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SDC Making Markets Work Case Study
SDA –Elola Case Study

**Developing markets for dairy production through service
development and public-private partnerships in rural Armenia**

The Springfield Center

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This case study was prepared by The Springfield Center, which has the mandate "Strengthening Market Development Capacities in the South Caucasus" with the CIS Division of the Swiss Agency for Development and Cooperation (SDC).

This case is one of a series exploring the application of the Making Market Work for the Poor approach to different areas of private sector development.

Summary

Post-Soviet transition economies have faced, and continue to face, a huge challenge in moving from centralised, state-controlled economic systems to entrepreneurial and more liberal market systems. The emerging markets inevitably grow from population centres and areas where wealth is concentrated. The losers are often the poorest and most marginalised that are least well served by the emerging private services and markets. Among those losers are the rural poor who have lost access to agricultural markets and essential services and often lack the know-how to operate effectively as independent farming enterprises.

Development intervention to make markets work better for the rural poor are therefore a high priority in transition countries. This case study explores an intervention which focused on creating access to markets and services for remote communities in the mountainous South West of Armenia. The work was funded by the Swiss Agency for Development and Cooperation (SDC) and implemented by a small Armenian development NGO, Strategic Development Agency (SDA).

The case study explains the 'Making Markets Work for the Poor' (M4P) approach and illustrates how it can be practically applied in a dynamic way to bring about meaningful and sustainable positive change within markets. The case study demonstrates a number of key elements in the M4P approach and the application of tools to engage in effective market based relationships:

- Understanding markets: The importance of understanding markets and identifying the underlying causes rather than merely the symptoms of weak markets.
- The role of facilitation: The key function of a market facilitator in being a catalyst for positive improvement in markets without becoming a permanent market player.
- Public Private Partnership: The role of public private partnerships (PPPs) in engaging with commercial actors and investing into commercial activities to bring about public development benefits.
- Clustering: The model of clustering small communities to create an economy of scale that can make buying from small and remote communities viable for commercial buyers.
- Developing the culture of paying and charging for services: A model for cushioning the transition from free, state delivered services to full for-fee services by establishing a revolving community managed fund.

By working in a market oriented manner, avoiding building dependence and effectively focusing on long term sustainability, SDA achieved meaningful change within the rural dairy market in Southern Armenia. Commercial veterinary services have been established for around 2,273 households and commercial buyers have increased buying from 5 villages and started buying from 7 smaller and more remote villages. This has ensured a formal market for milk for around 2000 farmers where often milk was wasted or sold informally.

These preliminary activities are now being built upon and expanded in a second phase of the project which began in late 2008.

1. Introduction

In the nineties, the USSR initiated a series of political and economic reforms that culminated in the independence of many former Soviet states and a rapid transition from centralised and controlled economic planning to free market economies. In many circumstances this transition was made extremely rapidly whereby state factories, land and services were privatised. This rapid transition resulted in significant problems in many industries in states where entrepreneurship had been stifled and limited for decades and state ownership, control and service provision were the norm.

The former Soviet republic of Armenia was among those facing the huge challenge of rapid economic and political transformation. In agriculture, Armenia was the first Soviet state to pass a land privatization law in 1990; from that time Armenian farmland passed from state to private ownership at a faster rate than any other Soviet republic.

This transition accelerated after Armenia's independence in 1991 and the agricultural landscape of Armenia changed rapidly from one of large state owned collective farms to private smallholder farming. Infrastructure built around collective farms fell into disrepair, formal market channels for agricultural produce dwindled and in many circumstances disappeared, essential services such as animal healthcare collapsed and farmers struggled to source essential agricultural inputs that had previously been distributed through collective farms.

These problems of market transition were exacerbated by political problems in Armenia which saw the collapse of basic services, fuel and electricity shortages and the Nagorno-Karabakh war with Azerbaijan.

As Armenia stabilized politically and economically in the late nineties, the country was faced with the major challenge of reinvigorating its industrial and agricultural production base. In agriculture, new market systems needed to emerge and farmers needed to move from subsistence into profitable farm production. In a mountainous country with poor infrastructure, this development challenge was most acute for remote rural communities. This challenge to rural development in Armenia is one that continues today as the country recovers from the political and economic upheavals of the nineties.

The Swiss Agency for Development and Cooperation (SDC) recognises the challenge of rural development in Armenia and the resulting divide between urban and rural incomes and livelihoods. Rural economies are struggling to rise to the challenges of an increasingly centralized country where almost half the population and the bulk of industry are clustered around the capital city Yerevan. Many rural communities, which rely predominantly on agriculture, suffer from an ageing and reducing population as the youth migrate to more economically vibrant areas. SDC therefore prioritises rural development and the reduction of rural poverty in its country and wider South Caucasus Regional co-operation strategy.

SDC is therefore supporting a number of initiatives in rural development across the South Caucasus. Underpinning this work is a broad objective of ensuring sustainable economic development that is not reliant on ongoing external donor funding. The approach adopted by SDC is one of 'making markets work for the poor' (M4P) which recognises the need to intervene systemically to build sustainable market systems.

This case study describes work funded by SDC and implemented by the Strategic Development Agency (SDA) between 2003 and 2008 to develop sustainable rural markets for dairy farming. SDA is a small Armenian NGO founded in 2002 by a number

of professionals from various backgrounds including economics, law, journalism, agriculture and international development. SDA aims to enhance socio-economic development in Armenia by providing development consultancy and implementing strategic development projects. SDA also runs a business consultancy division for investors and established local businesses.

In exploring the work of SDA, the case study highlights the practical application of a Making Markets Work for the Poor (M4P) approach in building sustainable market systems in transition economies and in a rural development context. The case also highlights the role of public-private partnership (PPP) in building sustainable markets and services.

2. Focus and rationale for intervention

Agriculture and the rural economy in Armenia: Building agricultural incomes in rural markets that are distant from the capital Yerevan has the potential to directly impact on poverty and redress asymmetrical development between urban and rural areas of Armenia.

After construction, agriculture is the second most important economic sector in the Armenian economy accounting for 17.5% of GDP¹. As a fertile country with a track record of agro-export to the Soviet Union and a strong agricultural tradition, the Armenian agricultural sector is perceived to be a sector that has a strong growth potential.

With the collapse of collective farming after independence and the subsequent growth of smallholder and predominantly subsistence farming, rural incomes were significantly undermined. In 2006, rural incomes averaged only 25,000 Armenian Dram (approximately US\$ 80) a month of which over 40% is derived from farm income². Farm income is therefore the single largest source of household income in rural areas and one on which rural livelihoods are largely dependent.

Agriculture over the last decade has been stifled by the legacy of the collapse of state-funded and delivered services and inputs, and the seismic and sudden changes facing farmers in moving from collective farming to small-scale farm enterprises. While agriculture was beginning to recover from the turmoil of the nineties, much of the growth was taking place in central areas close to Yerevan. Rural and particularly mountainous areas with poor infrastructure, which were distant from markets, looked to be the least able and last to benefit from the growth in agriculture.

These factors combined to make agricultural development in rural Armenia a viable and logical focus for development effort.

The Armenian dairy sector: With a solid market and growing demand and with its direct potential links to hundreds of thousands of small-scale rural cattle farmers, dairy was a viable sector for development initiatives to focus.

Armenia was a renowned producer and exporter of dairy produce, particularly cheese and yoghurt, in Soviet times. The mountainous terrain with high alpine pastures makes much of rural Armenia prime cattle rearing country. The tradition of dairy processing has

¹ The Economist Intelligence Unit, Armenia Country Report February 2008

² Integrated Living Conditions Survey of Households 2006, National Statistical Service of the Republic of Armenia.

persisted in Armenia for generations and the consumption of dairy products is firmly embedded in the culture and diet of Armenia.

In Soviet times, milk was processed in centralised factories supplied by collective farms. Following independence, these factories closed and dairy processing became a primarily informal, household activity reliant on informal markets. In recent years the dairy industry has again started to grow through private investment. There is significant and growing domestic demand for dairy products and regional demand for Armenian cheese, particularly within the Russian Federation.

Syunik Marz in Southern Armenia: *Syunik Marz was chosen as a focal area for intervention due to its fragile economy, rural and remote location and its reliance on agriculture.*

The rural South East of Armenia was identified by both SDC and SDA as a potential focal area for intervention. Syunik Marz (one of 11 Armenian regions) lies in the extreme south of the country bordering Azerbaijan and Iran. The region had been a centre for mining and small-scale industry in Soviet years, but much of this industry collapsed in the nineties. Syunik especially suffered from the Nagorno Karabakh conflict and war from 1988 to 1994 between Armenia and Azerbaijan – both directly, through military action, and indirectly, through social and economic upheaval and uncertainty.

3. The M4P approach

This case study explores SDA's work through the lens of an M4P approach, and it is therefore useful to outline the key elements of the M4P approach which has been adopted by this intervention.

M4P is an approach to developing market systems so that they work more effectively and sustainably for poor people. The approach has a number of key characteristics:

- It is based on a solid understanding of the wider market system and the core constraints that limit its effective operation and poor people benefiting from it and participating in it. **Research and understanding market systems** is therefore a foundation for an M4P intervention.
- Interventions are aimed at bringing about lasting change within the system, and **sustainability** is therefore at the heart of the M4P philosophy and approach. The successes of interventions are therefore assessed more on what they leave behind, i.e. sustainable change within the market, than what they do during the project life.
- Interventions therefore **aim to address the underlying causes** of weak performance in markets rather than the symptoms of weakness.
- To ensure sustainability, M4P development actors need to act as **'facilitators'** and ensure that permanent actors do not become reliant on their activities or support. The role of facilitators is a short-term and strategic one to strengthen markets. This role of the 'facilitator' is explored further later in this paper.

SDA initiated work in the dairy sector in 2003 with a project that focused primarily on developing veterinary services. But by 2006, SDA had essentially adopted a Making Market Work for the Poor approach to developing the rural dairy sector. While SDA's initial interventions had focused narrowly on developing veterinary services, there was recognition that the true constraints in dairy were broader and related to issues of market access, village level policy and mobilisation, skills and perceptions among farmers. In

effect SDA had rapidly moved from a limited focus on changing rural veterinary service delivery to working at a broader 'system' level.

Furthermore, partnership and funding from SDC had enhanced SDA's existing focus on sustainability, raising it higher up the priority in SDA's interventions in dairy. SDA's change of focus from intervening to develop services to focusing on making sustainable change in market systems was consistent with the M4P approach being championed by SDC in its South Caucasus and wider international programme. This adoption of the essentials of an M4P approach was instinctive within SDA, as a small organisation that was close to the market and already concerned about long-term sustainability of its interventions. Thus, from later 2006, the intervention was led and informed by the M4P approaches and models being developed and promoted by SDC.

4. Understanding market systems

Engagement and consultancy as an approach to understanding markets

A detailed understanding of market systems is at the foundation of the M4P approach. In the case of larger projects and donor-oriented programmes, such understanding is often established by commissioning in-depth and often time-consuming and expensive market analysis and stakeholder consultation. SDA's approach to understand markets was more characteristic of interventions by smaller projects that are on-the-ground and already close to the markets in which they intend to intervene.

SDA operates as both a conventional NGO project implementer and business consultancy. The organisation offers consultancy to private companies in developing marketing and business plans and in undertaking market research. These two core roles of NGO project implementer and private sector consultancy effectively provided SDA with the entry point to engage in the dairy market:

- In 2003 SDA, funded by SDC, initiated a pilot project in the Sisian region of Syunik Marz (a neighbouring region to Goris where SDA was ultimately to focus its activities) to support the development of veterinary services for dairy farmers. This project was conventional in nature, focusing narrowly on developing a specific service, veterinary services, although it also aimed towards building sustainability in service provision.
- In 2005, SDA undertook a consultancy to develop a marketing strategy for Elola, a small commercial cheese processing company. This was funded on a 50/50 cost share basis by the EBRD (European Bank of Reconstruction and Development) Business Advisory Services (BAS) Project and Elola. This business consultancy assignment provided SDA with an insight into the market opportunities for cheese but also highlighted that the supply of milk was a major constraint to the growth of the sector.
- In 2005/6 SDA provided advisory consultancy to ACH (Acción Contra el Hambre, an international NGO working in Southern Armenia) to lay the foundations for a broader and more market-oriented intervention in rural dairy farming in the Sisian region (similar to the intervention ultimately initiated by SDA in 2006 in Goris).

These activities provided SDA with insights and a deeper understanding not just of the issues and problems of farmers and farming communities but of the operation and constraints in processing and marketing of processed milk. In effect, these separate activities provided SDA with a deeper understanding of the operation of the dairy market system and supply chain – from primary production of milk through to ultimate marketing and export of processed cheese. These activities also provided SDA with the opportunity to engage with key actors in the dairy industry in a professional relationship rather than in a more limited research capacity.

From services to systems

As with many conventional interventions, SDA's initial response to developing dairy farming was to work primarily at the farmer level building skills and veterinary services. The 2004-5 phase of SDA's work in Sisian focused on developing the 'basic veterinary services model'. Community vets were identified and trained and premises found within local community government offices which were refurbished and equipped as vet points. Farmers were mobilised into self-help groups (known as 'Nakhadzernogh Khump'); membership fees were paid to contribute to the costs of vet services. Thus, the culture of paying for vet services, which had not existed before, was introduced.

These activities were successful in establishing services and also resulted in a large dairy processor, Ashtarak-Kat, regularly buying from the Sisian community. Nevertheless, SDA recognised that a focus purely on farmers and community level farm services was not going to resolve constraints for many communities that were outside the existing collection network of milk processors. A broader approach that specifically aimed at opening up market channels for milk was required as well as activities to improve milk quality.

The business consultancy with Elola in 2005 built the foundations of a strong relationship between SDA and the company and ultimately its work in Goris. Elola was investing heavily in refurbishing a defunct Soviet cheese factory in Goris and building its distribution and marketing links to domestic and regional (mostly Russian) markets. The company required high quality, high fat content milk from local suppliers as a basic pre-requisition for its activities. While Elola had already initiated milk collection from some communities around Goris and close to the main roads, the company required additional suppliers and improved milk quality.

SDA's consultancy work with Elola established trust and respect between the NGO and trading company and therefore provided SDA with the foundation to broaden their activities into a more cohesive programme involving market access, services and farmer skills. SDA was, by way of interaction with various players in the market, developing a more complex understanding of the wider and deeper constraints in the rural dairy sector in Armenia.

Applying a M4P lens to the dairy market in rural Armenia

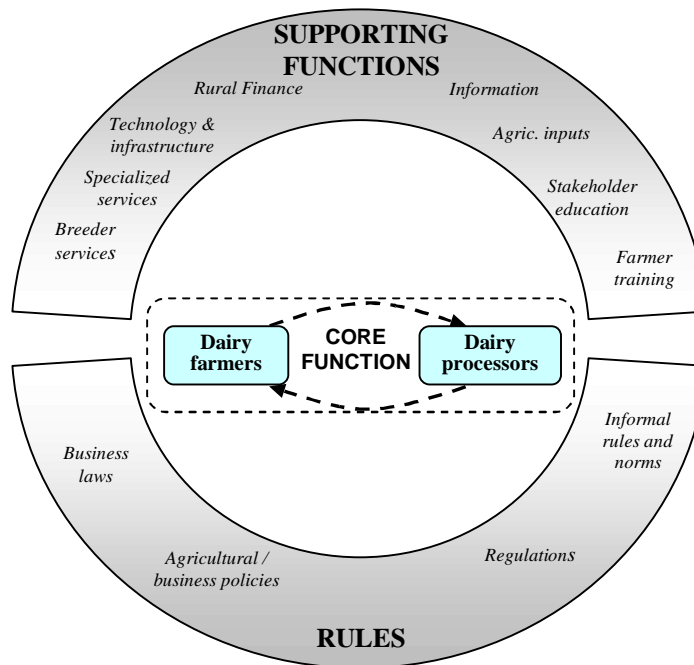
This broadening of focus can be understood by applying a M4P lens on the dairy sector as SDA understood it in 2005. The market system is conceptualised as a core market with supporting functions the rules. The work of SDA up to 2005 had provided the organisation with an insight into these key areas of the market system:

Core Function: Selling fresh milk to processors was perceived to be the most viable market option for rural dairy farmers. The market for cheese was large and growing whereas direct sale of fresh milk to consumers was limited. The core of the market system on which SDA would focus was therefore the transactional relationship between farmers and dairy processors.

Supporting functions: To enable this core transaction to take place, there are a number of essential supporting functions that need to be in place and operating. These include access to specialised services such as vet services, infrastructure, equipment and finance. Many of these services were weak or non-existent in rural Armenia.

Rules: The rules of the market, both formal (laws, policies and regulations) and informal (traditions and norms) create the operating environment in which the market operates.

Figure 1: The market system for dairy farming and processing



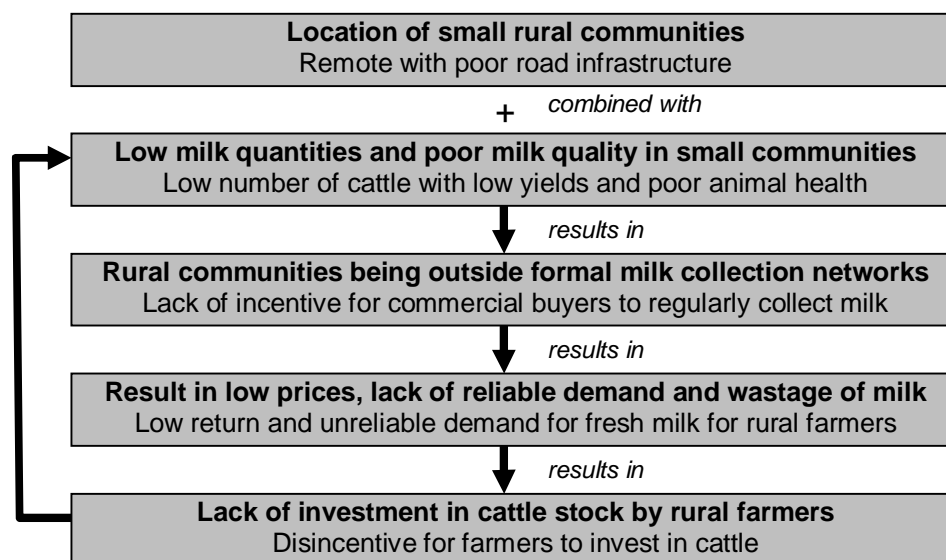
The actors in the market system are the 'market players'. These market actors are both public and private entities that transact in the core market, deliver supporting functions and set and influence the rules and regulations of the market.

The constraints to the participation of the rural poor in dairy markets

SDA's work in the dairy sector had highlighted a number of key constraints that impacted on the operation of the dairy market and in particular on the participation of the rural poor within that market.

In particular, small farmers in rural communities were faced with a self-perpetuating problem which impacted particularly strongly on the smallest and most remote communities (figure 2). The distance of many communities from main roads and the main dairy processing factories made them unattractive to commercial milk buyers. This disadvantage was exacerbated by the fact that many of these small communities had extremely low milk yields with poor quality of milk. Low milk quantity was due to the fact that many farmers only maintained a few head of cattle and the lack of effective organisation among farmers to bulk milk produced for sale. Poor milk quality was related to lack of quality inputs such as feed and the health of cattle due to poor animal husbandry skills, lack of vet services and a deteriorating quality of cattle due to lack of effective breeding practices and services.

Figure 2: Key problems in the rural dairy industry



This situation resulted in rural communities having to rely on local and informal markets for milk. Much dairy processing was undertaken at household level and cheese was sold or bartered to informal traders who visited the communities. Prices were inevitably erratic and low and milk was often wasted. These factors created a disincentive for farmers to invest in increasing their cattle stocks or investing in improved cattle husbandry practices.

Small rural dairy farmers were therefore stuck in a vicious circle of low productivity and quality in milk production which limited their access to markets. The recent history of Armenia had exacerbated these problems.

Collapse of established local markets for fresh milk: The collapse of cheese processing factories established in Soviet times had cut off established local markets for fresh milk. The private sector investors in dairy processing, such as Ashtarak Kat and Elola, that were entering the market would inevitably pick the lowest hanging and ripest fruits in terms of milk suppliers and therefore gravitate towards the largest farmers and the largest and most accessible milk producing communities.

The reduction and cessation of state-supported agricultural services: Independence from the USSR and the subsequent privatisation process had significantly reduced Armenia's state-funded agricultural services. During the Soviet era, services were provided through collective farms for free – thus undermining a service-for-fee culture. In independent Armenia, lack of funds had resulted in the state only paying for inoculation programmes but not treatment or consultation with vets. With no tradition of paying for vet services, community vets effectively ceased operation. Farmers who sought the help of vets often only did so when the health of animals had reached crisis point. Even in such scenarios, community vets invariably lacked the drugs and equipment to treat animals, and farmers had to travel to urban areas to seek appropriate drugs. In effect, most rural communities in Armenia are therefore operating without access to vet services.

A skill and knowledge gap in animal husbandry: While Armenia had a history and tradition of dairy farming, the Soviet years of large collective farming had undermined the household knowledge of small-scale dairy farming. Moreover, many people who

had been employed by the state and in state-run industry had found themselves unemployed during the economic transition. These rural unemployed often became the recipients of privatised land and families found themselves, sometimes reluctantly, dependent on farming often without the skills or background in agriculture. In addition, many households had entered farming as a last resort after retrenchment from state employment.

5. Interventions to strengthen the market system

5.1 Identifying intervention points

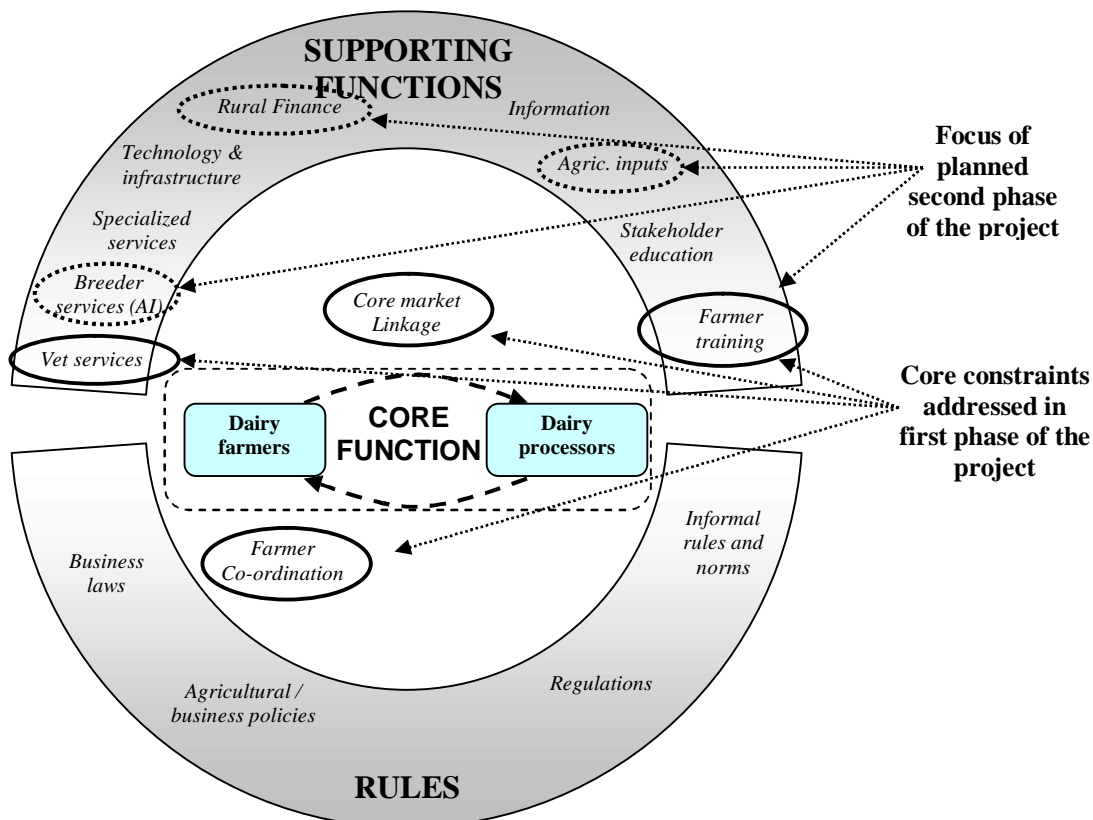
This analysis of the market system highlighted both the symptoms and deeper problems of the market. The challenge to SDA was to identify the underlying causes which, when addressed, would result in real and sustained change in the market that would benefit the rural poor.

As in most markets, the problems facing rural dairy farmers in Armenia were multi-dimensional. Experience indicated that there was no 'silver bullet' that would provide a simple solution to the complex problems facing farmers. SDA's initial pilot project in Sisian highlighted that lack of access to vet services was a key weakness but without addressing the lack of access to markets farmers would not invest in dairy farming. SDA therefore recognised that building the dairy industry would involve interventions beyond capacity building farmers and would include:

Opening up markets for milk by working with milk processors: Supporting the development of dairy supply chains into rural areas and reducing the entry barriers for rural communities to link to formal collection networks for milk.

Building rural services for farmers: Supporting the development of vet services, artificial insemination, agricultural inputs and access to finance.

Figure 3: Project interventions in the dairy system



5.2 Intervention approach

The resulting intervention initiated in the Goris area in 2006 was designed in two distinct phases.

Phase one: Formalising markets and establishing vet service points

Phase one, which ran from 2006 to 2008, focused on building formal linkages to milk markets through a public private partnership (PPP) with Elola and establishing vet service points as a fundamental building block for animal related services. To enable this to take place SDA needed to support farmer mobilisation and training.

In the early days of the project there was significant demand from some rural farmers for artificial insemination (AI) services. AI enables farmers to plan calving and therefore the milk production of cows, and thus ensures that milk is produced when it is most in demand from the market. More importantly, AI enables farmers to improve the genetic stock of animals increasing the health and productivity of cattle stocks.

While AI was in demand, it was recognised by SDA that AI services could not be effectively and sustainably developed before vet service points were established and the market for milk had been formalised. SDA's recognition of the need for prioritising activities and focusing interventions was essential for a small organisation with limited capacity and as a strategic response to the multi-dimensional problems of the Armenian rural dairy sector.

Phase two: Building rural farmer services and supply of dairy inputs

Phase two, which has been initiated in 2008, builds on the market access provided by Elola and vet service points that were established in phase one. With increased access to formal markets, farmers are increasingly interested in investing in dairy farming but lack access to the basic services and inputs. Phase two of the SDA project therefore works to improve access to dairy inputs, particularly quality feed, and work with the vet service points to introduce artificial insemination services.

The project is also working to address the financial constraints faced by dairy farmers and their lack of access to financial services. The project is therefore supporting linkages between formal, financial institutions and rural farmers. Workshops have been held with financial institutions to highlight the market potential of rural farmers in the dairy sector and to address pre-conceptions that lending to rural farmers is higher risk.

SDA is also working to build embedded services between Elola and their supplying farmers. Embedded services are provided as part of business transactions between actors in the supply chain to improve the quality, quantity or consistency of their suppliers (backward linkages) or to improve the market and demand for products (forward linkages). In phase one, SDA provided much of the training to farmers, albeit with participation of Elola. In phase two, SDA will refocus to build the capacity of Elola itself to train and support farmers on how to maintain and improve milk quality and production. Such services are already being provided by some milk processors, e.g. Ashtarak-Kat, to larger dairy farmers. Similarly, SDA will potentially work in collaboration with Elola to support them to expand training of small-scale milk suppliers as part of their regular business operations with farmers.

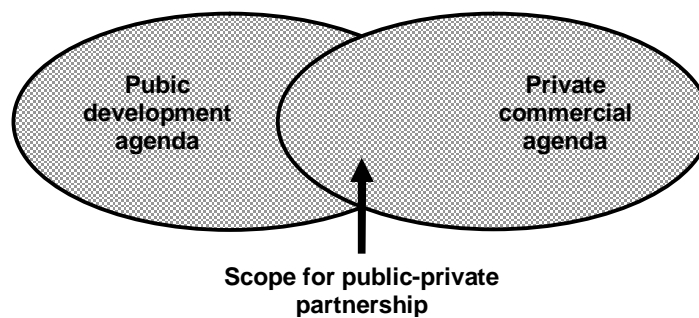
5.3 The role of public private partnership (PPP) in building markets

Public Private Partnership is an approach adopted in many areas of development. In the SDA example, PPP was used in phase one of the project as a method of opening up

formal milk markets for rural communities and will be developed in phase two to enhance embedded training services for rural farmers.

A public private partnership is based on identifying where public and private commercial agendas and objectives overlap (figure 4). The PPP developed by SDA works to build the core commercial activities of Elola that are likely to have a positive developmental impact on rural development. The private and public agendas and incentives for Elola and SDA are therefore clear:

Figure 4: Public private partnership



The private sector perspective - Elola

The adequate supply of quality milk is a major constraint to the growth of Elola's cheese processing activities in Goris. The quality of milk (defined by fat, mineral and solid content) directly relates to the quality and taste of cheese. With strong and growing demand for cheese, both domestically and within the region, and with untapped processing potential within their factory in Goris, the quantity and quality of milk supply is a critical growth constraint for Elola. It is therefore a clear commercial priority for Elola to improve its milk collection network and to ensure that its supplying farmers are producing high quality milk. Investing in building its supply chain and in improving the practices of dairy farmers is therefore a central part of Elola's commercial agenda.

The public sector perspective - SDA

Commercial dairy processors will inevitably purchase from farmers that are closer to main roads and clustered together in larger communities and can therefore bulk milk. The smaller, more remote communities are likely to be the last to benefit from the emerging commercial dairy processing industry in Armenia. It is these communities that are most fragile in rural Armenia, with few economic opportunities and often declining populations. Working in a PPP can ensure that such marginalised communities become part of the commercial supply network for dairy processors resulting in rural economic development that would be less likely to take place without public intervention.

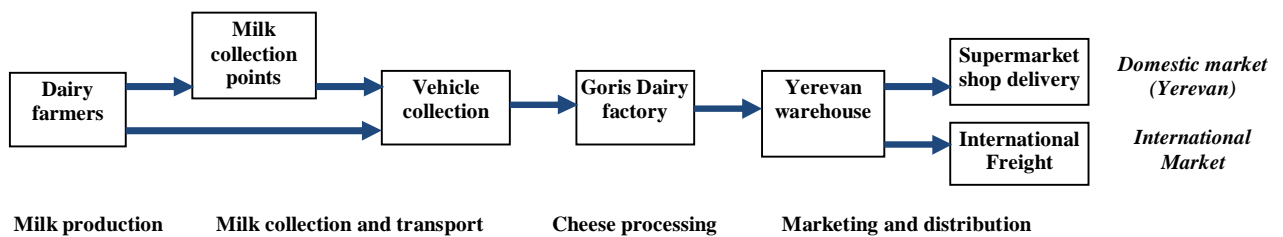
Making PPP work

This win-win scenario for the public and private stakeholders resulted in a strong mutually beneficial relationship being established between Elola and SDA. A contract was signed between SDA and SDC (representing the project implementer and donor) and Elola which clearly detailed the expectations from each party. Elola would increase its supply network to a number of new villages and invest in milk collection equipment in these villages. SDA, with SDC support, would support Elola to mobilise and train the farmers in these villages to ensure quality and consistency of supply. The contract was therefore based on technical co-operation rather than financial payments between the parties involved.

Public and private investment in PPPs

To establish in the business of cheese production in Goris, Elola needed to invest in a supply chain that would link farmers to domestic (primarily the capital Yerevan) and international (predominantly Russian) markets. This required investment throughout the supply chain, from collecting milk from farmers, cheese processing in a refurbished factory, warehousing, marketing and distribution. Domestic distribution was a critical issue for Elola since almost all cheese sales in Armenia are through small, individual shops and no wholesale distribution service exists in the country. The total investment that Elola made in the business was over US\$2 million.

Figure 5: The Elola supply chain



In understanding the role of public finance in the Elola/SDA PPP, it is important to recognise that Elola's investment throughout the supply chain was essential to open up formal markets for dairy farmers in the Goris region. For example, without the investment in distribution and marketing infrastructure, the supply chain would not function. Investments at the farm level therefore cannot be separated from those towards the processing and market end of the chain. When analysed in this way, Elola's investment of almost US\$ 2 million exceeds by far that of SDC/SDA, which amounted to 225,000 Swiss Francs (approximately US\$195,000) in developing market access for farmers. The SDC/SDA investment was applied to leverage, but not pay for, increased investment by Elola in building their supply network to rural villages in Goris.

5.4 Clustering as an approach to opening up market access

SDA adopted an approach of clustering its support to villages. This was particularly important for opening up market access to the most remote communities. For example, a very small community such as Bardzravan with only 46 households which is at the end of a long, poorly maintained dirt road is unlikely to be an attractive location for commercial milk collection by dairy processors. But if milk production in communities along the route to Bardzravan is also developed, then it becomes a much more viable proposition for commercial milk collection. The strategic clustering of villages to create viable milk collection routes is therefore central to opening up market access to remote villages.

5.5 Developing a culture of paying for veterinary services

One of the major constraints in developing vet services for rural communities was the fact that there had not been a tradition of paying for vet services. *On the one side*, community vets did not perceive themselves as business people providing for-fee services but as public service providers who delivered state vet services on a non-fee basis. With the collapse of state vet services this effectively made their role redundant and most community vets had ceased working regularly as vets. *On the other side*, farmers were not used to paying for vet services and were reluctant to pay unless there was a crisis with their animals' health. With low levels of liquidity in rural communities, paying for vet services was also difficult. The service market for for-fee vet services was

therefore weak at both the supply and demand level. To break this impasse, SDA needed to work at both the supply (vet service provider) and demand (farmer consumer) sides of the relationship.

On the supply side, SDA provided start-up support (in terms of equipment, initial supply of drugs and technical training) for community vets to set up businesses while the local village councils provided office accommodation for a small vet service point. In providing this, SDA focused on establishing the vet points in a way that would avoid unsustainable overheads and ensure a businesslike approach to managing the vet points.

On the demand side, SDA supported the mobilisation of farmers into self-help groups (known as Nakhadzernogh Khump) and raised the awareness of farmers about the benefits and need for improved animal husbandry and vet services. These groups were also used as the foundation for a revolving fund to pay for vet services known as the Revolving Medicine Fund (RMF).

Revolving Medicine Fund (RMF): Farmers joined the RMF by paying a predefined monthly fee to the RMF according to how many cattle they owned³. This fee then paid for the vet services and as such acted as an insurance scheme which smoothed out the cash flow for farmers. This scheme was introduced flexibly within the farming communities whereby farmers were able to opt in or out of the scheme. Those who did not join would have to pay full fee for the vet services provided.

SDA subsidised the vet service points for around one year by paying for the salary of the vet. This allowed the finances in the fund to accumulate and therefore establish an essential surplus that would support unusually high usage of the service, for example in the event of a contagious disease. After one year SDA's support to the fund ceased and the fund was operated independently.

All of the nine vet service points established now operate independently of SDA's financial support (five becoming independent in the first quarter of 2008 and 4 in September 2008). While a number have adapted the RMF, for example to cover consultation but not drugs, the fund appears to have had a clear effect on building the willingness of farmers to pay for vet services. The fund therefore provided a 'soft' mechanism for introducing for-fee service provision, ensuring that all farmers contributed to the fund. The management of the fund, which was done jointly by vets and farmers, ensured that money was maintained for drugs and upgrading of equipment and not pocketed by the vets. As such, the RMF has smoothed the path to private provision of vet services.

While the vets involved in the vet service points inevitably vary in their level of entrepreneurship, the most dynamic are expanding their services to include animal dipping and treatment of a wider array of farm animals. One vet is attempting to secure training in apiary (bee keeping) which responds to a specific demand within his local operating area. These early indicators of vet service points responding to farmer demand for services is a considerable change from the previous situation where community vets only provided the services that were paid for by the government.

³ Farmers could also include other animals (sheep, goats and poultry) in the RMF. The payment amount was calculated on a predefined basis whereby 7 calves, sheep or goats were equivalent to one cow in the RMF. These ratios had been laid down by government in the Soviet era for state vet services and were deemed to be an acceptable basis for fee calculation.

5.6 The SDA approach to facilitation and sustainability

SDA's approach to intervening in the dairy market has effectively been that of a 'facilitator' as opposed by the 'provider' role that conventional programmes usually take on. In each of SDA's interventions, there has been a clear and coherent exit strategy whereby the services and market linkages established continue after the project ceases.

The facilitation role in market development

The role of 'facilitator' is critical in market development interventions and therefore merits some additional explanation. Facilitators are bodies (e.g. NGOs, projects, government departments) that intervene in markets to achieve social/public objectives. Their role is time-bound and finite, and as such they do not become part of the market system, but an 'agent' (or catalyst) for positive market change.

This role is a delicate one. A poorly focused or overly aggressive facilitator has the potential to negatively impact on markets, undermining their operation, efficiency and possibly their viability. A facilitator therefore needs to ensure that it works in a business-like way to deepen markets in areas which increase viability and market operation. For this reason, an appropriate 'golden rule' of facilitation is to act and tread lightly. Flooding markets with finance and/or significant technical support is recognised as potentially dangerous, whereas leveraging private sector investment with limited but focused financial support and technical assistance has the potential to yield more positive results. This 'golden rule' is particularly important when working in weak or emerging markets which can be more easily distorted.

Facilitation in practice: The SDA example

In the PPP with Elola, SDA has been the facilitator for Elola to expand its milk collection operation to a number of rural villages. SDA does not act as a permanent market intermediary, or work in a way that Elola would become dependent on their support. The planned second phase of the project builds on this position by strengthening Elola's own potential role in training the small dairy farmers in its supply chain and building their capacity.

With the work undertaken in developing veterinary services, SDA has ensured that financial support is small (on average 1.6 million Armenian dram – approximately US\$ 5,300 investment in each vet point), time-bound and therefore finite. SDA has minimised costs, ensuring that recurrent costs (e.g. office rental) are minimal and remuneration is at local levels and not inflated by urban wages and higher wage-levels often found with development programmes.

In both cases, SDA has maximised local ownership and involvement and ensured that beneficiaries recognise that the funding and technical support is limited. SDA has therefore made sustainability central to its intervention strategy and day-to-day operations.

In order to achieve this, SDA had adopted what it calls a 'relationship approach', whereby much of its activity revolves around building a supportive and facilitative relationship with key market players, rather than a funding or more intensive formal capacity building relationship. SDA regularly visits the rural farming communities to discuss constraints and problems, but aims to assist communities to identify and resolve problems by themselves rather than bringing in solutions from outside. As such the SDA intervention is characterised by flexibility in the way in which self-help groups and RMFs operate, and in the way that farmers sell milk. This is seen as essential not only because it strengthens independence of the farmer groups, but also because the problems and opportunities of each village vary markedly. For example, even villages within a few kilometres of each other vary in their animal husbandry practices. For example one

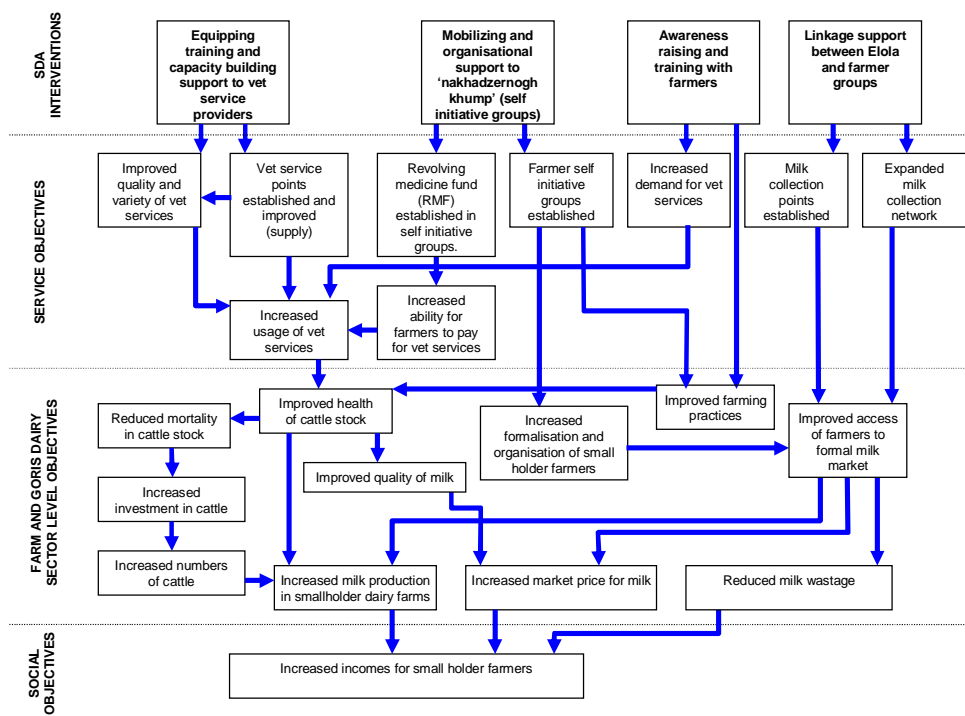
village maintains their animals in cattle sheds throughout the year while another does not have cattle sheds and moves the animals to alpine pastures in summer. In such an environment, flexibility is essential since solutions to problems of one village may not be valid for those of another.

6. Results

The SDA intervention in Goris has completed its first phase and has been operating in 9 locations involving 12 rural villages. While the project remains relatively young, there are clear indications and proof of impact from the project.

The ultimate goal of the project is at the social level with increased household income and employment opportunities in rural communities. To achieve this, SDA is working to create sustainable change at the service and dairy farm/enterprise levels as illustrated in the project impact logic (figure 5). This impact logic explains the changes which SDA was aiming to achieve through its interventions. An impact study based on this impact logic was undertaken in September 2008 to understand and quantify the project's impact. This explored impact at the service and farm/dairy sector levels:

Figure 6: Impact logic for phase 1 of the SDA intervention in Goris



6.1 Impacts of the project at the service level

Demand and supply of vet services

- 9 vet service points have been established that serve 2,273 households that maintain dairy cattle. All of these service points are now running independent of SDA's technical and financial support. The five vet points where support was stopped first in early 2008 were operating at 20% profit by the end of their first year in operation. There are also signs that these vet points are diversifying services (e.g. including animal dipping and apiary) in response to farmer demand and are increasingly demanding support to include artificial insemination in their services.

- The Revolving Medicine Fund has been established in the 9 vet points with farmers paying for 1,323 dairy cows, 1,076 other cattle and 2,432 sheep and goats. In total 4,831 animals have therefore been covered under the RMF.
- Informal, poor quality and extremely erratic vet services have therefore been replaced with vet points which farmers can call on when required. The number of farmers using vet services in the project area as well as the number of services delivered to farmers has as a result increased over threefold (330 to 340% increase) during the project.

Access to the formal milk market

- Elola has expanded its milk collection from 5 to 12 villages ensuring a formal market for milk for around 2,000 farmers.

6.2 Impacts at the farm and dairy sector levels

- 62% of surveyed farmers perceive that the health of their livestock has significantly improved as a result of improved access to vet services.
- Mortality in cattle has significantly reduced. In all the vet point areas, mortality in cattle had reduced to one fifth of what it had previously been. In the longest established vet points, mortality was down to one eighth of what it had been before the project. This reduction in mortality was also reflected in other livestock (goats and sheep).
- The reduced mortality, combined with the increased access to formal milk markets has resulted in farmers having greater incentives to invest in and keep more cattle. The numbers of cattle in the project area have increased by 218 head (an overall 5.3% increase).
- In total milk production has increased by 14%. 9% of this increase is as a result of improved cattle health and therefore increased productivity, and 5% as a result of increased numbers of cattle.
- In addition to increased productivity, farmers have also realised higher prices for milk as a result of improved milk quality. In 2007, this amounted to US\$15,000 in quality premiums (an average of US\$46 per farmer) but is likely to rise further in 2008.

6.3 Impact of dairy at household level

Livestock and dairy are the largest contributors to rural household income in many communities in the Goris area. A study undertaken by SDA in late 2008 indicated that on average 59% of all household income was derived through agriculture and 40% of this was from dairy (the sale of milk cheese and butter). Almost one quarter of all household income was derived from dairy – second only to income generated from meat and poultry (12%). Increasing incomes from dairy therefore has a substantial impact on overall household levels.

The greatest impact of the SDA intervention was undoubtedly in changing dairy from being a commodity that was informally bartered, or at best infrequently sold to occasional traders, to a commodity that was purchased by a formal buyer on a consistent basis. A retrospective analysis of income to farmers, before and after links to Elola were established (undertaken by SDA in 2008), highlight this. Before formal market channels were opened to rural communities an estimated 80% of processed milk was bartered and only 20% was sold for cash. Even more significantly, only 8% of milk produced was processed with the remaining 92% either being used by the household or going to waste. This high level of wastage was a significant disincentive to investment in cattle and dairy. Market access was therefore the major contributor to improved household income.

In total, the intervention has resulted in around 900 dairy households increasing their annual income by US\$314. This is a significant increase for rural households in a country with GNI (Gross National Income) per capita of US\$2,640⁴ and rural incomes average US\$80 a month⁵.

The impact of a sustainable M4P intervention is cumulative in nature. Unlike non-sustainable interventions, impacts for a successful M4P intervention do not stop when external financing stops but are ongoing. The impact identified in this early study is therefore indicative of the ongoing and cumulative impact that is likely to result from the improvement in vet service delivery and ongoing access to markets.

6.4 The gender dimension of impact

It is important that development interventions understand their impact on gender and the power relationships with communities and households. A study of roles in dairy undertaken in 2008 highlight clearly defined gender roles in dairy. Men almost always undertake the physical work of maintaining animal sheds, cleaning and disinfecting, animal feeding and care and taking animals to pasture. Women on the other hand seldom take on these roles in normal circumstances but usually do all the milk processing to cheese and most of the milking.

The intervention has shifted dairy away from cheese production within communities towards the sale of fresh milk which has reduced women's involvement in dairy. This reduction is however perceived by women and men as being positive, lightening the work load on women and providing them with more time for other household tasks and social activities.

While men mostly undertake the selling of milk, the income derived from milk appears to be mostly viewed as household income which men and women decide jointly how to spend. Increasing the sale of fresh milk, while reducing women's involvement in commercial dairy, does not appear to have disempowered women economically or within their household.

7. Lessons and challenges

While the SDA work on dairy in Goris is relatively young, it provides a number of useful insights and practical lessons for M4P interventions.

7.1 Key components of the M4P approach and how to practically implement them

The SDA intervention clearly highlights the importance of understanding market systems, focusing on sustainability, working to address underlying causes of weaknesses and acting as a facilitator as means of achieving systemic change in markets relevant to the poor and disadvantaged. The intervention also highlights how these means can be put into practice within a relatively small project:

- ***Developing an understanding of markets through engagement rather than formal research:*** The SDA path to understanding market systems was not based on formal research undertaken by experienced researchers or supply chain analysts. SDA developed their understanding of the market through active engagement with market

⁴ World Bank, 2007.

⁵ Integrated Living Conditions Survey of Households 2006, National Statistical Service of the Republic of Armenia.

actors – through consultancy and pilot projects. This was possible because SDA was an existing NGO that was already close to the market before the project was initiated.

- **Identifying and understanding market constraints:** Market constraints are invariably complex, and there is seldom a single entry point or solution that can result in growth and improved inclusion of the poor. In the Goris dairy market system, rural dairy farmers faced an array of often inter-related problems. SDA recognised that developing vet services would not in itself result in significant market change without building the core of the market and linking processors to dairy farmers.
- **The importance of strategic planning and phasing of interventions:** While market systems are constrained by many weaknesses, it is often more appropriate to phase interventions rather than try to address many constraints concurrently. Despite the need and demand for artificial insemination services, for example, it was more effective for SDA to focus on establishing vet services as general service units before introducing AI services. Similarly, work to enhance embedded services provided by Elola is more appropriately planned in the second phase of the project – once linkages with rural communities have been established and are functioning effectively.

7.2 The characteristics of a successful facilitator

The activities of SDA also highlight many of the characteristics of a successful facilitator:

- **Establishing clear and coherent exit strategies at the outset of interventions:** Clearly defining the exit plan and communicating this clearly to partners, such as farmers and Elola, contributed to SDA successfully managing the facilitation role.
- **Continual focus on sustainability:** Throughout the intervention, SDA maintained a strong focus on sustainability and avoided becoming a permanent market player itself (e.g. by providing services directly), thus avoiding increased stakeholder dependency on external support as often observed with conventional development programmes.
- **Building local ownership by maximising local control and decision making:** SDA also endeavoured to avoid imposing pre-determined models and solutions and maximised problem-solving and decision-making among their partners. This effectively built ownership while also responding to the need to adapt approaches according to various differences between communities and localities.
- **A light touch to intervention:** Where possible, input provided by SDA was limited to technical support and mentoring. Where finance was provided, this was kept to a minimum in both the overall amount and the timeframe for funding.

The role of PPP in building markets

The SDA intervention also highlights the effective role of PPPs in opening up and building markets. At the core of an effective PPP is the identification of the overlap between public and private agendas and a clear win-win situation for the private and public entities in the partnership. PPPs have a clear role in developing market systems - but only as part of a wider array of activities that address underlying systemic constraints. PPPs are therefore not a stand-alone approach to market development but a tool that can be applied to solve specific market constraints.

Building weak markets

In many ways, the rural Armenian dairy sector was an example of a weak market. This weakness was a result of the collapse of a strong centralised and state controlled market which, when it collapsed, left a vacuum in its wake. SDA's activities worked to build market dynamics within a weak market and tested two mechanisms for opening rural and service markets:

- a) **Clustering as an approach to opening up markets to remote rural communities:** Strategically planning the geographic focus of projects that work with rural communities can be an effective approach to overcoming the problem of economy of scale in small rural communities. By clustering their support to farming communities, SDA could make smaller communities more attractive to commercial buyers by creating viable milk collection routes.
- b) **'Revolving fund' as a 'soft' transition towards for-fee services:** Establishing for-fee vet services without addressing the lack of culture to pay for vet services would most likely have been met with resistance. The SDA approach of establishing a revolving fund to pay for vet services provided confidence among the vets as well as providing an affordable mechanism for farmers to pay for vet services.

The poverty focus

The SDA activities also provide a clear and instructive illustration of the poverty dimension of the M4P approach. The development of the dairy sector itself was not the primary objective of this intervention. The underlying focus of the intervention was to ensure that the rural poor, and particularly those in the smallest communities, were not marginalised from the emerging dairy processing industry. While larger villages that were close to main roads would benefit from the growing industry without public or donor intervention, smaller and remote rural communities were less likely to benefit. The key benefit of the SDA intervention was therefore in ensuring the rural poor's inclusion in the growing dairy industry in Armenia.

7.3 The future: Planned interventions in dairy

SDA is embarking on a second phase of activities beginning in late 2008. These activities will build on the work undertaken in phase one and further widen it. Vet service points will be supported to expand their services to the provision of artificial insemination (AI). Elola's link to farmers will potentially be enhanced by supporting embedded services such as training to farmers from whom they source fresh milk. In addition, to these 'deepening' activities, SDA will also begin to address the lack of access to finance for farmers:

Dairy farmers lack the finances to invest in and significantly expand their dairy activities. Improved milking equipment, milk storage equipment, cattle sheds and new livestock are capital intensive investments which return investment only over a longer period of time and therefore require a longer grace period for loan repayment. Rural households in Armenia, particularly the poorest, lack financial means and require access to affordable finance to invest in their business activities.

Whereas many rural development projects in Armenia resort to grant assistance for such investments, the SDA approach is to facilitate the removal of access barriers that rural dairy farmers face in accessing finance. An initial consultation with key banks held in mid 2008, highlighted the lack of collateral and reliable credit references to be the key constraint to banks providing loans to farmers. Nevertheless, Armenian banks are increasingly expanding into rural and more remote towns and in so doing are seeking new but reliable customers. References from Elola as a recognised formal milk buyer therefore have the potential to increase bank confidence in rural farmers and therefore increase their willingness to provide access to funds. As a facilitator, SDA is therefore embarking on a process of supporting the development of an improved relationship between banks, Elola and farmers.

Strategic planning and phasing of activities

The planned activities in phase two of SDA's project highlights the importance of a strategic approach to project planning and phasing. Both access to financial services and AI are critical constraints to the growth of dairy farming in rural Armenia.

Furthermore, AI has the potential to measurably increase milk yields by improving the genetic quality of cattle stocks and introducing genes of higher milk-yielding cattle to the Armenian cattle stock. Milk yields from cattle in the Goris area were lifted from 1850 to 2100 kg per year during the first phase of the project as a result of improved animal healthcare, but improved cattle stocks can yield 3300 to 4000 kg a year - a two-fold increase. It is therefore tempting to launch into such activities at the project outset as they can appear to considerably increase potential impact and outcomes.

The strategy of SDA though, was to phase these activities. Vet services and access to formal markets were perceived as the foundation blocks for improving the dairy sector. Access to finance and AI was planned as a second tier of activities built on these foundations. For example, AI requires locally based service providers that are in contact with and trusted by farmers and understand cattle and dairy. AI also requires significant awareness raising and promotion. Vets are in a strong position to both implement the service and promote its usage, and establishing effectively operating vet points therefore significantly improves the potential success of AI services. Similarly, financial institutions are unlikely to be interested in lending to farmers who sell milk informally, but would prefer lending to those that have a guaranteed market and, perhaps more importantly, a proven track record from a recognised milk buyer.

Strategic planning and phasing of activities is therefore important; and for a small organisation with limited human and technical resources it is essential for successful M4P interventions.