
# Assessment of the Quality Based Milk Payment System pilot supported by TIDE in Mbarara milkshed, Uganda

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Annabelle Daburon[1] and Asaah Ndambi[2]

1 Wageningen Centre for Development Innovation, Wageningen University & Research

2 Wageningen Livestock Research, Wageningen University & Research

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# List of abbreviations and acronyms

| | |
|---|---|
| DDA | Dairy Development Authority |
| LS | Lakeside |
| MCC | Milk Collection Centre |
| PD | Pearl Dairy |
| QBMPS | Quality Based Milk Payment System |
| SNV | Stichting Nederlandse Vrijwilligers (Netherlands Development Organisation) |
| SOP | Standard Operating Procedures |
| ST | Sanatos |
| TIDE | The Inclusive Dairy Enterprise |
| UCCCU | Uganda Crane Creameries Cooperative Union |
| UNBS | Uganda National Bureau Of Standards |
| WCDI | Wageningen Centre for Development Innovation, Wageningen University & Research |
| WLR | Wageningen Livestock Research |
| WUR | Wageningen University & Research |

# Summary

A Quality Based Milk Payment System (QBMPS) was piloted from 2016 in Mbarara district of Uganda, as part of The Inclusive Dairy Enterprise (TIDE) project by the Netherlands Development Organisation (SNV), in partnership with the Ugandan Dairy Development Authority (DDA). This pilot aimed at improving the quality of milk sourced by three processors: Pearl (large scale), Lakeside (medium scale) and Sanatos (small scale). This study assesses the successes and challenges faced by the pilot project and also provides recommendations for up-scaling of the QBMPS in Uganda. It was conducted through a review of project documents, interviews with key stakeholders and a workshop organised for stakeholders including the use of the scaling scan tool of PPP (Private-Public partnership) lab.

The project attained several successes including an improvement of the quality of milk marketed within the chains involved. Besides quality improvement, the involved suppliers benefited from bonus payments, increased milk volumes and an increased attractiveness in the market. The collaboration within the steering committee of the project was highly appreciated by its members. In addition, by co-leading the pilot and conducting the ring testing, DDA gained recognition and strengthened its position as an arbitrator in the dairy sector.

Regarding challenges faced, the initiation of the quality assessment system appeared challenging in regards to the sourcing, operation, maintenance, calibration of appropriate equipment. The Milk collection Centres (MCCs) took important risks (through investments required to join the QBMPS) and were challenged by a drop-out of farmers at an early stage of the project leading to reduced volumes of milk collected. Strong power asymmetries were noticed in the value chain as a challenge to the sustainability of the QBMPS and collaboration between partners. This was worsened by lack of mechanisms to address grievances, insufficient recording keeping at MCCs and farmer levels, and the absence of a reliable and user friendly M&E system along the value chain. It can explain for example the irregular bonus payment to MCCs despite their qualification. Individualised bonus payment to farmers was not practiced by all involved MCCs though this is intended for the later stages of the QBMPS.
Looking at the next steps, it was seen that the various stakeholders are generally satisfied with the pilot results and are willing to continue, indicating a great achievement of the pilot, considering its short duration. However, their views on the continuation of the QBMPS differed: the large processor (PD) succeeded to develop the QBMPS within its sourcing network and is able to continue the QBMPS with its own resources. For medium and small scale processors, due to their limited capacity, a sustainable business model assuring regular bonus payments is yet to be found.

As recommendations regarding the future roles, 1. **SNV** needs to assure a smooth transition towards autonomy of the QBMPS after the end of a phase 2. **DDA** will have to regulate the scaling-up of the QBMPS by strengthening its role as an arbitrator and by organising and facilitating activities between stakeholders of the QBMPS. Project support should be tailored to stakeholders' needs. For example, the large processor be supported less, compared to the medium and small scale processors. 3. **UCCCU** will have to clarify its roles and responsibility in the QBMPS. The organisation is foreseen as a strong support for coop interests but will have to invest in order to be impactful during the upscaling phase.

Several activities appeared urgent for the next steps of the QBMPS; putting in place a mechanism to address grievances, facilitation of collaboration among the QBMPS stakeholders (among similar organisations, along each value chains, combining both (platforms)? while up-scaling, exploration of opportunities to pool extension and ring testing services privately financed and regulated by DDA, development of a tool to assess MCCs abilities to join the QBMPS prior to them joining. Finally, for a smooth running of the QBMPS, all partners need to consider raising consumer awareness, deciding on appropriate quality and safety parameters to include and making an business case by providing incentives to all chain actors including individualised bonus payments to farmers.

# 1 Pilot and assessment background

- How to ensure the individual milk quality bonus payment?
- Can a business case be developed from the QBMPS at the national market and how can consumers awareness be raised?
- Will the current milk quality standards be sustainable for all actors over the years? Will safety parameters (antibiotic residues, aflatoxins, etc.) become more important for consideration in future?
- What about the indirect impact of the system on: other dairy actors? Women? Nutrition security (high quality milk is channelled outside the milk shed)?

The Inclusive Dairy Enterprise (TIDE) project is a five year programme funded by the Embassy of the Kingdom of the Netherlands and implemented by SNV in Uganda. Among other activities, TIDE is supporting a pilot since 2016 to introduce a Quality Based Milk Payment System (QBMPS) in Southwest Uganda.

The QBMPS is one of the core activities of TIDE. The initial partners were:
- The Dairy Development Authority (DDA), the statutory body mandated by the government to provide development and regulatory services in the dairy sector, has been leading the pilot. The DDA is providing specific services (e.g. training, calibration, etc), for which the TIDE project is building its capacity as required. The specific needs are determined on a case-by-case basis, depending on the profile and progress of the QBMPS.
- Bles Dairies Consulting, a Dutch consulting company. As technical lead, they designed the pilot and provide regular monitoring and support services throughout the pilot.
- SNV Uganda, as implementer of the TIDE project, is facilitating the pilot.

The QBMPS was initially conceived to be implemented at large scale. A feasibility study conducted from January to July 2016 by Bles Dairies led to the decision to develop a pilot QBMPS first. Indeed a limited number of stakeholders from the milkshed were willing to embrace the QBMPS.

A steering committee was established to offer leadership to the QBMPS implementation processes and pathways. It functioned as decision making body on matters that affect the smooth running of the pilot, as well as to foster unity of purpose and coordination of activities. It was inaugurated at the start of the pilot. Members of the Steering Committee are DDA (regional office), 3 processors (Pearl Dairy, Lakeside Dairy, Sanatos joined in 2017), SNV/TIDE, Bles dairies, Uganda Crane Creameries Cooperative Union (UCCCU) and representatives of dairy cooperatives and SMEs.

Several key activities were conducted after the steering committee was formed:
- Capacity building of cooperative staff, farmers, DDA, UCCCU extension staff
- 15 Milk analysers were purchased (withheld for 6 months by customs) and distributed with training of the users and calibration of the devices
- Zero setting on milk quality parameters and equipment
- Ring testing of laboratory equipment
- Round of negotiations to reach an agreement on the standards and bonus payment
- First bonus payment started on May 18 with different uptake by processors

A review has been requested from Wageningen University & Research (WUR) by SNV-TIDE (October 2018) to assess whether QBMPS has now completed the piloting phase, and based on the successes and lessons learnt, whether and how it can be up-scaled.

More specifically the objectives were:

1. To determine whether the original objectives of the QBMPS pilot have been achieved;
2. To document the lessons learnt under the QBMPS pilot: with emphasis on the processes and the results;
3. To recommend the next steps for QBMPS in Southwest Uganda and nationally:
   - when and how should the pilot be officially closed as pilot?
   - what are the next steps after piloting? Is QBMPS ready for up-scaling or national adoption?
   - how should the next step look like?

This report summarise the findings of this assessment.

# 2 Methodology of data collection

## 2.1 Method and tools

A methodology combining a TIDE's documents review, interviews and a workshop with the pilot stakeholders was used to collect data to perform the QBMPS assessment.

Prior to the fieldwork (end November), a review of the project documents was conducted by the assessment team (WUR). It helped to get familiar with the Ugandan context, the QBMPS organisations, timeline and reported results.

From 26th to 30th of November the field work was done (Table 1). In total, 22 interviews were conducted with members of 12 organisations, all part of the pilot phase. These semi-structured interviews investigated: the perception of respondents on the pilot activities since it started, their rationale to join the pilot, the collaboration process, the benefits, challenges and learnings identified, opportunities and ideas for up-scaling.

To validate the findings and complete the assessment, a workshop was held on Friday 30th November 2018 (10h – 14h) in Lakeside dairy facilities. In total 13 participants were present during the entire workshop, representatives of the core stakeholders of the QBMPS pilot and from different organisations: DDA, SNV, Lakeside, Pearl Dairy, UCCCU, AgriTerra (support cooperative capacity building), Bles Dairies, two farmer cooperatives (Abesigana, Kyakabunga) and a non-cooperative MCC (Mtanoga).

During this workshop, the Scaling Scan tool of the PPP Lab (https://ppplab.org/2017/11/3223/) was used, adapted to the specific pilot requirements. Lessons learned and scalability of the QBMPS were assessed using an individual questionnaire covering 10 themes: *Technical solutions, Awareness and Demand, Business case, Chain development, Finance, Knowledge and Skills, Platform/Collaboration with other stakeholders, Monitoring and Learning, Leadership and Management, Support of Public agencies.* The key success factors and key ideas to scale-up were also collectively discussed using a participatory exercise.

***Figure 1*** *QBMPS workshop participants (30/11/2018)*

***Table 1*** *QBMPS field work schedule and interviews (26/11/2018 to 30/11/2018)*

| Date | Morning | Afternoon |
|---|---|---|
| Monday 26th Nov | WUR team arrival | TIDE team QBMPS presentation with DDA representative |
| Tuesday 27th Nov | Kashaka cooperative<br>Sanatos Foods | Lakeside<br>Bles Dairies |
| Wednesday 28th Nov | Abesigana cooperative<br>Rubaya Milk Collection Centre (MCC) | Pearl Dairy |
| Thursday 29th Nov | TIDE-SNV programme director<br>Kyakabunga cooperative<br>Mtanoga MCC | UCCCU and field facilitators |
| Friday 30th Nov | QBMPS workshop at Lake Side, with key stakeholders (9 am to 2pm) | |

## 2.2 Limitations of methodology of the QBMPS assessment

The assessment approach has several limitations which are explained below:

- The timing of the field assessment (1 week) was rather short, offering a limited possibility to cross-check information collected.
- Furthermore, not all relevant stakeholder were interviewed. For example, the assessment team did not meet several cooperatives and MCCs which were part of the pilot. Also due to time constraints, an indirect approach was used to determine farmers perceptions on the QBMPS. Indeed all the farmers met were also representatives of cooperatives. Thus because of their double role, their judgements as reflected by the assessment team might be biased and these should be interpreted with care.
- Similarly the scope of the assessment was very much focused on the core stakeholders of the pilot. Investigating the indirect effects of the pilot (MCCs not part of the pilot, local consumers, other processors of the milkshed...) would have been insightful to decide whether and how to scale-up the QBMPS.
- Quantitative data available and monitored by the QBMPS pilot were limited. Furthermore, the reliability of collected data was limited since there was a lack of transparency of some processors on the volumes declared through bonus payment (one of the 2 KPI monitored for the QBMPS).
- Besides the sampling and the limitation of the qualitative approach, the timing of the assessment in the pilot development was also challenging. Indeed the assessment was conducted at a very early stage of the QBMPS (bonus payment started in May 18 for one processor – Nov.18 for the other). Thus the system had not yet stabilised and rapid developments could occur after the assessment.

# 3 Results

## 3.1 Pilot achievement-Lessons learnt

### 3.1.1 Achievements and challenges for the different stakeholders involved in the QBMPS pilot

The different organisations involved in the pilot and their various roles and responsibilities are shown in Figure 2. We reviewed the main achievements of each type of stakeholder as well as their perspectives on their main challenges.

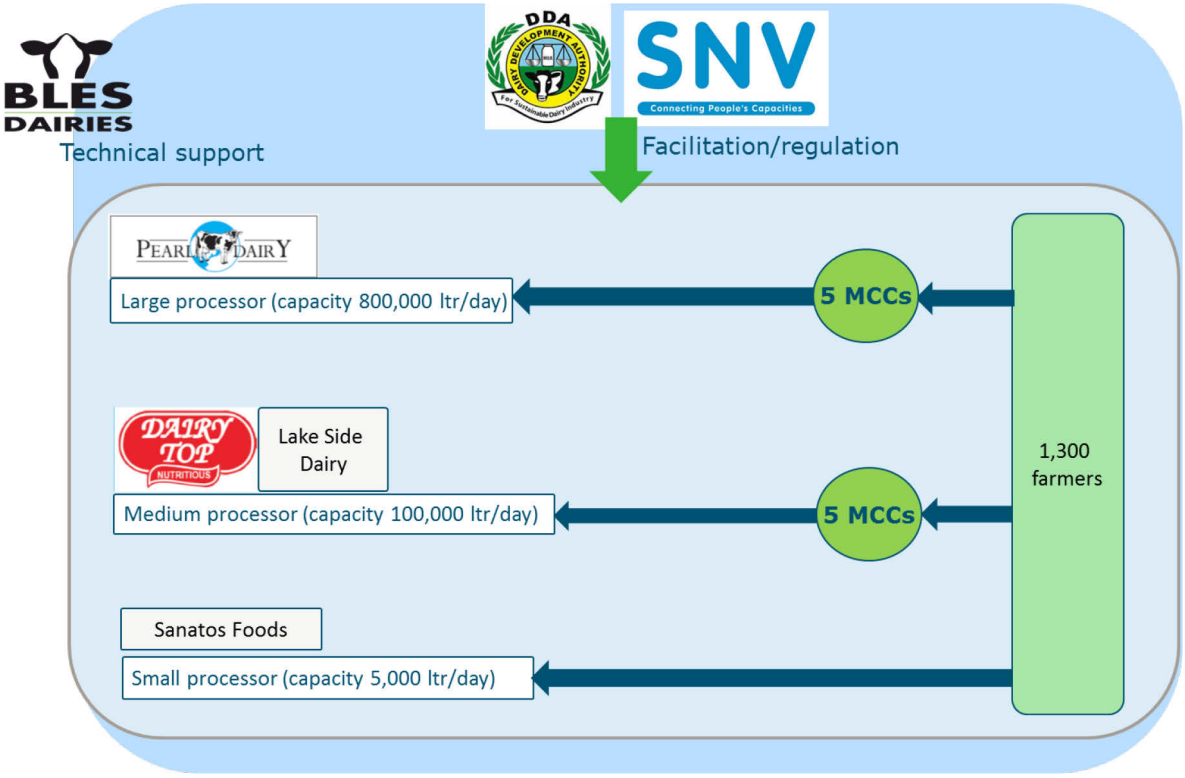


***Figure 2*** *Main stakeholders of the QBMPS pilot*

#### 3.1.1.1 Processors

Pearl Dairy (PD) and Lakeside (LS) each succeeded to convince 5 MCC of their suppliers (coop. and non-cooperative MCC) to join the pilot, despite the refusal of some of the MCCs initially selected. For Sanatos (ST), milk was supplied directly by farmers and no suppliers' representative was appointed. All the processors involved in the pilot acknowledged an improvement of the milk quality of their suppliers (the one part of the pilot) and a higher products yield. In terms of sourcing processes, several achievement were observed. During the QBMPS assessment, each processor delivered to its suppliers a goods received note (based on volume and quality parameters) for each delivery. Furthermore, to ensure good hygiene practices among their staff, Standard Operating Procedures (SOP) were displayed in various areas within the dairies.

The pilot succeeded to initiate a strong commitment of the processors to the QBMPS and collaboration between these competitors. Indeed, since there was no company in Uganda able to supply the QBMPS stakeholders with adapted laboratory equipment, processors arranged for the supply by themselves using their own social network in India. They also committed their enterprises to partially cover the costs of the equipment. In terms of collaboration, there was a big challenge in their ability to build and

strengthen trust with their suppliers (MCCs) in regards to a consistent and reliable milk testing and bonus payment system.
Indeed, all processors succeeded to pay a quality bonus at least once since they initiated the bonus payment. However their ability to sustain the bonus payment differed. PD was much regular compared to the LS or ST. Indeed several cooperatives mentioned difficulties for these two last processors to pay their dues to their suppliers. It considerably weakened the trust of those MCCs for their processors. The limited cash flow of LS was invoked to explain its difficulties to pay the bonus in time. DDA played a key role to minimize these challenges and foster trust by ensuring a reliable milk testing network as well as being a strong arbitrator among QBMPS engaged stakeholders. Such observations question the ability of processors managing smaller volumes to sustain the bonus payment in the current QBMPS setting. If the QBMPS business model seems clearly attractive for PD, it remains fragile for the two smaller processors and still to be established.

On the overall, processors express their satisfaction regarding the pilot. Building trust with their suppliers but also between the 3 processors member of the pilot is a major achievement of the pilot. Despite these successes, it appears that the business model of the QBMPS is not yet well established for the medium and small scale dairy processors. As for the large scale processor, the pilot was a success and a spin-off of the project is already being implemented, funded by the processors in order to create a strong extension service in the area (supported by Bles dairies consulting).

#### 3.1.1.2 MCC (Cooperative – Milk traders)

Feedbacks of MCCs are rather positive. All of them expressed the improvement of their milk quality (sourcing and marketing). At the end of the pilot, MCCs observed less skimming and less added water in their milk. MCC staff received numerous trainings explaining the milk improvement : milk quality testing, record keeping, milk handling, farm management... Consecutively, MCC practices changed. SOP's were embraced and displayed in some of the visited MCCs. The trained individuals in turn trained others (milk vendors, farmers and other cooperative). In addition, cooperative members also received various support from the UCCCU extension staff (supported by TIDE project). However MCCs mentioned their limited capacity to do so and to properly support their suppliers in improving their milk quality.
Besides the intense capacity building activity, the pilot succeeded to equip all participating MCCs with working laboratory equipment. Committed to the project success, MCCs co-funded these equipment with a support of their processors and of the TIDE project.
Thus milk quality was regularly tested using ekomilk when entering and leaving MCCs. A systematic milk testing was evoked by only few MCCs investigated. Only one of the MCC investigated was systematically delivering individual quality analysis. Several reasons can be considered: it challenges the trust of suppliers, cost of milk testing, time consuming tasks...To address this situation, further investigations to understand the difficult adoption of milk tests might be relevant in the future. Record keeping was also improved to some extent by the pilot and information on volume, milk quality and payment was recorded punctually as a hard copy in a note book or computer. Still a large improvement margin remains to ensure a systematic and homogeneous record keeping within MCCs.

Despite the overall positive impact on milk quality, it appeared challenging for the MCCs and their milk suppliers (farm as well as milk transporters/traders) to consistently ensure a high quality of milk supply along the year. The dry season supply being particularly sensitive, both in terms of milk quality and quantity. It can partially be explained within the MCCs by the limited compliance to the SOP's introduced by the project:

- MCCs had difficulties to ensure a regular maintenance and calibration of their laboratory equipment (improved during the project). Several reasons such has the limited skills of the MCC staff, the inputs/services availability and affordability of the laboratory maintenance can be invoked.
- The timing of milk collection remained irregular after the milking. The impact on milk quality being aggravated by extended collection duration during the high temperature period.
- The scale for weighing milk provided in the testing kit was not used. This objectives was not reached but it does not prevent the establishment of the payment of milk quality. The maximum capacity of the provided scale (40kg) appeared too small since it could not weigh a full milk can of 50 litres capacity. Furthermore, time consumption and painfulness of the task was evoked by MCCs managers to explain the absence of use of the scales. If not verbally expressed by those managers,

the common practice of introducing incertitude in the milk volume, to the benefit of the buyer, can also explain the underutilisation of the scale.

If during the assessment MCCs appeared to be satisfied with the QBMPS, early stages of the adoption were very challenging for these organisations. By adopting the QBMPS, MCCs initially lost part of their supply (volume and number of suppliers decreased). Indeed, the introduction of quality standards created tension within their sourcing network and cooperative members. This particular period is very sensitive and can considerably threaten a fragile MCC. As such a dedicated attention should be given to the selection process of MCCs joining a QBMPS (having the capacity to face the change and loose unsatisfied suppliers) and to support the MCC in managing this risks.
Another major risks evoked by MCCs is the delay or even non-payment of their due bonus despite the support of DDA and TIDE project. Indeed even if MCCs complied to quality standards, some processors (LS mainly) considerably delayed their bonus payment, applying a non-transparent bonus rate. It suggests the need of creating a conflict resolution mechanism, able to take into account the grievance of the stakeholders and to better balance the power asymmetries. The individual payment of the quality per supplier (farmer or supplier) is not achieved so far (except for the small processor collecting directly from farmers) and have been postponed to a second phase. This step requires a stable system and that the MCCs should be able to organise such a payment internally which is not yet the case. Even in the case of the small scale processor, since there was a limited traceability of the system and since the bonus payment was just implemented during the assessment, it is difficult to guarantee its proper and full implementation. By postponing the individual payment at farm level, the steering committee proved the efficiency of the adaptive management.

If the bonus payment was not always ensured by the processors, MCCs emphasized their increased attractiveness on the market. They strengthen their position towards their different customers (processor from the pilot and others marketing channels) and the other cooperatives. They mentioned an increased profit, mainly linked with an increase in their collected volume, bonus payment and their strengthened bargaining power allowing them to reach higher prices in other markets.

#### 3.1.1.3 Farmers

Except for the case of the small scale processor, where suppliers were directly benefitting from the bonus, bonus payment was made to the MCCs and not directly to individual farmers. Each MCC had to independently organise the investment and bonus distribution.
A great achievement of the pilot was its ability to raise the awareness of farmers on milk quality. On the overall, the milk quality supplied to MCCs improved, especially its composition parameters (fat and SNF), the decrease of water addition in the practice as well as the adoption of better farming practices in farm. If an improvement is observed, maintaining a high quality and volumes of milk along the year and especially during the dry season remained challenging as evoked previously.

The milk quality improvement can be linked with the various capacity building activities (at MCC and farm level on milk handling, milking practices and animal husbandry). If an important work was done, still the coverage of farmers was not complete from the MCC perspective. Not all the farmers could benefit from the extension services (questioning the selection of the farmers benefitting from those services). In terms of topic, a clear demand from the farmers - during the assessment was to specifically emphasize on the nutrition of dairy cows.
To improve milk quality, farmers also had to invest in milk cans (switch from plastic to metal cans), improved feeding, more water for washing,...Some farmers had difficulties to do so, in direct relation with the farm scale of production, market orientation, capabilities of the farm. To ensure the inclusivity and equity of the QBMPS, a dedicated attention and support might be relevant to consider in the future for the most vulnerable farmers.

The lack of precise data and record keeping at farm level prevented having a clear overview of the pilot impact at farm level. However, we can extrapolate an increase of the milk revenue at household level. Indeed milk production increase was reported and bonus payment was, to some extent, distributed to farmers (within coop or directly paid to farmers for the small scale processor); furthermore, the QBMPS appeared to be attractive in the milk shed among farmers. Although a potential side-effect of the pilot on the female farmer revenue was revealed during the investigation.

Indeed, since the fat content of the milk is one parameter considered in the bonus standards, milk skimming is prevented by the QBMPS. However, woman skim milk to produce and market ghee (or to consume it in the household). They receive from this practice their own source of income. Thus QBMPS by preventing skimming might prevent women from getting revenue since the bonus comes from another channel to the household. Not extensively investigated, it was identified by cooperative members as a source of tensions within the household. The impact of the pilot on women's revenue and household nutrition was not clearly established and needs to be investigated and considered in the future of the QBMPS. Alternative mechanisms could guarantee women to receive their own share of the bonus payment and thus prevent such tensions.
For farmers, trusting the system remained challenging. Indeed, for them to get a benefit of the system, they had to trust: the reliability of milk tests at the different levels of the chain, the processor's commitment to pay the bonus to MCCs, as well as the distribution of the bonus between the MCCs and their suppliers. The limited transparency of bonus payment and use by the MCC remained a key issue, worsened by the limited record keeping.
Thus a large part of the risk lies within the farmers but no systematic mechanism was established to support their grievance and help them to distribute their risks. It might be a mechanism to consider in the next phase.

#### 3.1.1.4 UCCCU

The Uganda Crane Creameries Cooperative Union (UCCCU), umbrella institution for different cooperatives in Uganda was also part of the pilot. They mainly supported the project by providing extension service staff to train MCCs and cooperative members on good hygiene and good farming practices. Two full-time jobs were created and trained with the support of TIDE project. It still unsure if these jobs and services offered would sustain without the project support. Despite this support, it was difficult for UCCCU to meet the demand of their cooperatives in terms of equipment (lab inputs) and extension services offer (number of extension officers and skills).
Nevertheless, thanks to its active role in the pilot, UCCCU status was strengthened in the milkshed, their capacity in management and leadership was strengthened. Still, UCCCU had a limited bargaining power to negotiate with processors and to advocate for coop interests (bonus payment, etc.). UCCCU is financed through a tax on milk marketed by its cooperative members. Since the cooperative part of the pilot potentially increased their activity, UCCCU might also have increased its revenue during the QBMPS. Further investigations are needed to confirm this assumption.

#### 3.1.1.5 DDA-SNV TIDE Achievements

Thanks to an adaptive management, the project was oriented towards a piloting phase after an initial exploratory (feasibility study) phase among the different dairy stakeholders of the milkshed. DDA worked in close collaboration with the SNV team to lead the pilot. Together they succeeded to create and facilitate an efficient collaboration between partners of the pilot phase: 3 dairy processors, 11 MCCs and various international knowledge providers (WUR, Bles dairies consulting, AgriTerra).
With the support of Bles Dairies consulting, a road map was designed and several activities were conducted along the pilot phase: investment in milk quality testing equipment zero setting on quality standards, organisation of the ring testing laboratory equipment and maintenance.
Thanks to these various activities, the capacity of DDA, MCCs (cooperative and non-cooperative), farmers and UCCCU staff on milk quality analysis, milk hygiene and farming practices have been strengthened. At the milkshed level, the volume of milk that qualified for the bonus and the bonus payment to MCCs increased.
To support the laboratory network required for the QBMPS, DDA and SNV TIDE also played the challenging brokering role of identifying service providers in Uganda (equipment suppliers, lab input suppliers...). The lab equipment sourcing in India and their lengthy withhold by the custom during the pilot is one concrete example of the challenge. The service supply for laboratories would be a major constraining factor if the QBMPS had to be scaled-up.
A major challenges faced by the project lay in the difficulty to develop and implement an efficient M&E system. This includes a limited clarity on the initial pilot targets and benchmarking of the pilot roll out. Without a strong M&E, the proof of the pilot success are weakened and adopting an agile management more difficult. The lack of data recording can also explain the difficulty of the project to ensure the bonus payment along the chain (especially for the medium processor), or the transparency on the quality standards applied in the QBMPS by the different stakeholders.

To summarize, in this pilot, the QBMPS is processor-led. The QBMPS pilot targeted mainly the processors-MCC business link and had to delay the individual payment of milk quality to a later agenda (except for the small scale processor). During the assessment, different stages of maturity of the QBMPS were observed:

- Large scale processors was able to ensure a regular payment of the bonus and service support to its suppliers. The business model was well established and attractive for both the processor and its suppliers. On the overall it was an extremely successful QBMPS adoption case.
- For the medium and small scale processors, the situation appeared to be more challenging. Maintaining a regular bonus payment was difficult (cash flow challenge) and transparency was limited. Thus further time and support is needed to guarantee the sustainability of the QBMPS for those enterprises and their suppliers.

## 3.2 Scalability

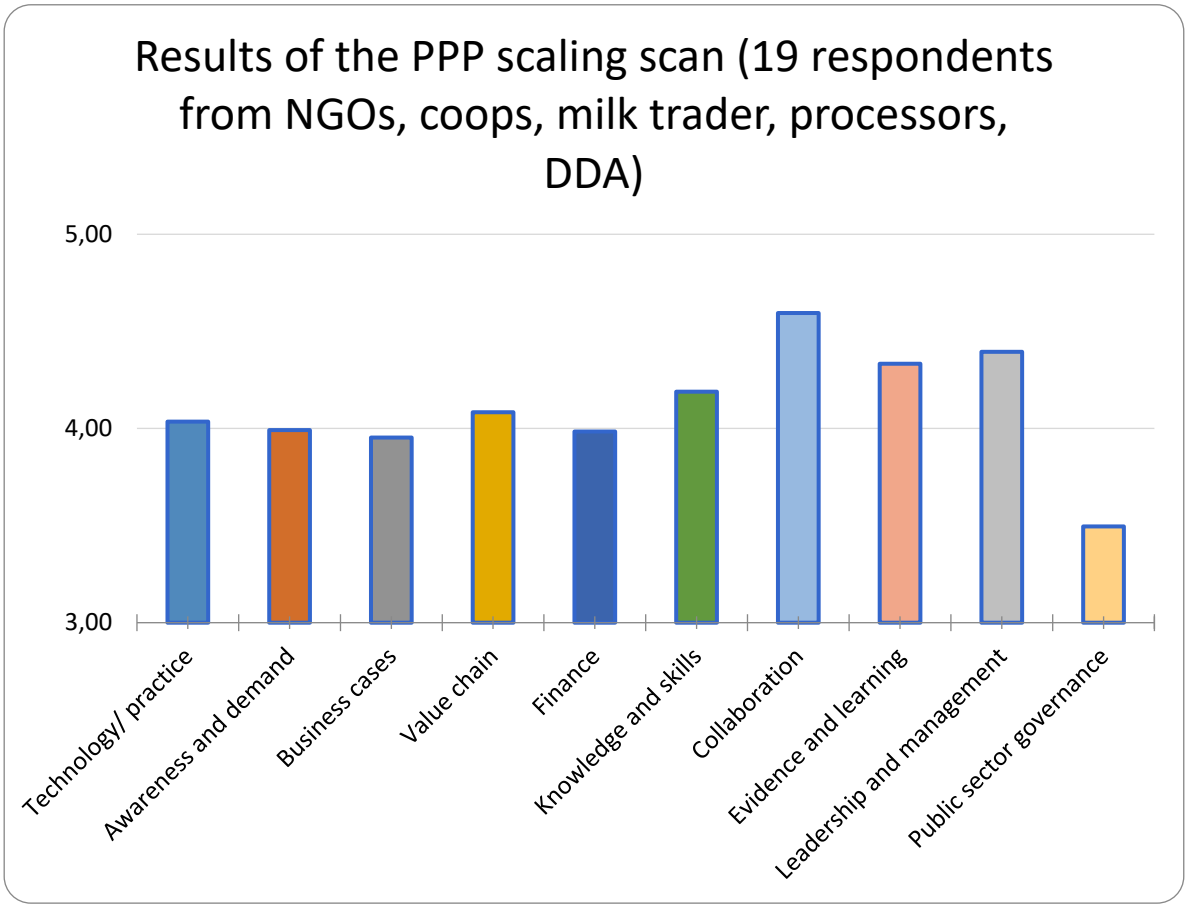


***Figure 3*** *Average scores from the 10 ingredients of the scaling scan tool (score: 0 very poor to 5 very good)*

### 3.2.1 Scaling scan results

The results from interviews with 19 key stakeholders using the scaling scan approach are shown on the figure above. These show that there was a strong perception of stakeholders that the level of collaboration between stakeholders was good, followed by the leadership and management of the project and then the evidence and learning which the pilot phase supported.

As concerns the **collaboration**, it was attested that the stakeholders had a high level of satisfaction on the collaboration between various stakeholders involved in the QBMPS. It was most especially valuable because this collaboration increased their attractiveness in the market and gave them new business opportunities. Regarding **leadership**, stakeholders were satisfied with the involvement of leaders from their own organisation as well as leaders of partner organisations in contributing towards

the success of the project. Looking at the **evidence and learning**, it was clear that there was relatively high level of satisfaction on the regular sharing of learnings between stakeholders. This improved record keeping at various levels. Nevertheless, useful quantitative data was not available for a proper M&E system.
On the other hand, three least rated of the 10 ingredients were public sector governance, the business case of the QBMPS and the financing of the QBMPS. As concerns **public sector governance**, stakeholders showed a high satisfaction with the involvement of the DDA in the QBMPS pilot. Meanwhile, it was clear that they expected more from the public sector especially the Ugandan National Bureau of Standards (UNBS) in setting and enforcing quality standards, and also more from universities, research institutions and extension services. The **business case**, was not always attractive to the small and medium scale processors as well as the cooperatives and farmers. Some cooperatives lost members in the beginning because these were not willing to comply with the new system. Some farmers were not satisfied with the system because they had not received bonuses as they expected, perhaps because there was a delay in starting these payments, also because some cooperatives did not pass on the payments directly to the farmers. The medium and smaller processors faced difficulties in ensuring a regular payment of the bonus despite their commitment. For example, one of the processors mentioned the lack of cash flow as a challenge. Concerning the **financing**, it came out that stakeholders did not have enough own financing for implementation of the QBMPS and were expecting more co-financing from the project.

## 3.3 Lessons learnt during the pilot

Based on the different discussions with the various stakeholders and the workshop, several lessons can be learned for the pilot.

### 3.3.1 What is indispensable for a well-functioning QBMPS:

"Hardware":
- Equipment (milk analysers and lab inputs, cans) must be available, affordable and reliable for processors and MCCs willing to engage. Ownership enhances proper use of equipment and commitment to the QBMPS but also requires the ability to invest at early stage.

"Software":
Commitment of the stakeholders thanks to engaged and proactive leaders
- Processors must be willing to implement the QBMPS and pay the bonuses which implies a strong business model.
- Bonus payment to MCCs by processors, even if delayed, plays a vital role in attracting suppliers.
- Leadership and management skills are essential for leaders of various organisations. With a clear vision and their willingness to adhere to the QBMPS, they also need to be able to motivate members of their organisations to go through the full development of the QBMPS which might be a timely process.

Trust building with the support of a strong arbitrator and time
- Trust of the various stakeholders in the milk tests is essential and is a bottleneck of the QBMPS. Without it, the whole system would collapse. To guarantee it, the regular ring testing of the laboratory equipment has to be implemented by a neutral party (DDA in pilot case).
- Organising a smooth collaboration between various actors is essential as a QBMPS is a multi-stakeholder partnership. It requires to build trust and to some extent transparency between the stakeholders. Time is often overlooked as a key resource in such processes. Furthermore a strong and engaged regulatory party is needed to play the arbitrator role in such collaboration such as the key role played by DDA in the pilot project.
- The "rules" used for the QBMPS have to be agreed between processors and their suppliers (quality standards, bonus amount and payment). Having an homogeneous set of rules between processors in the milkshed might not be necessary at this stage.

Capacity building for technical and soft skills

- Improving capacity of the various stakeholders is essential on milk analysis, hygiene and farming practices, record keeping, farm management. Once again time is an essential resource and continuous trainings are needed to maximise the chance of practice improvement. By training the long term staff in the various organisations, knowledge can be easily autonomously transferred to new comers. Besides technical knowledge, pedagogic and leadership skills have to be considered as well.

### 3.3.2 What is non-mandatory but a precious asset for the QBMPS stakeholders:

- Record keeping connected to an efficient M&E system along the chain is a precious QBMPS asset. It can help to track the performance of the system and allows management decisions based on facts and not on assumptions. M&E system can also support a mechanism to address the grievances of different stakeholders. Thus it can be efficient to limit power asymmetries among stakeholders and to ensure better compliance with the QBMPS terms (eg: bonus payment in time). Thanks to such a mechanism, building trust among stakeholders would be facilitated.
- In respect with equity principles, a specific support for the most vulnerable farmers/MCCs, with limited resources to invest in milk quality improvement would be extremely relevant.
- There is increased risk associated with the dry season and specific activities to ensure the sustainability of the QBMPS might be required during this period.
- QBMPS might generate unexpected side-effects, direct or indirect, positive or negative, on the milkshed. These side-effects can turn into positive or negative feed-back loop affecting the QBMPS. One example identified is the prevention of milk skimming by the QBMPS in Mbarara. It can in turn affect households (women income, household revenue). As another example. if the higher quality produced through the QBMPS is exported, it might affect the evolution in quality of milk marketed for local consumers. Investigations are needed to understand better the impact of the QBMPS in the milkshed dynamic.

### 3.3.3 What can be delayed for a later agenda:

- When farmers sell through MCCs to dairy processors, individual payment of the bonus, initially planned by the QBMPS pilot can be postponed till later. Indeed it requires further investments from farmers and MCCs (awareness, record keeping, time...) and processors to put in place the individual payment schemes. It appears to be a difficult objective to reach when the system has not yet proven its efficiency. However, it does not prevent the payment of bonuses on bulk milk to MCCs.
- The QBMPS is a dynamic process. Standards should evolve with time. However, for stakeholders not familiar with milk quality testing, the regular assessment and adjustment of the milk quality standards and the bonus over the year can be challenging. If too complicated, it could compromise the success of the QBMPS by challenging the trust and the transparency of the system. Once again, giving time to the various stakeholders get used to the QBMPS is needed to help them understand the rules of this new setting. After this "initiation" phase, parameters can be adjusted along the years which might also include new or safety parameters (antibiotics, aflatoxins, etc.) on a longer term.
- Success of the QBMPS does not necessarily require milk to be weighed instead of being measured in volume. However, preventing the measure by volume might lead to better income of suppliers by preventing the common fraud on volume in the milkshed.

## 3.4 Next steps

### 3.4.1 When and how should the pilot be officially closed as pilot?

Pilot will officially end in December 2018 but activities will continue until a new decision on the next step to be taken is made by the steering committee. To support this decision making process, 3 key objectives have to be pursued:

- **Collecting and building the learnings from the pilot** appears essential to plan carefully the next steps of the QBMPS development in Uganda. A collective reflection on the pilot experience was

initiated during a workshop organised for this assessment (30/11/12). Continuing the process with the steering committee and integrating the perspective of the various stakeholders (exhaustive MCCs part of the pilot, broader range of stakeholders impacted by the QBMPS) appeared to be an efficient way to start build the future of the QBMPS in the milkshed.

- **Organising and sharing the learnings of the pilot** with the stakeholders of the pilot will support the collective reflection. It might also help them to better understand the QBMPS dynamic, challenges, offer them different perspective and motivate them to review their strategy. The pilot stakeholders also have the responsibility to share the results of the pilot to other dairy stakeholders in Mbarara (coop, milk traders and processors) and at national level (university, policy level, consumers...). As pioneer organisations, it might help them to both strengthen their reputation as well as Mbarara milkshed reputation while attracting other organisations to join the dynamic. Emphasising the business attractiveness of the system for each stakeholders and as a milkshed seems promising angle to adopt to reach a business audience.
- **Building an agreement** between the pilot stakeholders on the next steps is a parallel agenda of the communication dynamic. In the next section, few recommendations will be formulated.

### 3.4.2 What are the next steps after piloting? Is QBMPS ready for up-scaling or national adoption?

Next steps of the QBMPS pilot diverge for each type of stakeholders. Thus we will elaborate on the foreseen activities for each one of them.

#### 3.4.2.1 Large scale processors

Pearl dairy appears to be ready to scale-up in term of number of suppliers part of their system. They already engaged the process by investing in the creation of a private extension service. If this enterprise appears ready to scale-up, it might require some time. Indeed several investments in capacity building (extension, MCC capacity, input supply...), business model adjustment and a close collaboration with the public regulation organisation is needed to maximise the success chances of scaling-up.

**Why do they appear ready**: motivation of the leader, available resources (finances, staff), promising business case, suppliers satisfaction, eagerness of the supplying MCCs not yet part of the QBMPS pilot to benefit of the bonus.
**Strategy foreseen by the manager**: Intention to self-finance the up-scaling (equipment, extension staff and services) and adoption of a premium price. They would like to extend the system to all the suppliers as soon as possible with the quality requirements used during the pilot.
**Recommendations**:
Scaling-up implies in this case an extended number of suppliers aspirants for the bonus. A pre-requisite to such up-scale is:

- The availability of extension services for MCCs, since important capacity building has to be done for MCCs willing to join the QBMPS.
- Ensuring that sourcing, maintenance, operation and calibration of laboratory equipment is ready for up-scaling otherwise trust cannot be built between the various stakeholders and the QBMPS will collapse.
- The regulatory institution has to be ready to play its role and to have capacity to address this increased activity. Thus the collaboration between public and private organisations have to be considered carefully.
- Since motivation and willingness of MCC is a key success factor, an incremental up-scaling is recommended based on MCCs application. It will give time to the processors to adjust and strengthen their business model (an increased number of MCCs joining would lead to increased bonus payments which should be carefully monitored to prevent the bonus from becoming a threat to the financial status of the enterprise). Developing a tool for assessment of MCCs readiness to apply the QBMPS could help for both parties to limit their risks in joining the QBMPS (detail in MCC part).

#### 3.4.2.2 Medium and small scale processors

There is still a high risk for these enterprises to scale-up the QBMPS as their business model is not yet established and mature. An extension of the pilot phase appears needed for these stakeholders.
**Why**: during the investigation, they were still at a very early stage of bonus payment (2-3 months) and were still gaining experience with the QBMPS implementation. They were also facing difficulties in paying bonuses to their suppliers who qualified and facing difficulties to invest in equipment and services, their business case does not appear stabilised.
**Strategy foreseen by the medium manager:** processors see a potential benefit in the QBMPS but experience difficulties in their implementation. The short term plan is to maintain the current setting (number of suppliers in the QBMPS, bonus payment, quality standards) until a sustainable business case is established. The long term plan is to scale-up progressively, every 6 months by integrating a new group of willing suppliers to the QBMPS.
**Strategy foreseen by the small scale manager:** similar plan to stabilise the business model (the processing plant seems to apply the QBMPS to its suppliers but their transparency is still limited). Its perspective being mainly in supporting its suppliers to reach the standards and in the future to adjust the quality parameters to the evolution of milk quality parameters of its suppliers.
**Recommendations**:

- Develop an efficient M&E system to monitor progress and challenges of the QBMPS allowing the adoption of an agile strategy and develop a sustainable business model.
- Before up-scaling, a business case needs to be well established. This process might take longer than planned.
- Trust among partners is one of the key elements of an efficient QBMPS and is this lacking in the current setting. Processors should aim at building trust between farmers, coops/milk traders and processors by improving transparency (communication of quality parameters and bonus payment along the chain), ensure a fair and timely distribution of the bonus along the chain. A good M&E system would be very supportive in this regards.
- Pooling resources and seeking collaborations with other stakeholders in order to gain efficiency in managing their limited resources (equipment/inputs sourcing, support staff to the QBMPS, finances...), and looking for synergies in the dairy sector.

#### 3.4.2.3 DDA: regulation role. Arbitrator of the QBMPS

DDA has played a crucial role in the success of the pilot, especially by being a strong arbitrator and regulatory institution. As the pilot is ending, DDA will have to lead in documenting the learnings (cf previously) and communicating the lessons learned from Mbarara and at national level with support of SNV team. This process will help in making the urgent decision if the QBMPS could be scaled up at national level. This is a prerequisite in defining the role and responsibility of DDA during the scaling-up phase. In this case, to support the process, DDA would have to maintain and strengthen its position as an arbitrator of the QBMPS.
To do so, the organisation would have to strengthen its capacity in to meet its various responsibilities in the QBMPS which are:

- Facilitating and regulating a ring testing organised by the private sector (processors and MCCs). They would also be in charge of assessing the opportunity to up-scale the QBMPS in terms of quality parameters (what parameters to use? Level of the bonus payment...).
- Enforce regulation and commitment towards the QBMPS. As arbitrator, strengthening and standardising a system that can address the various grievances of the QBMPS stakeholders would be needed in case of up-scaling.
- Facilitation of the process among the different stakeholders. As the QBMPS will up-scale, a new collaboration system would help to share learnings, pool resources, create trust and business opportunities among stakeholders... Co-creating a dedicated QBMPS platform with the partners might be a pathway to explore.

Processors, coop/milk trader could finance both ring testing and extension services in a private-public partnership co-financed by a deduction (cess) from formal milk. In order to pool public resources and to lead these various missions, seeking the collaboration of Uganda National Bureau Of Standards (UNBS) and clarify their roles and responsibilities in the QBMPS in the coming years would be an interesting pathway to explore.

#### 3.4.2.4 SNV-TIDE: support and guidance of the QBMPS up-scaling

As a cooperation-development organisation, SNV TIDE should provide tailor-made assistance for stakeholders willing to engage in the QBMPS and its up-scaling.

- Strong collaboration with DDA

The close collaboration of SNV TIDE team with DDA was a key success of the pilot. Maintaining this close link and support DDA role and responsibilities in the QBMPS (cf previous) will be essential to up-scale. As such, SNV TIDE can play a key role in sharing the learnings at national and international level.

- Support the M&E development

By supporting DDA and the various actors to develop and use an efficient user friendly M&E system in the coming phase, SNV TIDE could considerably support the various stakeholders towards success. It would help to instigate a performance based management in the milkshed and fasten the autonomy of the stakeholders. It could also support the measure of the project impacts on the territory, on the formal and informal chains and among other the impacts at household level, including women. SNV TIDE could co-create with the pilot stakeholders a tool to assess cooperatives' capabilities to join a QBMPS. It will help to minimise the risks for both processors and coop as well as to identify and invest in the weaknesses of the coop.

- Support the development of services

A key role is foreseen for TIDE in supporting the development of a sustainable dairy services in the milk shed by:

- Facilitating an autonomous pooled extension service and ring testing service financed by the business stakeholders and supervised by DDA.
- Supporting the capacity building of UCCCU staff in order to meet the needs of the additional coops during up-scaling of the QBMPS
- Playing a role of business brokering, SNV TIDE could support the processors in identifying the potential suppliers of equipment and inputs for the QBMPS scale-up phase. A second step would be to support them in organising regular supply and maintenance of these equipment in the milk shed.

In respect of equity principles, it appears legitimate to deliver an extra-support for the organisations with limited resources (such as small and medium scale processors as well as vulnerable cooperative and MCCs).

#### 3.4.2.5 UCCCU: strong support of the coop interest in the QBMPS

UCCCU position has to be clarified in the next phase of the QBMPS as opposed to the vague position it had during the pilot phase.

Roles and responsibilities foreseen for UCCCU :

- Lobbying for farmer's interests: milk pricing, bonus payment, balance power of coop vs processors, national level, other unions...
- Co-design the mechanism to address grievance among the QBMPS stakeholders
- A strong activity for UCCCU would also be to develop a centralised M&E system for UCCU's coops supported by a reliable M&E system at the coop level. It includes the designing and testing of a tool to assess a cooperative's capabilities and readiness to join the QBMPS. They could support DDA to identify the areas and MCCs requiring specific attention and support. Their contribution in the development of a coop assessment tool would be precious (design and tests).
- Strengthen their extension service to cooperative. During the pilot phase, TIDE supported financially the extension service of UCCCU. Thus to scale-up and in order to become autonomous, a sustainable business model has to be identified.

# 4 Conclusions- Recommendations

The QBMPS pilot co-organised by SNV-TIDE and DDA has been successful in many aspects. The milk quality marketed between the organisations involved improved. DDA position was particularly strengthened in the milkshed by succeeding in co-leading the pilot with SNV and conducting the ring testing. Indeed the initiation of the quality assessment system appeared challenging to organise (sourcing, operation, maintenance, calibration).

The various stakeholders engaged are generally satisfied with the pilot results and are willing to continue, which is already a great achievement in the short period of time of the pilot. However, there was a difference in opinion between them. The large processor, PD, was successful and succeeded to develop the QBMPS within its sourcing network in a record time in. The medium and small scale processors, with less capacities faced more difficulties in ensuring a regular payment of bonuses to their suppliers. A sustainable business model is yet to be found for these stakeholders. For the MCCs, several phases have been observed. MCCs were challenged at an early stage of the adoption process and took important risks to join the QBMPS (investments required from the cooperative as well as from the farmers, loss of suppliers at the early stage...). The ones that stayed experienced several benefits of being part of the QBMPS: bonus payment, increased milk volumes and milk quality, increased attractiveness in the market. However, the individual payment of milk quality to farmers in MCCS was not organised during the pilot and had to be post-poned till later.
The collaboration within the steering committee was appreciated by its members. However strong power asymmetries exist in the value chain and challenged the sustainability of the QBMPS collaboration. It can explain for example the irregular bonus payment to MCCs despite their qualification. Such asymmetries weaken the trust bounding the different stakeholders. Although this trust is essential for the QBMPS to work as well as for a prosperous commercial ecosystem to flourish. By promoting mechanisms able to balance this power asymmetries (grievance mechanisms, efficient recording system at MCCs and farmer levels, reliable and user friendly M&E system in the value chain, strong power and engagement of the regulator...), the situation could be avoided in the future.

For the next steps, SNV has to adopt a position ensuring the autonomy of the QBMPS after the end of a phase 2. DDA will have to regulate the scaling-up of the QBMPS with a dual role: strengthening its arbitrator role (ring testing, grievance...) and organising the QBMPS community of stakeholders in the country. The large processor should receive a "lighter" attention and support from the project in the coming steps compared to the medium and small scale processors. Those should seek in priority the establishment of a sustainable business model, allowing them to maintain the QBMPS and their commitment towards the various stakeholders. UCCCU will have to clarify its roles and responsibility in the QBMPS. The organisation is foreseen as a strong support for cooperatives' interests but will have to invest in the process to be able to support cooperatives on their readiness for the up-scaling- phase.

Several activities appeared urgent in the next steps of the QBMPS:
- Setting up a mechanism to address the grievances of various actors
- Setting up a mechanism to ensure collaboration among the QBMPS stakeholders while up-scaling: among similar organisations, along each value chains, combining both (platforms)?
- Explore the opportunity to pool extension, milk quality tests and ring testing services privately financed and regulated by DDA
- Development of an assessment tool for the capabilities MCCs to join the QBMPS in order to limit business risks associated with non-compliance.

A few questions will have to be addressed collectively during the next steps:

- How to ensure the individual milk quality bonus payment?
- Can a business case be developed from the QBMPS at the national market and how can consumers awareness be raised?
- Will the current milk quality standards be sustainable for all actors over the years? Will safety parameters (antibiotic residues, aflatoxins, etc.) become more important for consideration in future?
- What about the indirect impact of the system on: other dairy actors? Women? Nutrition security (high quality milk is channelled outside the milk shed)?

Wageningen Centre for Development Innovation
Wageningen University & Research
P.O. Box 88
6700 AB Wageningen
The Netherlands
T +31 (0)317 48 68 00
www.wur.eu/cdi

Report WCDI-19-069

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Wageningen Centre for Development Innovation
Wageningen University & Research
P.O. Box 88
6700 AB Wageningen
The Netherlands
T +31 (0)317 48 68 00
www.wur.eu/cdi

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