

Performance of dairy services agri-enterprises

A case of youth-led service provider enterprises (SPE)

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ADIAS



The growth of the Kenyan dairy sector has triggered smallholders' demand for various external inputs and services in order to meet the increasing demand for more and better quality milk, delivered at low costs and with sustainable practices (van der Lee *et al.*, 2016). As a result, many business opportunities have emerged along the dairy value chain related to extension and advisory services and inputs delivery, attracting entrepreneurs. Increasingly, the youth who are seeking to venture into various agri-businesses either individually or as groups are pursuing these opportunities (Kilelu *et al.*, 2016; Linguli and Namusonge, 2015; MoALF, 2017).

The Service Provider Enterprise (SPE) is an innovative youth-led business model in which young men and women form groups to offer commercial support services to entrepreneurial smallholders and medium scale farmers in the vibrant Kenyan dairy value chain. **Figure 1** summarises the main building blocks of the SPE model. The value proposition for SPEs is to offer silage making services to dairy farmers, complimented with advisory support on feeding and dairy cow management, in order to improve productivity. The model was initiated as a pilot in 2010 with the support of SNV's core subsidy funded dairy program (SNV, 2013). Interested recruits received short-term practical training on technical aspects of silage making and some areas of dairy cow management.

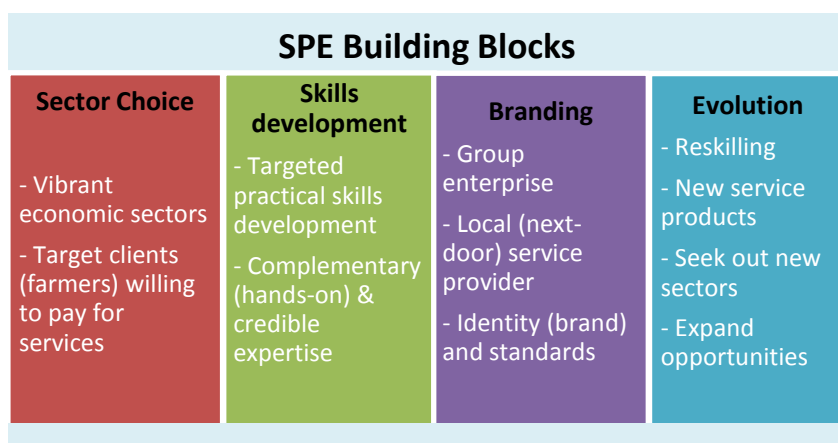


FIGURE 1: Building blocks of SPE as a dynamic model (Source: Maina, 2011)

The pilot started with four SPEs located in Nyandarua, Nyeri and Embu Counties. These four SPEs later formed a limited company – SPEN (Service Provider Enterprise Networks) Ltd. The group in Embu suffered leadership challenges and did not survive past the formation phase. The SPEs are linked to Dairy Farmer Co-operative Societies (DFCS) to provide services to their members and suppliers (**Table 1**) to help address feed-related challenges.

3R Kenya Project

The 3R Kenya (Resilient, Robust, Reliable. — from Aid to Trade) project is a learning initiative supported under the Agriculture and Food and Nutrition Security (FNS) program of the Embassy of the Kingdom of the Netherlands. 3R Kenya seeks to assess evidence and lessons from FNS and other related programmes that support competitive, market-led models in spurring agricultural development. It focuses on the aquaculture, dairy and horticulture sectors. 3R Kenya is executed at a time when Dutch government's bilateral relations in Kenya are transitioning from a focus on Aid to Trade to enhance the development of agri-food sectors. Through evidence generation and stakeholder dialogue, 3R seeks to contribute to an understanding of effective conditions for sustainable inclusive trade for transforming resilient, robust and reliable agri food sectors.

3Rs:

Resilient: dynamic and adaptive capacities that enable agents and systems to adequately respond to changing circumstances

Robust: systematic interactions between agents that enable them to adjust to uncertainties within the boundaries of their initial configuration

Reliable: the ability of a system or component to perform its functions under changing conditions for a specified period of time, to create opportunities for (inter)national trade.

ADIAS Project

The Assessing and supporting Dairy Input & Advisory Service Systems (ADIAS) project investigates the changing market linkages of commercializing dairy farmers in Ethiopia and Kenya.

Since 2012, the SPE model has been scaled up through SNV's Kenya Market-led Dairy Program (KMDP) Phases I and II. This has resulted in formation of 29 SPEs spread across six Counties: 21 in Meru, 3 in Nyandarua; 2 in Baringo and 1 each in Nyeri; Nakuru and Uasin Gishu.

EXPLORING THE PERFORMANCE OF SPEs

This brief presents a study carried out by the 3R in collaboration with ADIAS project to assess the performance of SPEs, in order to understand the extent to which the model offers business options for youth in agriculture. This assessment addresses technical (i.e. soundness, quality and effectiveness of service delivery) and entrepreneurial performance (i.e. management, marketing and income generation).

Eight SPEs were purposively selected for the study (see table 1). Data was collected using focus group discussions (FGD) with sampled farmers and structured interviews with SPE representatives and managers of DFCSs and the umbrella Meru Central Dairy Cooperative Union (MDU).

TABLE 1: Details of DFCS linked to selected SPEs in this study

County	SPE		Related DFCS	
	Group name & active members		Active members in 2016	
Baringo	Bokimu	3	Mumberes	1093
	IDM	4	Kiplombe Farmers	1500
Meru	Drip	6	Nkuene	1270
	Bidii	4	Mbwinjeru Ariithi	340
	DASPE	5	Naari	544
Nyandarua	Intertech	3	Nyala	8500
	Ngorika	4	New Ngorika	900
Nyeri	Unique	3	Kiunyu	80
Total	8	32	8	14227

Characterization of selected SPEs

As shown in Figure 2, the age of the sampled SPE members ranged from 18 to 60, with the majority (53%) falling in the youth bracket (18 - 35 years). Majority (59%) had attained a secondary school education and about 38% had continued with post-secondary training. It was also noted that 94% of the active SPEs members were male.

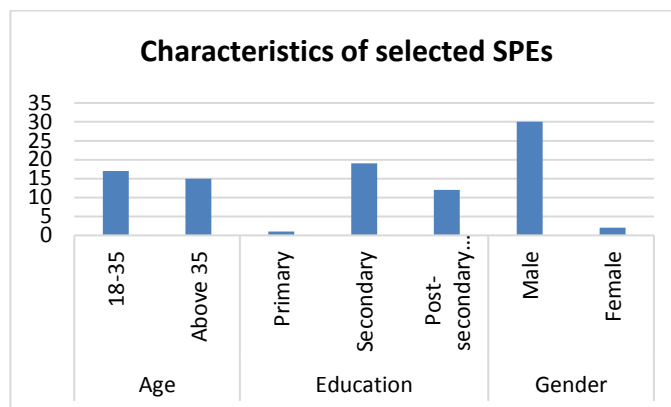


FIGURE 2: Characteristics of sampled SPE members (n = 32)

Types of services offered

Silage making was the initial value proposition for establishing SPEs. Most farmers in the study regions had not used silage before the SPEs and relied on traditional feeding practices. As Figure 3 shows, most SPEs also offered a range of other services. This includes fodder establishment, farmer training, inputs supply (e.g. forage seeds/cuttings; silage making material) and advisory services (e.g. on feed formulation and rations, calf rearing, record keeping). A few SPEs offered new and more specialized services such as biogas installation, design and construction of zero-grazing units and soil sampling.

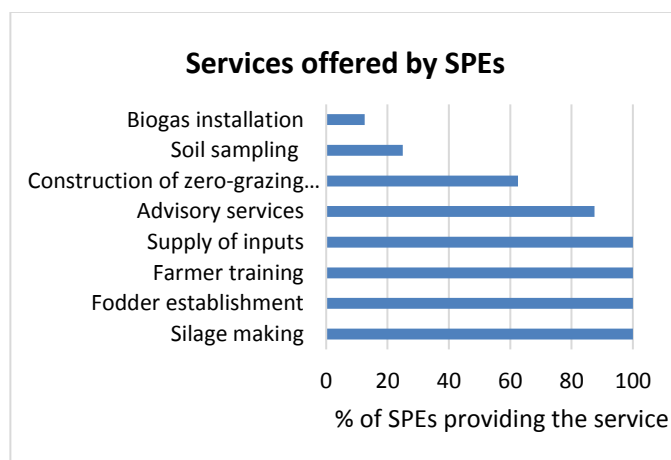


FIGURE 3: Service provision by SPEs (n = 8)

ASSESSING TECHNICAL PERFORMANCE OF SPEs

The study shows that in general SPE services have contributed positively to the dairy supply chain where they are operational. The eight SPEs made an estimated 11,268 tonnes of silage in 2016. As Figure 4 shows, two SPEs in Meru, i.e. Bidii and Drip SPEs, made the highest volumes of silage of about 3100 and 2900 tonnes respectively in 2016, most of which was maize silage.

The SPEN groups, Unique and Intertech made between 1500 and 1700 tonnes of silage. On average, farmers conserved between 0.3 and 66.2 tonnes of silage annually. Generally, farmers were satisfied with the SPEs because they made quality silage.

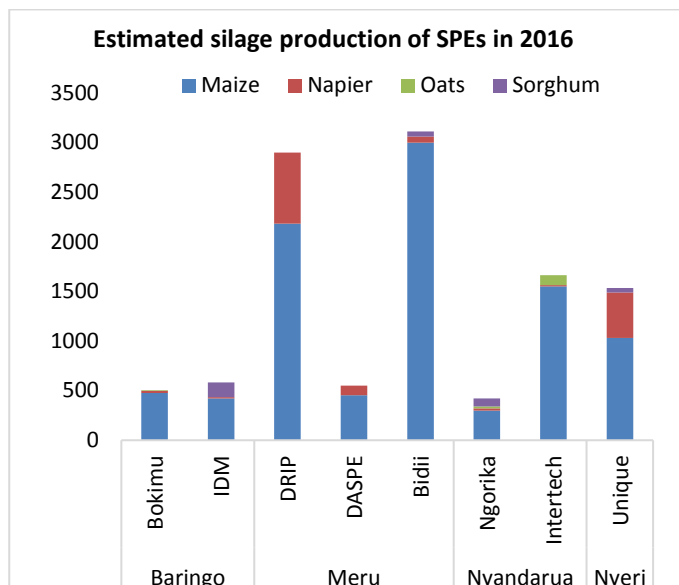


FIGURE 4: Silage production in 2016

Other benefits of SPE services that farmers mentioned include improved dairy cow management; better animal health and weight gain, reduced costs of buying feed and time saved from collecting feed outside the homestead. Construction of zero-grazing units was noted to reduce wastage of manure.

Effects of the SPE services on-farm and the supply chain

1. Farm level outcomes - more milk, more money

Farmers who sought SPE services reported some increase in productivity. In Meru, where most silage was made productivity was up to about 9.5 l/cow/day for Nkuene DFCS and 8 l/cow/day for Mbwinjeru Ariithi DFCS. This is in comparison with the average productivity of 5/cow/day in dairy producing regions in the county (MoALF, 2010). Farmers also reported reduced fluctuations in their milk volumes during the dry season. Farmers noted that silage contributed to this nominal increase. More effort is needed to enable higher productivity increases.

Farmers in these two DFCSs also generated a higher average daily income from milk sales to the DFCSs as compared to those in other DFCSs (i.e. KES 1779 and KES 804 respectively). Farmers from Mumberes DFCS received the lowest milk income of about KES 263.50 per day and was among the areas where the SPE made the lowest volume of silage. However, more analysis is needed to understand actual gross-margins.

2. Effects of SPE support on the supply chain

Increased production at farm level resulted in an increase in the volume of milk collected by DFCSs. Where more silage was produced, e.g. Meru DFCSs, the managers also indicated that their daily milk collection was stabilising in all seasons. Furthermore, the volume of milk was within their set targeted range (Figure 5). This indicated that SPE services had a positive effect along the dairy value chain.

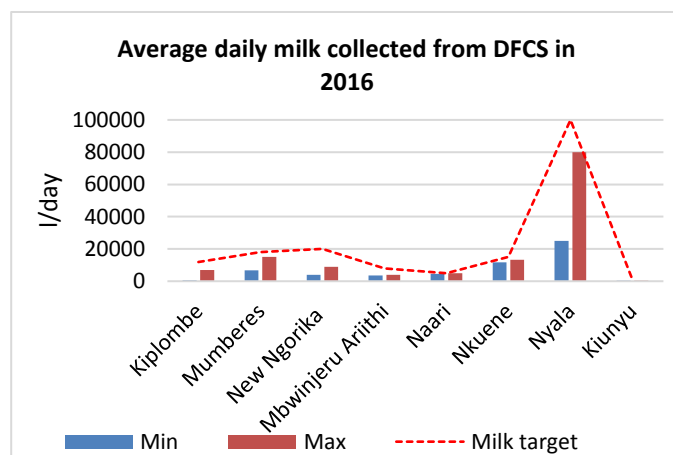


FIGURE 5: Milk collected by DFCSs in 2016

Secondary data of the DFCS annual milk intake showed an overall increase in volumes collected across all DFCSs from 2012-2015 except Kiplombe DFCS. MDCU also observed that there was a difference in the volume of milk collected from DFCSs that worked with SPEs. Whilst there may be many factors that contributed to more milk intake including increased membership and supplier loyalty, DFCS representatives pointed to the fact that SPE services contributed positively to the increase in their milk collection.

Challenges limiting SPE technical performance

- Equipment problems (breakages, limited access and poor quality, e.g. for compacting)
- Poor quality of silage making material (e.g. polythene).
- Poor quality/inaccessible fodder seeds for forage establishment
- Farmers uncovering silage before it is ready
- Drought hence fewer silage making opportunities.

Assessing the entrepreneurial performance of SPEs

1. Client-reach and business operation

SPEs have been able to reach out to many farmers, although most of the interactions seemed to be for promotional and demonstration purpose. The sampled SPEs provided silage making services to about 950 farmers in 2016. This is

equivalent to about 7 % of total active DFCS farmers, the main client base for the SPEs. This shows that SPEs have not saturated their market; pointing to a need to build their capacity to market their services.

In order to grow their client base, the SPEs marketed their services through various channels. These approaches included farming fairs and dairy field days (exhibitions) organized by dairy cooperatives and processors. However, SPEs mostly acquired new assignments through word-of-mouth referral.

Most SPE members offered services individually rather than as a group, although they use the SPE name to acquire assignments. The individual option was preferred because of efficiency (time-saving on decision making) and cost reduction for clients in terms of transportation and labour charges, especially in cases of small silage quantities.

2. Investments of SPEs

Some of the SPEs have made various necessary investments in enhancing their business. These include the purchase of new and efficient silage chopping machinery. Bidii, Unique and Intertech invested in choppers worth between Ksh. 100000 and 165000 and noted that this resulted in more silage making opportunities. Others indicated that high cost of machinery prevented them from investing.

3. Income generation of SPEs

SPE silage making fees ranged between KES 250 and KES 1,000 per tonne, depending on whether the SPEs paid for labour and provided choppers. DASPE charged a daily rate of KES 2, 000 irrespective of the amount of silage made. Fodder establishment and baling was charged per acre. Farmer training was mostly for promotional purposes without charge, or paid through a third party such as SNV project support.

Silage making services made up the larger portion of SPEs' income. The results show that Unique members made the highest monthly income from silage services averaging about KES 46,500 in 2016. DRIP made the lowest monthly income of about KES 5,300 in 2016.

However, in this study, volumes of silage made did not always correlate positively to income, taking other factors such as service charges and frequency of service delivery into account.

Beyond silage making, another revenue stream for SPEs was the sale of inputs, mainly fodder seeds. In 2016, Intertech SPE made the highest annual income (KES 176,500) as a group from sales of about 552 Kilograms of various types of fodder seeds. This SPE established strategic networks with multiple fodder seeds suppliers and multipliers, and also has a sizeable customer base of repeat customers.

Business challenges limiting SPE performance

- The main business challenge of SPEs is farmer refusal/delay in payment and sometimes limited financial capacity of farmers to pay for services
- Difficulty in determining appropriate costing or pricing of services, to ensure fair and adequate remuneration from the services
- Slow farmer adoption of promoted technologies and practices
- Poor planning by farmers when requesting for services resulting in waste of time and other resources
- Costs of promoting and marketing services (e.g. doing many free demonstrations)
- Limited financing to acquire appropriate and quality machinery
- High work load and unavailability of casual labour, especially during peak (silage making) season
- After practical exposure, farmers start making silage by themselves; this results in fewer repeat customers for SPEs.

DISCUSSION: REFLECTIONS ON THE SPE MODEL

1. Enabling entry of youth into agribusiness

With limited opportunities for employment, the model has shown the potential for entry of private service providers in rural areas, especially youth who can establish agro-enterprises and be self-employed. Through practical training, SPEs offered livelihood opportunities to rural youth who have completed high-school education. Such vocational training is argued to be important to enable fast entry for youth into agribusiness (FAO and IFAD, 2014). Thus, involving the youth through such agribusiness ventures is part of an inclusive development approach in sub-Saharan African countries (Filmer *et al.* 2014). But what is needed is to understand if such ventures result in viable and thriving business ventures offering sustainable incomes.

2. Viability of the SPE model

The study has shown that silage making, supplemented with bundles of other services, contributed to increased productivity and reduced the seasonality in milk production. The bundling of such services offers the potential to make the SPE a viable model in private service delivery that has market demand and income generation opportunities (Poulton *et al.* 2010). However, most SPEs have not attained the full potential performance, due to seasonality of business and low market penetration. Where SPEs work with DFCSs, their relations could be strengthened to stimulate business opportunities for a robust supply chain (Kilelu *et al.*, 2016).

This links to the complementarity of SPEs providing a strong value proposition in relation to existing extension services operating in the DFCS. Private service delivery has potential to fill in gaps in extension support and to enhance the cost-effectiveness and quality of services (Birner *et al.*, 2009). However, market development remains a challenge in private service delivery to smallholders. While the dairy sector is vibrant enough to attract private service providers, SPEs will require further entrepreneurial support to stimulate demand and reach more entrepreneurial dairy farmers that are willing to pay for their various services.

3. SPE propagation

The growth potential of SPEs is related to the issue of propagation of the model. To reach a larger client base and offer quality and timely services, scaling out of the model is necessary. The results show that current number of SPEs are being stretched during peak silage making season, and farmers not being able to get services on demand. Propagation of the model will need to take into account the building blocks of the model mentioned in Figure 1 (Maina, 2011) and address the various challenges that have been highlighted in this study.

4. Drop-out and members mobility

Comparing the initial recruitment of potential SPE members with those that remained active, the drop-out rate is approximately 57%. This attrition can be linked to the seasonality of the business and the challenge of reaching their potential in relation to serving more clients. As Lunguli and Namusonge (2015) show, there is generally a high failure rate of youth enterprises at the onset owing to market limitations. However, only one out of 30 groups stopped, and SPEs stabilized at 3-5 members, which seems to be an optimal size. Some of the members left the SPE and moved into employment, for example in the extension teams of the DFCS or in the county livestock office. This can be seen as benefits of the technical and leadership skills acquired in the SPEs. Nevertheless, the recruitment process needs to consider factors that can stem the high drop-out rates and mobility. As Mgumia (2017) has argued, there is a need to understand people's aspirations in programme-induced entrepreneurship models, especially in relation to youth.

5. SPEs and gender inclusivity

Results show that few women remained active after recruitment in SPEs. This model has therefore been more

appealing and beneficial to young men than to young women. The reasons why young women are not as engaged in the SPEs, including at recruitment, or in staying longer in the group business could be linked to many factors. This points to the need for a gendered analysis and approach to the issue of youth and agriculture, paying to attention on how best to engage women to enable equitable participation and opportunities in agri-enterprise (Heinrich Böll Stiftung, 2015).

Recommendations for development and public agencies

- A balance is needed between vocational/technical skills and entrepreneurial skills training when establishing SPEs, in order for the SPEs to orient themselves toward agri-businesses from the onset
- To further entrench the SPE model, external support through business mentorship/coaching is required; this support will help SPEs to perfect their technical and entrepreneurial skills, including marketing skills
- Public investment is needed in facilitation of skill acquisition and recruitment of SPEs, to help transform the dairy sector for the better
- Provision of affordable start-up capital is crucial to the success of this model; this will enable SPEs to make investments in equipment that is needed for efficient and effective service delivery

The DFCSs should consider to embed SPEs in their business development plans, as being complementary to or part of their extension system, to enhance fodder access of members to enhance effects on farms and supply chain.



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The brief is a summary of a more comprehensive research report available at <http://www.3r-kenya.org/>

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