the greatest challenges facing Nigeria (and many other 'young' countries) is how to build up a high-quality educational system able to give future generations the knowledge, skills, civic education, and critical thinking required to help them progress in life and bring the country forward.

The Nigerian government always saw education as an important part of its mandate. Back in 1973, the government took a national pledge guaranteeing every child born after the civil war quality primary education. This was later extended to cover nine years of basic education.

Around this time, public schools were popular in Nigeria. Parents of school children came from different economic backgrounds and were happy with their children getting the same learning opportunities as everyone else. However, by the mid-1990s this situation had changed. The public system could no longer keep up with modern education standards and the increasing number of students. The main reason for this was that budgetary allocation to education had dwindled. Also, due to limited funds, teachers from public schools were not paid regularly so they started skipping classes altogether to focus on their personal businesses.

This is when private schools started to become more popular. Parents preferred private schools because of the quality of education. Class sizes were much smaller than in public schools so children got more attention from teachers.

The popularity of private education was particularly strong in Lagos, one of the fastest growing cities in the world. With the public education system not keeping up, Lagos saw a rapid expansion of low-cost private schools. These schools charge a fee of around 7,000 Naira per three-month term (approximately USD 20 at 2018 rates) but some, particularly those in the slum areas, charged as little as 3,000 Naira per term (approximately USD 8.25 at 2018 rates).

By 2017, 18,000 low-cost private schools were operating in Lagos, an approximate 50 per cent increase since 2011. According to programme estimates, as many as 1.4 million children in Lagos went to low-cost private schools, compared to 1.1 million going to public schools.

Most of these Lagos private schools were unregulated and offered varying standards of education and facilities. To get an official approval, schools had to meet the Lagos state criteria: a) the school had to own property from which it operated, b) the owner of the school had to be a trained educator, and c) the school building had to meet state standards.

However, most of these low-cost schools were run from rented spaces and school owners found the process of registration/approval too costly (around USD 2,000) and cumbersome. Low-cost school owners found it easier to join a private school association instead, paying membership fees of around USD 17 per month. The benefits included protection from government and the threat of school closure. While this meant that some private schools suffered from inadequate facilities and substandard teaching, parents still saw them as offering better services than public schools and were prepared to find the money to get their children in.

DEEPEN conducted a *Schools as a Sustainable Business* study in 2014, from which it concluded that, while private schools offered a potential solution for the growing problems of limited access to education in Lagos, they faced many financial hurdles. Lack of finance restricted schools from investing in facilities and quality improvements. DEEPEN's research suggested a substantial demand for credit of

nearly USD 2.5 billion for potential school improvements that was not being catered to by financial institutions.

Low-cost private schools, like most other informal businesses, would rarely produce proper income statements – they ran on their proprietors' gut feel for how the businesses were doing. The main expenditure for running these schools included paying for rent, teacher fees, textbooks and furniture, while the main source of revenue was fees. As these schools were community-based and most parents worked in informal sectors, school fees were often paid late or in instalments. Severe arrears could destabilise the sustainability of a school and deprive it of the means to invest in improving educational quality.

On the supply side, financial institutions did not have adequate information on the viability of delivering financial services to low-cost private schools. Banks and other financial institutions and micro-finance institutions are usually risk-averse due to difficulties connected with enforcement of debts, which may well lead them to overlook potential in hitherto untried markets, such as schools.

Also, existing products from the banks were unsuitable for low-cost private schools. School owners often did not have collateral or the capacity to pay back in monthly instalments due to fee payment fluctuations. Given the risk assessment of the banks, school owners were reluctant to access loans at high interest rates. Moreover, financial institutes were reluctant to enter into a situation where they might have to shut down an educational institute in case of a default.

Creating a dialogue to inform product development

Providing grants to upgrade schools might be successful in the short term and would enable schools to improve their business temporarily but this tactic would eventually lead to the same problem, namely that they would struggle to access the finance they needed to invest in their business. DEEPEN was the first to recognise that a more sustainable solution was required – and that could only come from a market-led approach.

In 2014, DEEPEN disseminated the findings of its *Schools as a Sustainable Business* study in a forum discussion involving school associations, donors and financial institutions to show them the market potential. DEEPEN also presented evidence to show that there was a correlation between student enrolment and the quality of education services. After the forum, Accion Microfinance Bank Limited reached out to DEEPEN to work together to increase access to finance for private schools.

First innovation: a short-term loan product designed for schools

In 2014, Accion did not have any specific loan products for private schools. DEEPEN connected Accion with private school associations from its study to help the parties understand each other. Accion then conducted its own needs assessment of private schools. Its findings corroborated DEEPEN's initial study and motivated the bank to tap into the market. Accion realised that conventional products were not suitable for private schools as the conditions required for attaining a loan were too strict and interest rates too high.

Accion successfully applied for funds from the Central Bank of Nigeria's Micro, Small and Medium Enterprise Development Fund, which enabled them to disburse single-digit interest loans to an initial

tranche of 120 schools. Accion then worked with DEEPEN to monitor, evaluate and assess the efficacy of microfinance for private schools.

Accion's first tailored loan product, My School Plus, was designed around the specific needs of low-fee schools. This was a short-term loan with a payment period of one year or less. The key characteristic was that the repayment schedule was linked to school terms instead of fixed monthly payments. This enabled schools to manage repayments in line with their cash inflows.

Additionally, Accion recognised that most low-cost schools could not afford to meet the requirement for government registration. So Accion provided loans directly to school entrepreneurs, enabling them to overcome the challenge that many schools did not have business bank accounts.

The other important feature of Accion's loan product was the low interest rate. Given the favourable nature of Accion's product, most school owners would request a big lump sum to build new classrooms, without thinking of how they would be able to guarantee repayments. So Accion guided schools to make informed choices. They were advised to go step by step – perhaps by building one classroom at a time or renovating a facility and then buying some more books. Accion guided school owners to spread out their expenditure with the growth of their business.

Second innovation: longer-term and more commercial loan products

After the success of the pilot, in 2015 Accion went on to develop two more financial products for school owners, who were asking for larger sums and longer payback periods.

The My School Extra and My SME Educational Loan products were initially available only to clients who had taken short-term loans. The second product offered a slightly higher yet still subsidised rate from the Central Bank of Nigeria, while the third was developed by Accion itself and was available at close to market interest rates, which were around 28 per cent. In the year after the pilot, Accion lent 428 additional loans (both short and long term) to new schools that were not included in the pilot.

Improvements for 1,400 schools benefiting up to 160,000 children

By 2018, Accion had been able to disperse 2,710 loans for private schools and other financial institutions had started to take an interest in doing something similar. By then, around 1,700 schools had benefitted, of which 1,400 had taken the short-term loan product and 300 had taken longer-term loans. Some had even taken multiple loans. Up to 160,000 children benefitted from the improvements funded through these loans (on average each school contains 115 children).

Schools have been happy with the payback schedules tailored to their needs. According to a survey conducted by DEEPEN, only four per cent of schools taking Accion loans had to raise their tuition fees to accommodate repayment. This shows that financing school growth through a loan is sustainable in the long run. Accion provided schools with a wide range of loan amounts from as little as 50,000 Naira (approximately USD 140 at 2018 rates) to as much as five million Naira (approximately USD 14,000 at 2018 rates), with repayment schedules from six to 18 months.

The most significant finding from Accion's private school loan intervention has been that 70 per cent of its clients were schools with students from low-income families. Schools have used funds for building renovations, constructing new rooms and toilets, and paying for furniture, teaching materials and staff salaries. The financial advice from Accion has also led to an improvement in business plans and cash

flow management by owners. Parents can see the transformation to schools brought about by their improved access to finance. With the quality of private schools improving, most children also get better learning opportunities.

Making the business case opened up the market

Financial institutions were unaware of the potential demand for their products in the private schools' market and had previously deemed it too risky. DEEPEN's assessment gave financial institutions the confidence to enter the market. For the first time, school owners – including those of low-cost schools – could access finance at favourable conditions. Using this finance, schools could grow both in terms of structure and quality, leading to increased revenues.

Accion claims that the risk profile for low-cost private schools has been lower than for its other portfolios. Accion did its due diligence before launching the pilot programme of 120 loans, but the number of loans dispersed in the next year and the increase in the type of loan products are all indications of a business model that is growing and maturing. Accion is planning to expand into the south-east and northern regions of Nigeria, where they will extend their school loan products as well.

Three financial institutions – Lotus Capital, AG Mortgage and Grooming Centre – have also entered the market. These companies took part in the forum in which DEEPEN shared its findings from the *Schools as a Sustainable Business* study. Noting Accion's success, they connected with DEEPEN and were given a similar technical direction. DEEPEN provided all three financial institutions with connections in private school associations as well.

Furthermore, impact investing firm Gray Matters Capital has also shown an interest in investing in the sector. It is in the process of investing with a microfinance bank that will be focusing on education financing. Similarly, Bank of Industry Nigeria has taken steps to include private schools in its education portfolio of businesses. It intends to lend to microfinance banks, which in turn would lend to schools at subsidised rates.

Moreover, CapitalPlus, a non-profit international organisation working to develop the capacity of financial institutions to support SMEs, participated at DEEPEN's education financing forum in 2014. CapitalPlus realised that DEEPEN would not always be there to facilitate relationships between private school associations and financial institutions, so they began to engage in capacity building, networking and knowledge sharing so that financial institutions would learn how to develop appropriate products for low-cost private schools.

DEEPEN's work is unique in terms of a market systems programme as it tackles the issue of education. But like most markets, DEEPEN realised that asymmetry of information is what deters market actors to react to opportunities. Making the business case opens up markets!

DEEPEN: the bigger picture

The work described in this case study represents one intervention area in the portfolio of the DEEPEN programme that ran from 2013 to 2018. That programme was funded by the United Kingdom Department for International Development (DfID) with GBP 16.2 million (approximately USD 20.7 million at 2018 rates). Out of this, the facilitating change component, which was the MSD side of the programme, had a budget of GBP 9.6 million (approximately USD 12.3 million at 2018 rates).

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Case 11: MDF, Pakistan
Localising skills and services for a competitive leather industry

Increasing industrial competitiveness

The Market Development Facility (MDF) is one of Australia's leading programmes for private sector engagement. MDF stimulates investment, business innovation and regulatory reform to create jobs and increase income for poor people in both rural and urban areas of the economies in which it is active.

In Pakistan, it is active in three national sectors: dairy, meat and wool; finished leather goods; and horticulture.

MDF's strategy for finished leather goods (FLG) is to increase the international competitiveness of the industry and therefore its potential to create decent employment for poor people by developing local support markets for critical skills and services.

How to stimulate investment in production improvements and services

In many developing economies agriculture acts as a labour reserve. The poor will continue to do semi-subsistence farming until a better life beckons. Industrialisation, urbanisation and the growth of service industries are important development dynamics. They put more money in people's pockets, create demand for goods and services and create space in agriculture specialisations and scaling up (making it a choice rather than a necessity). Therefore, investment in development should not only focus on where the poor are, but where they may move to - cities, industries, services.

Finished leather goods is one of Pakistan's most significant industries. It comprises approximately 800 small, medium, and large industrial units and tanneries and employs more than 500,000 skilled and semi-skilled workers.

Pakistan has an abundance of cheap labour. There are 57 million people in Pakistan's labour market, making it the ninth largest country by available human workforce, with 20 per cent of this workforce in the industrial sector. Relatively low levels of foreign direct investment – due to the security situation in the country – means that this potential is relatively untapped compared to other Asian economies.

Since the early days of the leather industry, the focus has been on tanning (the process of treating skins and hides of animals to produce leather). Pakistan exports 95 per cent of all leather produced in the country and 85 per cent of these exports comprises leather without much value addition. This nonetheless generates USD one billion in export revenue – important for a country with a balance of payments deficit. However, with more local value addition in the form of finished leather goods, more jobs would be created and export revenues could rise by an estimated three times.

Pakistan's footwear exports have grown strongly in recent years, 80 per cent of which is in the medium price segment of USD 9 to USD 12 per piece. Coupled with the large resource of cheap labour available in the country, this is an area with strong growth potential.

However, investments in manufacturing of value-added leather goods have been limited. The initial setup costs are high and even when a manufacturing unit is established, further investment needs to be made to procure export orders. Most businesses prefer to outsource production instead. There are a few factories producing high quality niche products such as footballs, motorcycle apparel and horse saddles, but even here investment is limited to specific enterprises. The lack of industry-level investments has resulted in an underdeveloped services sector.

As well as modern production lines, Pakistan's leather industry is also missing a support industry for inputs. In footwear the major inputs are shoe lasts (the structure around which a shoe is made) and moulds (for making the sole of a shoe). The quality of locally produced inputs is not suitable for production for the export market due to quickly rising international quality requirements. Importing such inputs is costly and increases the lead time for production.

There is also a dearth of skilled labour in the sector and leather goods manufacturers find it difficult to hire and retain skilled workers. Most manufacturers are training workers in-house on the production floors. But this training is only sufficient for giving workers basic operational skills.

Within finished leather goods, women workers are particularly involved in stitching, sometimes for lead firms but more often for third party contractors. Most women work from home, which limits what they can do as well as the quality of their work. As a result, their services are usually used for less rewarding cottage industry work. Most manufacturing units have co-working spaces for women and men and most managerial positions are held by men. Women working on the factory floors find it difficult to progress in their roles, facing competition from male colleagues.

Taking advantage of international market opportunities requires compliance with increasingly stringent market and customer requirements. There is a lack of testing facilities in Pakistan capable of certifying compliance with requirements.

The industry also lacks innovation. Most manufacturers replicate designs from each other and are content with exporting to the same client. This limits the growth of the sector as a whole since manufacturers are all eating from the same export pie.

Finally, due to the continuous political unrest in the country, foreign buyers have lost their confidence in Pakistan manufacturers. The poor image of Pakistan's security affects buyers' perceptions of Pakistani supplier reliability and makes them reluctant to visit the country to source orders. To increase or even maintain export orders, it is necessary for Pakistan's producers to be able to demonstrate their products' quality from a distance.

MDF's innovations were designed to address these constraints to the extent possible and enable the industry to respond to an increasingly demanding international market.

New services and production lines

If the Pakistan leather industry wants to keep up with international demand it needs to innovate, both on the work floor and in terms of support services around the core production process. Straightforward subcontracting arrangements need to evolve into a more diverse and complex cluster of industrial functions. Investment in labour is needed to make sure production lines are in qualified hands.

Increasing industrial competitiveness is more multi-faceted than fixing rural supply chains as the production process is more complex. Also, results tend to be more interdependent on other innovations kicking in. This case study discusses the series of innovation launches since 2013. More work is in the pipeline.

To date, MDF has focused on the relatively strong footwear industry. MDF's approach to improve the competitiveness on this segment was to, a) develop 'missing' ancillary industry, b) increase the skill and participation of women for more productive production lines, and c) make internationally compliant testing services locally available. The interventions are described below.

First innovation: localising the production of shoe lasts

The first step was to localise lasts, the shapes around which shoes are stitched together. Each shoe design, each size, left and right, need separate lasts. Responding to design trends or making samples for orders demand quick access to accurate lasts. In Pakistan all lasts were imported, which caused delay and insecurity. MDF's first partnership was with IntraSystek who wanted to set up a first-of-its-kind last production line in Pakistan.

MDF decided to be a minority partner in this process, providing a limited amount of cost sharing for the production line, but just enough to have a seat at the table and be able to step in if the initiative got into trouble. IntraSystek invested USD 210,000 (at 2018 rates), or 78 per cent of the total, into the partnership, while MDF put in USD 58,000 (22 per cent).

To ensure quality, MDF also facilitated staff training through a foreign expert and investment in a software and computer numerical control (CNC) machine that would enable IntraSystek to instantly receive digital shoe designs from clients and convert them into lasts. A new production line was built, and production started.

Second innovation: localising the production of shoe moulds

While MDF was working with IntraSystek on the localisation of lasts, it realised it also had to work on the localisation of rubber shoe moulds. What lasts are for the upper part of the shoe, moulds are for rubber soles. Like lasts, moulds were not produced in Pakistan – and one needs both to be able to quickly produce a shoe sample for a buyer.

MDF found a partner in Tabraiz Mold Engineering (TME), a leading mould producer in Pakistan for plastic bottles. Its management team was interested in diversifying into shoe mould production and had already visited a production site in Indonesia to understand the production process.

MDF provided financial support to TME to buy down their risk and encourage then to complete the project rather than going for a phased approach. TME invested USD 170,000 (at 2018 rates) and MDF co-invested USD 56,000 through the partnership. Another first-of-its-kind production line was built, and production started.

Third innovation: segregated production and day care to encourage female participation

Thirdly, MDF partnered with two manufacturers to set up segregated shoe upper stitching lines for women. Female workers were perceived by the industry to be more focused and hence more suited to perform functions sensitive to errors. There was a desire to retain skills valuable for an export proposition and reduce the need to constantly train new workers.

Investments in separate working spaces, preferably managed by female supervisors, and provided with separate sanitary facilities as well as, for instance, transport to and from the production facility, could help address social concerns. It would also help women experience vertical career growth and take up more specialised or supervisory roles and thus increase their income.

MDF signed partnerships with Servis, a large manufacturer, and Footlib, a medium-tier manufacturer, to set up women-only production lines. Servis invested PKR 13,300,000 (USD 108,000 at 2018 rates) in two stitching lines and Footlib invested PKR 2,300,000 (USD 18,600 at 2018 rates) in a relatively small stitching line. Servis also offered a day care facility for women workers, allowing them to bring their children to work.

MDF played a facilitative role in this, helping Servis to understand that day care could be important as not all women would have enough support at home, which could result in a reluctance to join the workforce or absenteeism due to childcare issues.

Fourth innovation: localising testing services

Next, MDF supported TTI Testing Laboratories in marketing their testing services to the leather industry. TTI was an established supplier of testing services for the textile and apparel industry. With the growing demand for leather testing and with the international requirements becoming more stringent, TTI saw a market for local leather chemical testing services.

While in talks with MDF on localising the service, TTI decided to invest in physical testing machinery, with marketing support from MDF. Profit margins on testing services are relatively small so TTI needed to market to a larger audience to cover its investment. Through the partnership, TTI invested PKR 4,770,000 (USD 38,000 at 2018 rates) to market their local testing services, which were the first for the leather industry of Pakistan.

Strong uptake of new services – but transformation will take time

In four years, MDF's interventions have leveraged an investment of USD 660,000 from the private sector in innovations for the leather industry. The local availability of footwear inputs has been positively received by the manufacturers.

IntraSystek has been able to produce and sell 35,000 quality plastic shoe lasts to 85 leather footwear manufacturers in two full years. They are producing at their maximum capacity and are even forced to turn down some clients. IntraSystek also invested USD 92,000 in another digital last-making machine. At USD 12 a pair, the price of local lasts is competitive compared to imported lasts and a typical order can be sourced in seven days instead of 21 days. This intervention has created 30 full-time jobs.

One shoe last manufacturer (Trendy Shoes) has joined the market and is working at maximum capacity – at least this is the inference from the fact that some shoe manufacturers have to wait weeks to source lasts from Trendy. MDF will continue to assess if other players are likely to join the market independently or if it will need to nudge them to do so.

TME supplied shoe moulds to eight manufacturers before realising that its machines were not suitable. TME independently invested a further USD 25,000 to address this. With the new machinery becoming operational, they are expected to reach out to more than 30 interested manufacturers. TME should be able to process orders in five days instead of the 15 days it takes to import moulds. Local availability of inputs allows for quick turnaround for samples which usually go back and forth with clients. Six full-time jobs have been created at TME because of this intervention

Both Servis and Footlib are happy with the productivity of women on the stitching lines. Footlib ran into some bad weather and had to temporarily shut down its factory due to insufficient orders. But Servis has been thriving and has even set up an ATM service for women at the facility, which gives them more control over their earnings.

Servis currently has 90 women working full-time on the stitching lines, with two women working as supervisors. Servis is considering investing further in additional women-only stitching lines, encouraged by how the current lines are working. Women working on the segregated stitching lines confirmed that they are comfortable with their working environment.

MDF organised seminars called Women@work to give industry players a chance to highlight the benefits of women workers and the segregated working space model. The stitching lines were recognised by industry players as a neat solution to keep women in the workforce.

The cost of TTI's testing is relatively cheap when compared to other testing services. In 2018, more leather manufacturers were using TTI's testing services and this was expected to increase further as TTI's brand gains traction.

Even with comparable prices to imported inputs, leather manufacturers save on import duties and freight charges.

The time-saving aspect of these interventions is crucial for the leather industry. Potential export clients send their designs and samples to the manufacturers, to be made specifically for a season or fashion collection. These samples require coordination and often go back and forth until the client is satisfied with the quality. If the manufacturer does not deliver to the client quickly, it's easy to miss the window

and the export order altogether. Leather manufacturers say they have been able to save an average of 11 days per order because of the readily available local inputs – that's a reduction in turnaround time of about half a month.

In total, 131 full-time jobs had been created as a result of MDF interventions by 2018. This number is likely to grow as more players enter the support industry.

MDF's work has been widely appreciated by the industry. Leather manufacturers have benefitted and their revenues have grown by availing services from MDF partners. However, an increase in production has not resulted in the industry hiring additional labour, a sign that factories were running below capacity.

But this is just the beginning. All footwear inputs need to come together to have an impact on the overall production of a shoe. This means that even if a manufacturer saves time by sourcing shoe lasts quicker than importing, it is still dependent on sourcing other shoe inputs (uppers, zips, moulds) in time for production. So MDF is planning to explore the ancillary industry further and increase local supply.

MDF has already signed a partnership with Interconnect Global, the first sourcing house in Pakistan's footwear industry. This sourcing house will help non-exporting leather manufacturers to be aware of export demands by taking their products to international trade fairs. This sourcing house will also use its expertise to help manufacturers in product development.

Moving forward, MDF plans to work with training institutes and the footwear industry on developing modules to improve the skillsets of leather workers, to further contribute to the increase in competitiveness of the sector and then connect local manufacturers with foreign markets.

MDF: the bigger picture

The work described in this case study represents just one intervention area in the wide portfolio of the MDF programme that started in 2011 and still continues.

MDF (Phase 1) was a multi-country programme working in Fiji, Timor-Leste, Pakistan, Papua New Guinea and Sri Lanka. It ran from 2011 to 2017 and was implemented by Cardno Emerging Markets with a budget of AUD 48 million (approximately USD 35 million at 2018 rates), working in

At the end of Phase 1 MDF had an active investment portfolio of 149 partnerships, leveraging USD 9.7 million in private sector investments, expected to benefit 225,000 poor people, and generating additional income in the order of USD 120 million.

MDF Phase 2 runs until 2022 and is implemented by Palladium and Swisscontact with a budget of AUD 80 million (approx. USD 58 million at 2018 rates).

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Case 12: Road to Jobs, Afghanistan
Promoting good agricultural practices in the aftermath of conflict

Rebuilding market systems after years of conflict

Over the past few decades, Afghanistan has suffered from so much conflict and political instability that much of its economy and infrastructure are in ruins. The Soviet occupation (1979 to 1989) and civil war (1992 to 1996) were followed by Taliban regime imposing strict Islamist rule.

After their ousting by the US-led invasion (2001) policy discussions and funding decisions in the war-torn country were geared toward peacebuilding, neglecting the importance of social and economic security. In recent years poverty and unemployment in Afghanistan has risen. Political instability, continuing difficult security situation and high levels of corruption all disincentivise the private sector from making significant investments in the economy.

Against this backdrop, the Road to Jobs (R2J) programme was designed in 2015 to use an MSD approach to promote private sector development, improve livelihoods and contribute to poverty reduction in the provinces of Samangan and Balkh in northern Afghanistan. The security situation in these two provinces was getting worse at the time due to fighting between government security forces and insurgents.

The project carried out several market assessments for the two provinces to identify sectors that had the potential to grow and create or improve job opportunities and were inclusive of the poor. It selected the grape and raisin sector as one of the sectors to work in, due to its prominent role in the Afghan economy.

How to support farmers switch to modern farming practices

To help them define areas of work, R2J analysed the grape and raisin sector in 2015 to identify the potential for growth and underlying causes of underperformance. Before the decades of conflict, Afghanistan's agricultural products had a global reputation for excellence – particularly its almonds, pomegranates, pistachios, grapes, raisins, and apricots. Grapes play a particularly important role in the economy of Afghanistan and have been cultivated for centuries. Nearly half of all fruits produced in Afghanistan are grapes. Fresh grapes and raisins (dried grapes) are the two main end products.

The domestic market consumes 30 per cent of total grape production, while the remainder are exported to Pakistan, Russia, Turkey, Uzbekistan, Europe and, more recently, Canada. The global demand for grapes and raisins has increased in recent years but neighbouring countries (notably India, Turkey, Iran and Uzbekistan) have a significant lead in the export market. While Afghanistan's grapes and raisins had a good reputation until the 1970s, their export position was severely eroded during the years of conflict that followed. As investment and innovation halted, quality and volumes declined.

There was a lack of public and private sector efforts to advance agricultural practices. The extension services provided by both public and private service providers were poor. There were various associations in the grape producing provinces willing to provide their member farmers with information, but they themselves lacked updated knowledge. They also lacked the finances to get access to innovative agricultural practices.

As a result, farmers didn't know enough about good agricultural practices and failed to get good yields from their grape fields. Their yields were as low as two tonnes/jerib (0.2 of a hectare) whereas up to six tonnes/jerib should be possible. Farmers used the practices they knew from their ancestors such as growing grapes on earthen mounds (jui), which resulted in poor quality and high losses due to pests. In contrast, other countries were using more modern trellising methods. Most grape farmers were also using low quality inputs as they were cheaper in price, not realising that using better quality inputs could help them improve productivity.

According to R2J's 2015 market research, in Samangan and Balkh 5,000 farming households were involved in grape farming. The project also estimated that another 10,000 people were involved in the grape raisin value chain (e.g. as labour, retailers, or working in processing). Most of these people were poor, deriving their income from grape production, or seasonal employment.

Pioneering radio programmes and better-informed workers and retailers

The R2J project team designed two different pilot interventions to test which way of communicating with farmers would be more effective in persuading them to adopt more up-to-date farming practices.

First innovation: building awareness through radio programmes

First, the project wanted to develop an intervention through which they could reach a large number of grape farmers to share good agricultural practices. Media seemed an obvious choice as it could reach many people without any security concerns. But Afghanistan's radio sector was still developing commercially and there were no stations broadcasting relevant information for farmers.

In its search for potential partners, R2J had several meetings with radio stations, but most felt the idea seemed risky because it hadn't been tried before. Finally, one private radio channel operating in north

Afghanistan, Radio Azad (Free Radio), showed some interest. R2J signed a partnership with Radio Azad in 2016 under which Radio Azad would share information about good agricultural practices and agro-input companies would sponsor the programme and advertise their products to farmers.

R2J and Radio Azad came up with a pilot programme called Farmers' Voice. This was the first radio programme in Afghanistan designed, developed and broadcast specifically for farmers. An agricultural expert was hired to run the programme and radio staff were trained on marketing. The initial plan was to broadcast grape-related information only. However, the positive initial response from farmers was so encouraging that the show's producers decided to expand to other crops and topics.

Farmers could tune in to the programme and get information that was tailored to the season (e.g. focusing on grape disease control in the season when it was time to take preventive care). The programme also featured specialists and input companies, which helped them to build up credibility among farmers.

Second innovation: improving knowledge of existing extension services networks

While the radio intervention looked promising, the programme still wanted to get information on good agricultural practices to grape farmers through other channels as well.

During the R2J initial assessment it was found that farmers generally had interaction with a network that included extension workers, farmer-led associations and input companies, none of whom was giving them relevant advice on good agricultural practices because they lacked it themselves. R2J thought it would be beneficial for these service providers to start giving relevant advice. The Ministry of Agriculture, Irrigation and Livestock office in charge of public extension workers would benefit as it would help them earn credibility for their services, input suppliers would benefit as it would help them establish a strong relationship with their clientele and help boost sales, and it could boost the voice and membership of farmer associations.

For the second intervention, R2J collaborated in 2016 with the Afghanistan National Horticulture Development Organization to develop a training module on grape cultivation. This organisation comprises stakeholders such as horticulture experts, NGOs, farmer associations, cooperatives, commercial famers and agribusiness companies who had joined hands to improve the industry by providing technical services and promoting private/public coordination.

This body was well suited to provide training as they would be able to continue to provide such programmes without R2J support. For this programme, R2J financially supported them to deliver training programmes covering pre-and post-harvest topics for grape farmers. A total of 31 people (nine input suppliers and 22 representatives from farmer associations and the district office) participated in the training, which was delivered in actual grape orchards.

The programme spent an estimated USD 168,000 over three years on these two interventions.

Significant coverage through radio

Measuring impact in a fragile conflict-affected country like Afghanistan is difficult because of the lack of secondary data, the absence of good research institutes, and travel limitations due to safety concerns.

But an impact assessment conducted by the project team one year after the implementation of Radio Azad's programme revealed that 42 per cent of farmers were listening to Radio Azad. Of these farmers, 80 per cent knew about Farmers' Voice.

One of the main reasons for farmers not listening to the radio was the lack of a radio signal. R2J's monitoring revealed that it was weak in rural villages and only clear in the late evening. In Samangan province, where their broadcast signal was weak, Radio Azad contracted Radio Shahar, a popular community radio station, to broadcast the programme.

The farmers who followed the show were happy with the farming-focused programme. They believed that it would eventually result in improving their yields and increasing production. Some farmers even mentioned interacting with the programme after calling the radio's hotline to put their queries to the specialists.

It was expected that by the end of 2017 all 5,000 grape farmers would have adjusted some agricultural practices by learning from Farmers' Voice. Moreover, R2J believed that an estimated 42 per cent of all famers in both provinces could benefit from receiving information on good agricultural practices.

With regard to the second intervention, an assessment of 45 farmers revealed that the intervention had also greatly benefited extension service providers and farmers. The majority – around 75 per cent – had received information from input suppliers, while 25 per cent had received information from extension workers and association members.

The main challenge for extension workers was travelling to different villages as transport costs were high. Input suppliers were the most successful as they were paid for offering these services. As a result of this intervention, input suppliers increased their customer base by 41 per cent, which in turn increased their sales by 24 per cent.

Although it has only been a year since the intervention, grape quality seems to have improved. According to the assessment, most farmers adopted some kind of new agro-techniques and their grape production increased by 422 kg/Jerib on an average. This will improve further in the coming years as good agricultural practices are further applied. According to project estimates, about USD 376,000 have been generated by all market players from the grape interventions and 625 jobs have been improved or created.

Commercial players backing development pilots

The biggest systemic change brought on by R2J is that it has created a market that provides information on good quality agricultural practices. It successfully demonstrated that different market players can benefit by giving good information to farmers as it boosts their own credibility and business. This has generated interest among other market players.

By 2017, Radio Azad had attracted at least ten new input suppliers/sponsors, earning an additional USD 21,000 through sponsorship. The success of Radio Azad's Farmers' Voice triggered the design and broadcast of another agricultural programme, New Agriculture, in partnership with Regional Agricultural Development Program, funded by the USAID. This programme is being piloted to offer a complete package of information on agriculture practices.

Extension services have also been replicated by different players who showed an interest in partnering with R2J to improve their extension services for grape farmers. This has led to a few more interventions, including sending cultivation know-how to farmers through SMS by a leading mobile network; a retailer training with an input retail company to improve the knowledge passed on by their retailers to farmers; training public extension service providers by agricultural department; and information dissemination to grape suppliers through a local processing company that made grape-based products.

R2J: the bigger picture

The work described in this case study represents one intervention area in the portfolio of the R2J programme that ran from 2015 to 2018.

The project, which was funded by the Swedish International Development Agency (SIDA) and implemented through the International Labor Organization (ILO), had a total budget of USD 7.4 million. The project's mission was to help restore market systems which, not surprisingly, weren't operating optimally in the aftermath of the conflict.

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