TIDE II Final Evaluation

Final Report

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Fair and Sustainable Consulting, Utrecht

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TIDE II Final Evaluation

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List of Acronyms

A-GRIP	Agricultural Governance Results Improvement Project
AI	Artificial Insemination
BRIGHT	Building Resilience and Inclusive Growth of Highland farming systems for rural Transformation
CAO	Chief Administrative Officer
CASCADE	Catalysing Strengthening Policy Action for Healthy Diets and Resilience
CBO	Community Based organisation
CIAT	International Centre for Tropical Agriculture
COVID-19	Coronavirus disease 2019
CSA	Climate Smart Agriculture
DAC	Development Assistance Committee
DAO	District Agricultural Officer
DCDO	District Cooperative Development Officer
DDA	Dairy Development Authority
DEO	District Education Officer
DRC	Democratic Republic of Congo
EARNED	Regional Network of Excellence in Dairy Training
EKN	Embassy of the Kingdom of the Netherlands
EUR	Euro
FAO	Food and Agriculture Organisation
F&S	Fair and Sustainable Consulting
FGD	Focus Group Discussion
FTE	Full Time Employment
ISDAP	Integrated Smallholder Dairy Development Programme
KII	Key Informant Interview
KIT	Royal Tropical Institute
LSP	Local Service Provider
MACS	Multi-Annual Country Strategy
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
M&E	Monitoring and Evaluation
MCC	Milk Collection Centre
MFA	Ministry of Foreign Affairs
MSD	Market Systems Development
NaLIRRI	National Livestock Resources Research Institute
NASECO	Nalweyo Seed Company
NDP	National Development Plan
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development'
PCP	Pearl Capital Partners
PDTF	Practical Dairy Training Farm
PTA	Parent-Teacher Association

QBMPS	Quality Based Milk Payment System RDI Rubyerwa Dairy Investment
RVO	Netherlands Enterprise Agency
RWH	Rainwater harvesting
SACCO	Savings and Credit Cooperative Society
SAY	Skilling in Agripreneurship for increased Youth employment
SHF	Smallholder Farmer
SMART	Specific, Measurable, Achievable, Relevant, and Time bound
SMP	School Milk Programme
SNF	Solid-Non-Fat
SNV	Netherlands Development Organisation
TEA	Training, Extension and Advisory
TIDE	The Inclusive Dairy Enterprise project
ToC	Theory of Change
ToR	Terms of Reference
UCCCU	Uganda Cranes Creameries Cooperative Union
UGX	Uganda shilling (about 4,000 in one Euro)
UHT	Ultra High Temperature
VF	Village Facilitator
VLG	Village Learning Group
VMMG	Village Milk Marketing Group

Executive Summary

The Inclusive Dairy Enterprise project phase 2 (TIDE II) is a four-year project (1 January 2020 – 31 December 2023) with a total budget of EUR 10,462,069, funded by the Embassy of the Kingdom of the Netherlands (EKN) and implemented by Netherlands Development Organisation (SNV), in collaboration with local and international stakeholders.

The objective of TIDE II is to deepen (shift from market creation to market development and a strategic approach to dairy value chain development) and up-scale (extended to 14 districts) the results of TIDE I, which ran from 15 September 2015 to 31 December 2019 in seven districts in Uganda. The project is divided into four components:

1. Improved Dairy Farm Productivity
2. Milk Quality
3. Sector Regulation and Cooperative Sector Development
4. Nutrition/School Milk

During the implementation of the Multi-Annual Country Strategy (MACS) of the Netherlands in Uganda it became apparent that smallholders were not benefitting as expected from the developments in the different sectors. This has led to the development of the Integrated Smallholder Dairy Development Program (ISDAP) component, targeting smallholder dairy farmer households in the Rwenzori, Kigezi and Ankole sub-regions of southwestern Uganda. ISDAP component has activated intervention in twelve districts. ISADP started in November 2021, with real implementation starting March 2022 and will run until the end of 2024.

Towards the end of TIDE II, EKN called for an independent end-of-project evaluation to assess the performance of the project and capture project achievements, challenges, and best practises. The evaluation was implemented by a multi-disciplinary team of four consultants of the Royal Tropical Institute (KIT) and Fair and Sustainable Consulting (F&S). The evaluation was implemented between 18 September and 24 November 2023. Project relevance, coherence, effectiveness, efficiency, impact and sustainability were analysed on the basis of specific questions of the Terms of Reference (ToR).

The project was considered relevant for most farmers as it offers opportunities to commercialise milk through service arrangements and market access or supplement livelihood strategies. The project objectives are mostly consistent with the needs and priorities of the ultimate beneficiaries and fully with country needs. The relevance of TIDE II could have been higher if the project had been more effective in addressing milk price and milk marketing issues. A more targeted approach to strengthen the capacity of cooperatives to sustain procurement and improve their bargaining power in the domestic market would have made the project more relevant.

The project's design and implementation were coherent with the objectives of the NL strategy for food security, and in line with Ugandan national policies, like the third National Development Plan (NDP III) and Uganda's school feeding policy. However, the overall objective of poverty reduction was not much regarded. While poverty reduction is the ultimate goal of the project, as reflected in the project results framework, the project did not steer to ensure it would contribute to it. There was no monitoring on poverty impact and no strategy adaptations to ensure a poverty reducing focus.

The theory of change, results framework and indicators have several shortcomings. The project proposal mentions market systems development and value chain approach, but in

reality follows a modular approach, with sets of products that are made available to stakeholders. In the project proposal, the target population, or beneficiaries, is not defined. Indicators are mostly not SMART (specific, measurable, achievable, relevant, and time bound). The main beneficiaries are medium to large dairy cattle owners in Southwest Uganda, and smallholder farmers in the ISDAP zone. Because of the importance of demonstration and the use of result-based local service providers, there is a bias to work with the better off farmers and private schools.

Generally, the project has been achieving its annual and cumulative outputs. It must be noted, however, that indicators and targets were revised as late as 2021. The latest update was that 8,153 dairy farmers are impacted by TIDE interventions. Seven more processors were mobilised in 2022 to launch QBMPS, bringing the total to 11 processors. 130 cooperatives were supported by the project and cumulatively a total of UGX 14.9 bln was invested in the dairy value chain. ISDAP is only halfway its project duration, but is well on track achieving its outputs and outcomes. Although the overall project goal is "poverty reduction through improved dairy farm incomes, household nutrition and employment", there is no tracking or reporting of poverty levels, and of the three targeted impacts, only job creation is reported on.

The project has been implemented in an efficient way. Financial management and reporting are based on annual budgets. Expenditure has been monitored closely by project management and annual and overall expenditure has been close to the budget. SNV aimed to keep staff numbers low and used Local Service Providers (LSPs) to do several tasks otherwise done by project staff. The additional benefit was that local, private, capacity was strengthened. Despite the effects of the COVID-19 pandemic, the project has been implemented timely, based on annual planning and targets.

An estimated 20,000 farmers (5,000 for TIDE II and 15,000 for ISDAP) have benefitted from training and financial incentives and were able to improve their dairy farming. About 5,000 people found employment in the sector, due to project interventions. Milk consumption in schools has increased, but the impact on nutrition is considered small. Where beneficiaries have benefitted from subsidised investment, through different levels of cost sharing, these are likely to result on long-term impact. The uptake of similar investments without project subsidy is very limited.

The project was most beneficial for medium to large farmers. There is a bias towards the better performing farmers (hence usually the richer farmers, for two reasons:

1. The project has an approach of demonstration. To give the most attractive demonstration, the best farmers in each area selected to show the effects of the project's interventions.
2. The project works with local service providers, who get "result based contracts", in other words they are paid by the number of farmers they recruit or the number of demonstrations they can give. The best or easiest results are achieved by LSPs by targeting the most advanced farmers.

The bias towards the better farmers is seen in ISDAP. Farmers were profiled at the start of the project, but it was observed that when Village Learning Groups were formed, the best farmers in the group were selected (by the group members themselves) to benefit from incentives related to demonstrations.

TIDE worked with a set of pre-defined activities and a modular methodology: establishment of demonstrations, result-based contracts with LSPs to organise an agreed number of farmers, cooperatives or schools. With a more open value chain approach the project could have analysed the most important bottlenecks to achieve the desired result for its target group(s). The project focused its activities mostly on the productive side of the dairy value chain, while a pulling factor, like price stability, or a shift in power relations between farmers (cooperatives),

traders and processors, could have sorted a better and more structural impact for the producers. If improved nutrition is a major objective of the project, parents-led school milk is not likely the most effective or efficient. Overall, a better definition of the target group(s) would have helped to focus on intervention that most benefit the intended people.

1 Introduction

1.1 Background to the evaluation

On 31 August 2023, the Royal Tropical Institute (KIT) was selected by the Embassy of the Kingdom of the Netherlands (EKN) in Kampala to carry out the TIDE II project final evaluation under lot 2 of the Framework Agreement Evaluations of 15 September 2020 with the Ministry of Foreign Affairs (MFA). For the evaluation KIT offered a team with the consortium member Fair and Sustainable Consulting (F&S). The contract was signed 25 September 2023. The evaluation team consists of Mr. Paul Sijssens (F&S, international consultant, team leader), Ms. Mona Dhamankar (KIT, international consultant), Dr. Andrew Kizito Muganga (F&S, national consultant) and Ms. Ziwena Nantongo (KIT, national consultant).

1.2 Objectives of the evaluation

The purpose of the evaluation (see Terms of Reference (ToR), Annex 1), was to assess the performance of the project and capture project achievements, challenges, and best practises. Besides accountability, the evaluation was being considered as a learning aspect for all stakeholders and should identify key lessons learned, challenges, unintended effects and the flexibility of the programme to adapt and respond to the changes and long-term sustainability of transformation of the dairy sector.

The objectives of the evaluation were to:

1. Assess whether the project has achieved inclusive development of the dairy sector.
2. Assess whether the project has led to improved production, a conducive enabling environment for the dairy sector and strengthened position of cooperatives in the dairy sector.
3. Assess whether this has led to increased incomes and resilience for market shocks for farmers and members of the cooperatives.
4. Identify, assess and measure unintended effects of the project. Possible unintended effects could be on the position of smallholders, dominance of large farmers in cooperatives, concentration of land tenure, results of policy changes on different groups of actors, others.
5. Assess the capacity and the effectiveness of the project and its different implementing partners to adapt to changing environment and to incorporate lessons learned.
6. Identify weaknesses and strength of the project design, scope and implementation strategy.
7. Assess, to the extent possible, the results of the project in relation with the expected impact, such as income, employment and nutrition.
8. Provide an opinion of the effectiveness, efficiency and relevance of the strategy and activities of ISDAP to enhance the inclusion of smallholders in the dairy sector and to enhance their productivity and income.
9. Identify and assess key lessons learned, challenges and draw recommendation for future dairy and or livestock programs, also from the perspective of the IGG results and objectives.

In the ToR specific questions formulated with respect to relevance, coherence, effectiveness, efficiency, impact and sustainability have been provided. These questions are Answered in the Section on (Section 4).

2 Evaluation methodology

2.1 Evaluation approach

For this assignment the evaluation team used a Theory of Change (ToC) based approach based on realist evaluation. This approach seeks to understand what worked for whom, to what extent, under what circumstances, and over what duration. A realist evaluation tests how capacities and mechanisms initiated by a project cause desired outcomes and is particularly appropriate for evaluating a project that was intended to be deepened and scaled out. A well-developed ToC and/or a logical framework is the essential basis of a realist evaluation. A ToC-based approach is particularly useful because it identifies the roles of key actors influencing and/or influenced by the programme activities. These are the actors that need to acquire or change their knowledge, attitudes and behaviour in order to transform project outputs into the envisaged short-term outcomes and sector transformational impact.

The evaluation team considered the TIDE Project ToC impact pathways and the stated assumptions in the ToR as important elements of the TIDE approach to realizing change and achieving impact. The ToC refers to sector transformation as a long-term outcome to be achieved by deepening and upscaling four specific outcomes viz. i) increased milk production, ii) improved milk quality, iii) improved regulation and investment facilitation, and iv) improved nutrition of school children. The evaluation team used the ToC and the four components of TIDE II as the primary basis for the evaluation and where relevant, assessed the validity of the assumptions in reaching outputs, outcomes and impact as listed in the results framework.

2.2 Data collection

The evaluation team used three main tools for data collection: document review, Key Informant Interviews (KIIs) and Focus Group Discussion (FGDs).

Document review

The desk review informed the evaluation team on the project implementation strategy and activities, policies, various studies conducted and preliminary results of the TIDE II project. Besides directly contributing to the evaluation questions, the desk study also informed all other data collection tools. The review considered all relevant secondary data sources that are available. Secondary data will be primarily used to contextualise and/or triangulate the primary data, and thus inform the synthesis of the findings keeping in mind the evaluation questions.

Key Informant Interviews (KIIs)

Key Informant Interviews (KIIs) are qualitative interviews with resource persons who have first-hand knowledge on the topic of interest, allowing for in-depth answers and divergent views that may be difficult to collect in group settings. The purpose of the KIIs was to collect qualitative information from a wide range of people – beneficiaries of the project activities including service providers, input suppliers, (government extension workers and/or agro-input dealers, aggregators, traders, processors, market players and key stakeholders such as relevant officials/ policy makers from government departments and TIDE teams involved in project implementation.

The evaluation team ensured that the set of respondents was as diverse as possible, covering the different groups of stakeholders. Draft interview guides consisting of probing questions with regard to the respondent's role in activities related to each outcome of the project were,

focusing on the OECD-DAC criteria that formed the basis of this evaluation. Being semi-structured the KIIs allowed for free discussion of specific issues deemed relevant to the respondents.

Focus Group Discussion (FGDs)

FGDs were carried out with men and women dairy farmers (particularly cooperative members). The aim of the FGDs was to understand whether/what they perceive as changes (positive and negative) with respect to dairy farming as a livelihood option – about availability of and access to knowledge, skills, inputs, markets and finance to improve their practices, and increase their productivity, and consequently income. The discussions also focused on their capacity to sustain profitability of dairy farming, and where relevant input markets and service provision as a revenue model.

The FGDs essentially entailed a facilitated self-assessment by the selected groups, using participatory exercises to understand the extent of the benefits and added value of the project interventions/activities with relation to outcomes related to productivity enhancement, quality improvement, domestic and input markets, and improve nutrition.

2.3 Sampling strategy and Fieldwork

The sampling strategy for the semi structured interview and group discussions was based on purposeful sampling, i.e. identification of respondents who are expected to have in-depth knowledge about the TIDE project (I and II). The sample of key informants covered three levels, namely (i) production level, (ii) bulking/ aggregation level and (iii) the market level where maximum activities of the TIDE II project were being implemented (different per district). Additionally input market actors were contacted.

Respondents for each category were drawn from a tentative list that primarily consisted of the three levels above, corresponding with the four main outcomes of the project. Furthermore, the team consulted EKN and SNV to identify respondents who could comment on sustainability and growth of the dairy sector transformation.

2.4 Process of the evaluation

The evaluation formally started with a virtual kick-off meeting, held via MS Teams, on 18 September 2023, with participation of EKN, SNV TIDE II and the evaluation team. In the kick-off meeting, the workplan as submitted in the original evaluation proposal was largely confirmed.

A summary of the timeline of the evaluation is given in Table 1 below. A detailed itinerary of the fieldwork is given in Annex 2.

Table 1. Summary of timeline of TIDE II final evaluation

Dates	Main activity
Monday 18 September 2023	Kick-off meeting, start of inception period
Thursday 28 September 2023	Submission of inception report
Tuesday 10 October 2023	Meeting with EKN Kampala, start of field work
Thursday 12 – Saturday 14 October 2023	Field work TIDE, Mbarara based
Monday 16 – Wednesday 18 October 2023	Field work ISDAP, Kabale based
Thursday 19 – Friday 27 October 2023	Field work TIDE, Mbarara based
Monday 30 October – Friday 3 November 2023	Field work, Kampala based
Friday 3 November 2023	Debriefing at EKN Kampala

Fieldwork was implemented in ten out of the fourteen project districts. Meetings, interviews or group discussions were held with ten farmer groups, six individual farmers, one PDTF, one farm institute, nine cooperatives, two VMMGs, two processors, one transporter, three SACCOs, eleven schools, three local governments, three central government institutions and ten LSPs.

Debriefings were given at SNV in Mbarara (27 October 2023), SNV in Kampala (1 November 2023) and at EKN in Kampala (3 November 2023).

Debriefing session with project team in Mbarara

3 Findings

This Chapter is organised by project component, separately for TIDE (Section 3.1) and ISDAP (Section 3.2).

3.1 TIDE

3.1.1 Introduction

The Inclusive Dairy Enterprise project phase 2 (TIDE II) is a four-year project (1 January 2020 – 31 December 2023) with a total budget of EUR 10,462,069, funded by the Embassy of the Kingdom of the Netherlands (EKN) and implemented by Netherlands Development Organisation (SNV), in collaboration with local and international stakeholders.

TIDE II is the sequel to TIDE I, which ran from 15 September 2015 to 31 December 2019 in seven districts in Uganda. The main aim of TIDE I was to improve the livelihood of dairy farmers through increased production and was largely based on the then prevalent "from Aid to Trade" agenda implemented by the EKN and its food policy officer at the time. TIDE I focused on four components:

1. Improved Dairy Farm Productivity
2. Milk Quality
3. Sector Regulation and Cooperative Sector Development
4. Nutrition/School Milk

The objective of TIDE II is to build on the results of TIDE I. The project's overall goal is to deepen and up- scale dairy sector transformation by supporting farmers and service providers with the requisite knowledge and skills to reap from their investments.

Deepening is described as a shift from market creation to market development and a strategic approach to dairy value chain development in the original seven districts of TIDE I. The project also supports interventions further up the value chain that deepen and upscale the work with cooperatives and processors on service delivery and milk quality, domestic market diversification, and scaling up of the school milk project.

Upscaling aims to follow the market in the products and services developed under TIDE I that are relevant for commercial farmers throughout Uganda. Most project activities, such as cooperative extension facility, cooperatives governance and management support, parent-led school milk project/Yoba for Life, and outreach model by Practical Dairy Training Farms (PDTFs) were extended to 14 districts from the original 7 in TIDE-1.

The impact indicators for increased income, increased employment and improved nutrition are listed in Table 2.

The project reports that it has reached a total of 8,296 farmers through various TIDE interventions, which is 19% above the target of 7,000, with 20% female farmers.

Table 2. TIDE indicators, impact level

Indicator	Baseline	Target	Achieved
No. of farmers who have increased annual sales through specific project interventions by % age group and gender	n.a.	4,500	4,720
No. of jobs created on farm (% women & % youth)	n.a.	1,500	1,803
Number of jobs created off farm (% by women & % by youth)	n.a.	4,000	3,201
% Increase of school children with diverse diets	n.a.	n.a.	n.a.
Av. volume of milk consumed per child per year (litres)	25	50	52
Av. volume of yoghurt consumed per child per year (litres)	4.5	8	9

Source: SNV TIDE monitoring data

The indicator for increased annual sales gives the number of farmers who increased their milk sales. These are 4,720 farmers, 5% above target. The indicator doesn't tell by how much sales increased. Project data show, however, that cumulatively, the 4,720 farmers with increased annual sales did so by 29% per year. This was calculated by assessing the change in milk production and sales of a sample of 640 farmers twice a year.

The reported number of jobs created on-farm is 1,500 (of whom 17% female and 66% youth), 20% above the target. Most persons are employed to work as milkers, farm managers, calf workers and feed management.

The reported number of jobs created off-farm is 3,201 (27% female), 80% of the target. The reported jobs were created at cooperatives (131), processors (11) input distributors (13), yoghurt making small scale companies (93), and school milking feeding-from schools (1,261) among others. The data for this indicator is not yet fully compiled, waiting for the final results from the tracer study by Mbarara University of Science and Technology on farm jobs created.

The indicator on school children with diverse diets is not being tracked, since TIDE only contributes one item out of the 12 food items required to influence changes in diverse diets. The two indicators for improved nutrition that are used by the project are average volume of milk and yoghurt consumed per child per year. The indicators only consider the amount of milk/yoghurt consumed by students who are in the programme, so theoretically can be achieved if there is only one beneficiary. The project database shows that children from 2,482 schools consume milk, and 39,386 children from 97 schools consume yoghurt.

The reported milk consumption is rather low. If school children are getting milk every school day, estimated at 250 days per year, they consume on average 168 ml per day. If they consume yoghurt twice per week, the reported daily consumption is 13 ml.

It is noteworthy that there is little or no tracking of indicators for the impact and goal level. The overall project goal is "poverty reduction through improved dairy farm incomes, household nutrition and employment". There is no tracking or reporting of poverty levels, and of the three targeted impacts, only job creation is reported on.

3.1.2 Improved Dairy Farm Productivity

To improve the productivity of dairy farms in TIDE II, the project followed two approaches:

1. Training, Extension and Advisory (TEA) services
2. Support for Forage Improvement

Under its Training, Extension and Advisory Services (TEA) component, TIDE established three Practical Dairy Training Farms (PDTFs) for practical learning. Secondly, TIDE supported extension services at selected cooperatives through 45 cooperative extension officers. Lastly, TIDE introduced digital internet learning tools, like the dairy farm benchmarking tool, the dairy competence builder, EARNED blended internet learning and the e-Dairy training modules website.

Under Forage Improvement, four main interventions were pursued:

- Promoting the use of improved forages
- Promoting pasture management and improvement best practices:
- Contracting services through mechanisation for maize silage production:
- Utilizing Rumen8 software for improved dairy nutrition:

The indicators for the dairy farm productivity pillar are listed in Table 3 below.

Fodder Demo Plot, KAGRIC

Table 3. TIDE indicators for intervention pillar 1: Dairy Farm Productivity

Indicator	Baseline	Target	Achieved
No. of farmers with increased milk production per season	n.a.	5,000	5,848
Reduction in intensity of enteric methane at cow level (g/ltr)	n.a.	10%	8%
No. of farmers that have adopted targeted practices, including CSA and feeding	n.a.	4,000	6.364
No. of companies delivering dairy and financial services (incl. PDTFs)	9	30	37

Source: SNV TIDE monitoring data

Milk production: of the 8,296 farmers reached, 5,854 increased their milk production, 17% above the target of 5,000 farmers. The indicator doesn't quantify the increment in milk production. According to the project database, the 5,848 farmers increased their daily milk production by 31%, although how that was calculated is not stated. Noteworthy is that thirty percent of the targeted farmers did not achieve an increase in milk production.

The increase in milk production is attributed to the adoption of improved farming technologies promoted by the project, especially in the dry season. Average milk production per farm in the dry season reached 163 litres per day compared to the baseline average of 100 litres

per day.

Here again, it is not clear how this was calculated, given the large variety in farm size, number of animals and area of land.

Out of the 8,296 reached dairy farmers, 6,364 dairy farmers (60% above target; 16% female-owned farms) adopted two or more interventions aimed at increasing milk production. The main technologies are improved pastures and forages for animal feeding, use of fodder for animal feeding, use of silage both from fodder and maize, and rainwater harvesting construction of dams.

Rubyerwa Dairy Investment Ltd (RDI), Mbarare District

RDI is one of the PDTFs. The PDTF was established on a private farm of 80 acres. SNV built the centre, including classrooms, dormitories, water supply and a cattle spray race. Together with RDI a five-year development plan was made. The training facility has trained this far 1,735 farmers and other beneficiaries, like government staff, public and private extension workers and SACCO employees. Training is given on record keeping, pasture management, mechanisation, dairy as a business and family involvement. The centre has been practicing artificial insemination (AI) and is proud of the genetic improvement of its cattle.

The owner of RDI was clearly a well-established farmer and an influential person in the community. While she has about 75 dairy animals, producing about 1,500 litres of milk per day, she no longer markets her production through the cooperatives, but sells directly to the

Enteric methane intensity: Monitoring data from a selected sample of 100 farmers using the Rumen8, shows a decrease of intensity of enteric methane by 8%. It assumes that closely following recommended feeding ratios of Rumen8 leads to reduced levels of enteric methane emissions. The indicator is therefore a proxy (actual emission is not measured). Moreover, the sample size is small and biased (only the more advanced farmers use the app).

Ms Philomena Nshangano, Ruberwa Dairy Investments (RDI)

Service delivery: the project introduced and linked several service provision companies to dairy farmers – 37 in total, 23% above target. These companies are:

- 1 financial institution (EMATA).
- 3 Practical Dairy Training Farms.
- 3 input companies (Bukola, Simlaw, & NASECO).
- 3 companies providing farm implements (4DIZ, Community Engineering & Saol Engineering).
- 1 company providing mechanisation services (ENGSOl).
- 26 small scale yoghurt making companies.

3.1.3 Milk Quality

As per TIDE II's results framework, scaling up of the Quality-Based Milk Payment System (QBMPS), should have led to improved milk quality and increased sales at better prices, thereby contributing to increasing farmers' income. The project's approach to improve the quality of milk was to create awareness at different levels, equipping MCCs with milk testing tools and promoting/piloting the introduction of a QBMPS. Table 4 gives the indicator results for this project component.

Table 4. TIDE indicators for intervention pillar 2: Milk Quality

Indicator	Baseline	Target	Achieved
Reduced rejection levels of raw milk by coop and processors	5%	2%	1.8%
Total annual bonuses paid to MCC for improved quality	n.a.	UGX 800 mln	UGX 978 mln
No. of processors investing in QBMPS	3	6	11
No. of MCC investing in QBMPS	10	25	40
No. of MCCs adhering to standard protocols/SOP for good milk handling practices	5	20	102

Source: SNV TIDE monitoring data

Milk rejections by milk processors reduced from 5% to 1.84%. This indicator is calculated by the project with data provided by DDA. The most common reasons for rejection are added water (11%), failed alcohol test (18%), alcohol and added water (25%) and traces of anti-biotics (46%).

According to data provided to the project by the processors, the total of paid bonusses for quality milk reached UGX 978 million, divided as follows per processor:

- Sanatos: UGX 391,490,416
- Pearl: UGX 313,192,333
- Jesa Dairy: UGX 274,043,291

The bonuses were paid to 3,422 farmers from 40 cooperatives.

Project data show that 11 processors[1] invested in the Quality Based Milk Payment System (QBMPS), 45% above the target of 6 processors. Core investments are towards training of farmers in quality, establishment of extension systems to support farmers, equipping MCCs with testing equipment and establishment of a better milk transport systems.

[1] JESA, Pearl, Sanatos, Amos, Brookside, GBK, Excel, Prime and Tooro Dairies, AWA Food, ACME Foods.

At the time of the final project evaluation, the pilot with QBMPS was completed and the system was not yet being used by any of the processors. DDA adopted QBMPS and in cooperation with the International Food Policy Research Institute (IFPRI) an additional 117 milk analysers will be installed. Implementation the expansion of QBMPS was delayed as TIDE first needed to secure proper repair, maintenance and calibration of milk analysers before introducing them on a large scale. The installation of these analysers started only in July 2023 and will be completed in November engaging 11 milk processors, 40 MMC and reaching out to over 4,000 farms.

Quality parameters are checked, but the only differentiation is "acceptable" or "not acceptable". Not acceptable milk is rejected, which reportedly allows for a slightly higher payment of acceptable milk (milk within the minimum quality parameters). Especially yoghurt and cheese making processors benefit from high quality milk and are willing to pay a premium price. They also report an improvement of milk quality over the project implementation period.

Sanatos Food Limited

The company started in 2016 and produces seven types of cheese. The source milk from cooperatives and individual farmers. Processing has been gradually increasing from about 3,500 to its current maximum capacity of 7,000 litres per day. The company benefited from equipment support co-financed by TIDE II. Due to the investment, the number of employees increased from 28 to 32. Sanatos participated in the QBMPS pilot, rewarding quality. Quality of supplied milk has improved. In 2016 milk was still supplied in jerrycans, now only proper milk cans are used. Quality of cheese also improved with technical support of TIDE (through PUM). They also observed increase in the quality of milk such as increased fat content.

Milk quality testing in processing plant

A total of 40 MCCs have invested in QBMPS, 60% above target. Investments include recruitment and training of milk assistants, record keeping, procurement of milk handling and testing equipment. As reported by DDA, 39 MCCs are adhering to the requirements of milk handling standards. The evaluation team verified that there is a lot of attention given to quality control and the use of milk testing equipment (lactometer, ethanol test, lactoscan) is widespread. At the same time it was noted that MCCs are reluctant to invest in milk testing equipment without co-finance or subsidy.

March-June 2023, a National Technical Working Group on milk quality was set up to retain the knowledge and momentum toward the establishment of a QBMPS. Two regional milk quality platforms were also established by the DDA in Mbarara region.

Several activities were undertaken to improve the quality of school milk:

1. Capacity building: training programs of school staff and food handlers on milk quality control, including storage, handling and testing procedures.
2. Quality standards and guidelines: clear quality standards and guidelines for milk procurement, storage and distribution within school feeding programs.
3. Supplier engagement: collaboration with milk suppliers and dairy farmers to ensure adherence to quality standards and the provision of safe and high-quality milk to schools.
4. Regulatory support: collaborating with relevant government agencies to ensure compliance with food safety regulations and standards.

To maintain the momentum gained by TIDE regarding milk quality, a national technical working group on milk quality has been established and supported. The working group has representatives of the dairy industry, regulatory authorities and research institutions. Thus far the focus of the working group has been on knowledge sharing and collaborative efforts among stakeholders in the dairy industry.

3.1.4 Sector Regulation and Cooperative Sector Development

The third pillar of TIDE II is sometimes referred to as dairy value chain development or market development. In practice it primarily covers activities to strengthen the dairy cooperatives/ MCCs, and is led by Agriterra.

TIDE has supported 150 dairy cooperatives with a total membership of 22,529 farmers by providing support to improve their business functionality through training in strategic planning, governance, financial management and operational management. Table 5 gives the indicator results for this project component.

Table 5. TIDE indicators for intervention pillar 3: Value Chain

Indicator	Baseline	Target	Achieved
% Cooperatives delivering milk directly to processor	30%	50%	76%
Total annual estimated value of investments in the DVC	n.a.	UGX 15 bln	UGX 16.3 bln
Policies promoting CSA, inclusiveness and fiscal incentives for dairy investors including value addition	0	2	3
No. of cooperatives moving from lower category rating to a higher one	n.a.	90	108
No. of cooperatives with females and youth in leadership positions	66	130	134
No. of cooperatives providing inputs and services including extension	21	60	120
No. of policy consultations with dairy stakeholders at different functional and hierarchical levels.	n.a.	2	2

Source: SNV TIDE monitoring data

Market linkages: a total of 114 cooperatives out of the 150 supported by TIDE project (76%) are delivering milk to processors. The project explained, however, that 48 are delivering through milk transporters, while 6 of the 114 are selling to open markets. That would mean that the percentage of cooperatives delivering directly to processors is 39%. Note that the indicator is only calculated as a percentage of cooperatives supported by the project. The indicator also does not take the amount or percentage of collected milk that is delivered to the processors into consideration. Often cooperatives only deliver part of its collected milk to processors.

Investments in dairy value chain: the project reports that a total of UGX 16.3 billion has been invested by dairy cooperatives to improve milk business operations, since project inception. Major investments have been in establishment of extension services provision to member farmers, digitization of records at cooperatives, staff capacity building in specialized roles such as employment of qualified accountants, capacity building of board members in governance and leadership, procurement of milk handling equipment, establishment of inputs stores to support farmers with the right animal drugs. The reported value is based on the annual financial reports produced mainly by dairy cooperatives and SACCOs. Table 6 below gives the breakdown.

Table 6. Investments by cooperatives

Area of investment	Invested value (bln UGX)
Milk handling equipment	6.5
Improving business transaction	2.8
Setting up drug stores and laboratory	4.4
Improvement in extension service delivery	2.6
Total	16.3

Source: SNV TIDE monitoring data

The evaluation team visited several cooperatives that had made investments. Investments were made almost exclusively when there was a cost-sharing arrangement with the project. Cooperatives that had benefitted from subsidised investment and expressed a need for further investment, stated that they were unable to do so without further support from the project, or any other donor.

The evaluation team observed that several of the visited cooperatives had several challenges where the project apparently had not been able to assist. Most fundamental are marketing challenges, related to milk price and links in the milk value chain. Milk prices are generally set by the processors, with little to no bargaining power of the cooperatives. Cooperatives also suffered from a lack of loyalty of its members. Milk producers have the option to sell directly to consumers, to middlemen and directly to processors. Processors regularly compete with cooperatives by setting up their own collection centres close to the cooperatives. Depending on price, farmers will opt to sell to any buyer, before selling to their own cooperative.

The project explicitly chose not to get involved in milk pricing as they did not want to be seen as a price regulator in a domain strictly led by the market and private sector. The project tried to introduce supplier contracts but the cooperatives as well as the processors were not willing to give up their freedom of choice regarding whom to buy from or sell to. Their decisions were solely based on their daily volume needs and market price fluctuation. The project, in cooperation with DDA, also tried to convince the processors and cooperatives to set a minimum average price of UGX 700 (+/-UGX 150) based on last four-year trends in monthly milk prices and procurement volumes. However this was disregarded by all concerned.

Abesigana Kashari Cooperative

Clearly one of the better cooperatives. Established in 1992 with 48 dairy farmers, currently a membership of 202, of whom 131 women and 36 youths. The cooperative employs 27 staff of whom 7 women, including the general manager. Daily milk aggregation is between 3,000 litres in the dry season and 10,000 litres in the rainy season. They sell milk to 4 processors, schools, retailers and have three window sale kiosks.

With TIDE the cooperative diversified, establishing a SACCO for financial services. Also with TIDE, a yoghurt mini factory was started.

The cooperative's challenge is the fluctuating price of milk and the high prices of inputs. The cooperative faces strong coopetition from one of the larger processors, which opened a milk collection point next to the cooperative. Despite the diversification and good management skills, the bargaining power of the cooperative did not increase and the

remain dependent on price settings by the processors. In the cooperative's view, TIDE

The policy influencing reported by the project is:

- Discussions between UCCU and Uganda Revenue Authority to revise the taxes charged on raw milk.
- Discussions between Ministry of Trade, Industry and Cooperatives and Ministry of Finance to improve coordination with Government departments and revise by-laws governing cooperative business operations.
- Supporting cooperatives under the rural electrification to acquire subsidized power from Government.

Improved business performance of cooperatives is measured by the number of cooperatives moving to a better tier. The project result is 108 of 139 assessed cooperatives (20% above target):

- 47 cooperatives from tier 6 to 5
- 15 cooperatives from tier 5 to 4
- 14 cooperatives from tier 4 to 3
- 10 cooperatives from tier 3 to 2
- 12 cooperatives from tier 2 to 1

It is striking that in the last assessment by the project, all cooperatives assessed moved by one tier without any skipping a tier. Only in 2021, seven cooperatives moved from tier 5 to tier 3 and four cooperatives moved from tier 4 to tier 2.

Dairy Farmers Association

One of the visited dairy cooperatives saw its membership reduce to less than half over the 30 years of its existence. During that period they had received twice a milk cooper on credit, but because they failed to pay the instalments the coolers were taken away from them. The paid instalments were not reimbursed. Now they are discouraged to make any investment and say they cannot afford to purchase a cooler without donor support. According to project data, the cooperative improved from tier 4 in 2019 to tier 2

The number of cooperatives with females and/or youth in leadership positions more than doubled. 44% of the cooperatives included a slot for at least one youth member in the leadership.

Agriterra has conducted kick off workshops for female leaders as well as promoting the youth businesses. 112 cooperatives were trained in gender & youth.

Eighty percent of the cooperatives reached by the project are providing inputs, extension and other services to its members. The reported services include provision of advance payments, low interest loans, support savings, guarantee members to access bigger loans from SACCOs as well provision of food for human consumption during the dry spells. Similar to what was observed under investments above, the services were created with financial support from the project. It is uncertain whether the cooperatives will continue these services without project support.

Two consultative workshops were conducted in 2023. The workshops enabled identification of possible ways how to farmers can be involved in decision making in policy formulation for milk marketing, extending of power supply to rural dairy cooperatives, how put restrictions on input dealers in the dairy sector to prevent the fake inputs in the market and promote value addition often produce yoghurt, ghee and cheese.

3.1.5 Nutrition/School Milk

Although the outcome is labelled "nutrition" in the project document, the fourth intervention pillar is exclusively about school milk: increasing the intake of milk by school going children and providing a domestic market for dairy products. The School Milk Programme (SMP) is being implemented in fourteen districts of Southwestern Uganda and 3 districts of Kampala metropolitan area. Table 7 gives the indicator results for this project component.

Table 7. TIDE indicators for intervention pillar 4: School Nutrition

Indicator	Baseline	Target	Achieved
No. of policy briefs developed by the Uganda multi-stakeholder technical committee on school feeding and nutrition	n.a.	3	3
Total annual estimated market value of milk & yoghurt distributed to schools under the SMP schools	UGX 5.2 bln	UGX 10 bln	UGX 33.6 bln
Volume of milk bought by schools per day	19,500 litre	40,000 litre	125,549 litre
Volume of yoghurt bought by schools per day	250 litre	500 litre	1,402 litre
No. and % of additional schools participating in SMP	950	2,000	1,607

% of parents participating in SMP (by school type-government aided/private)	30% (30% govt / 70% private)	70%	n.a.
No. of additional children consuming milk and/or yoghurt in schools	n.a.	500,000	992,799
No. of schools adhering to protocol on minimum milk quality requirements	0	n.a.	n.a.
Increase in dietary diversity score of learners triggered by the adoption of the school milk project	n.a.	6%	7%

Source: SNV TIDE monitoring data

Three policy briefs have been drafted, reviewed and shared with the Government of Uganda for review and approval. The policy briefs were developed with support from the National School Milk Task Force, composed of SNV-TIDE, Ministry of Education and Sports, Ministry of Health, Districts Education Officers and research institutes.

The project indicator database indicates that 2,482 participating schools procured 125,549 litres of milk per day for 922,779 students. It also states that the cumulative value of milk purchased by schools is UGX 33,6 billion.

The target of the SMP is for schools to provide a minimum of 125 ml per student per day. At some schools visited by the evaluation team, milk was provided not more than twice per week. According to the project data, schools on average buy 66 litres per day (presumably five days per week) and provide on average 168 ml per student per day.

The 12 random schools visited by the evaluation team give different results:

Table 8. School milk programme data collected by the evaluation team

School	#students	#students who get milk	Milk/day (litres)	Days/week	UGX/l	Parents payment (UGX)
1	487	113	5	5?	1,200	15,000/term
2	?	115	5	5?	1,400	7,000/term
3	1,000	1,000	50	3	1,500-1,800	6,000
4	84	84	2	5	2,000	0
5	672	672	50	2		
6	398	398	20	?		
7	?	400	35	3	1,000	
8	>300	100	3	5?	1,000	
9	1,247	1,247	300	5?	1,000-1,500	30,000
10	340	170	20	5?	1,000	2,500
11	824	706	50	5?	2,000	30,000
12	760	760	40	5?	1,700	10,000

Source: evaluation team primary data collection

From the evaluation figures (Table 8), it follows that:

- If a school is enrolled in the SMP, it doesn't mean that all children in that school receive milk.
- The average amount of milk per student per day is 70 ml, with seven out of the twelve schools giving 50 ml or less.
- The ratio between payment by parents and amount of milk given per child varies a lot, as can be seen in Table 9. While some schools don't charge extra, or only a little amount, others charge more than double the amount they spend.
- The reported amount of milk procured by schools, and its market value, seems high and not in line with was found in the schools sampled by the evaluation team. The average amount of milk per day of the sample was 48 litres. At an average price of UGX 1,420 and 253 days per year that would give UGX 27.7 billion, still nearly three times the project's target.

Table 9. Cost of milk purchased vs parent contribution.

School	Purchase of milk per term (UGX)	Parents contribution per term (UGX)	Percentage overhead
1	400,000	0	n.a.
2	504,000	1,695,000	236%
3	588,000	805,000	36%
4	1,680,000	425,000	Neg.
5	3,150,000	3,741,000	18%
6	4,158,000	6,000,000	44%
7	5,712,000	7,600,000	33%
8	8,400,000	21,180,000	152%

Source: evaluation team primary data collection

Other observations by the evaluation team at visited schools were:

- Participating schools were entitled to receive a matching grant for the procurement of energy saving cooking stoves or water purification filters. For some schools this was the motivation to enrol in the programme. According to project data, 77 schools have benefitted from matching grants for cooking stoves and 55 for water filters. Several schools indicated that even the 50% cost share was too much for them to pay for the stoves.
- The costs to pay for school milk was an obstacle to several parents to join the programme. This was particularly seen at government aided schools and rural schools. When part of the parents objected to paying, some schools decided not to participate at all, while other schools decided to accommodate the paying parents, excluding the other children from the programme. It was also reported by schools that parents who had enrolled had not yet paid by the end of school term.

Primary school in Sheema District

The school has about 600 learners of whom 200 take porridge without milk at a cost of 15,000 shillings per child per term. This school is one of the schools that was sensitised by the project, but did not adopt the SMP. Parents failed to contribute UGX 5,000 shilling towards programme. The failure of enrolling in the SMP is attributed to poverty. At the same time, the area grows a lot of bananas and coffee, both considered cash crops, suggesting parents are rather unwilling to join the programme then unable to pay UGX 5,000 shillings for their children to join.

The probiotic yoghurt component of the project, implemented by Yoba, also fits under its nutrition pillar since nearly all yoghurt produced is marketed as school feeding. According to project data, a total of 27,779 pupils from 97 primary schools are consuming 6,696 litres of yoghurt a week. Yoghurt is provided in sachets of 125 ml. The school yoghurt program is completely paid for by parents. Schools source yoghurt mostly from one of the 25 business that were established by the project.

The evaluation team visited three schools that benefit from the yoghurt component. Some collected data are given in Table 10.

Table 10. Yoghurt for school, data collected by the evaluation team.

	#students	#students who get yoghurt	Days/week	UGX/0,125l	Parents payment (UGX)
Brazavil	84	25	2	500	12,000
Little angels	672	672	2	?	8,000
Brilliant	398	398	2		

Source: evaluation team primary data collection

When discussing the yoghurt programme with programme staff and benefitting schools it transpired that nearly all benefiting schools are private schools in urban areas. In one of the three visited participating schools, only part of the parents was paying for yoghurt, resulting in about two-third of the school missing out.

The percentage of parents participating in SMP is not yet reported, as it awaits the report of the Ministry of Education's school feeding committee school assessment exercise.

District Education Officer, Mbarara District

The district appreciates the work done by TIDE in the past 7 years. The program started with a few schools (17) but spread to cover now 117 schools in the district. TIDE contributed to the formation of the School Milk Program Committees, ran knowledge and awareness campaigns, and provided items such as saucepans, cooking stoves, construction of kitchens and water purifiers on a cost sharing basis.

Noted benefits are: improved academic standards and performance, involvement of parents, strengthened school leadership, involved local governments, benefitting farmers through sales of milk. According to the DEO the program led to the expansion of the school milk program to some rural schools.

Reported challenges are: some villages have no milk and schools cannot afford to buy milk, the quantity of milk given at school is below the recommended 200 ml per child, some politicians and parents campaign that government is supposed to pay for school milk. some equipment is too expensive for some schools, poverty levels are high and impede the adaption of the programme by some households, delays in payments jeopardise relations between milk suppliers and schools, milk price fluctuations.

The way forward is fast tracking of the school feeding policy, more resource mobilization for the program and more awareness among the parents and government officials.

3.2 ISDAP

3.2.1 Introduction

During the implementation of the Multi-Annual Country Strategy (MACS) of the Netherlands in Uganda it became apparent that smallholders were not benefitting as expected from the developments in the different sectors. For TIDE II this has led to the development of the Integrated Smallholder Dairy Development Program (ISDAP) component. ISDAP targets smallholder dairy farmer households in the Rwenzori, Kigezi and Ankole sub-regions of southwestern Uganda. As per the ISDAP definition, a smallholder farmer (SHF) is one having a maximum of six acres of land, which is used for mixed crop-livestock farming activities and having at least a dairy cow. The ISDAP component has activated intervention in twelve districts.

The overall goal according to project documents is that 15,000 smallholder farmers improve their livelihoods through small-scale integrated farming, focusing on the dairy farming component leading to increased farm-level incomes, employment, food and nutrition security.
The outcomes, or intervention pillars, are similar to the ones of TIDE:

- Improved integrated smallholder dairy farm production and productivity.
- Improved milk quality.
- Improved inclusive dairy value chain.
- Improved human nutrition, by introduction of the school milk program to 50,000 learners.

SHF with his pregnant dairy cow, Rukiga

Table 11 gives the achievement of the impact level indicators for ISDAP. All tables in Section 3.2.1 give the targets for the entire project period (2022-2024), while the achievements are per September 2023, roughly halfway project implementation.

Table 11. ISDAP indicators, impact level

Indicator	Baseline	Target	Achieved
Number of Small Holder Farms who have increased their integrated farm household income	n.a.	6,000	n.a.
Number of employment opportunities (jobs) created disaggregated by sex, on farm, off farm and FTEs	n.a.	1,500	578

Source: SNV TIDE monitoring data

Data on increased income were not available yet. It is noted that there are impact indicators for improved nutrition and poverty reduction.

Regarding the increase of household income, increasing income from milk without assurance on the milk market price is challenging, but the ease of earning from milk is appreciated as money comes in regularly from the sales. Milk prices in the ISDAP area are generally higher than in the TIDE are. Marketing milk locally appears to be an easier option than aggregating and supplying to processors, given the hilly terrain.

According to the project team, activities to increase milk production were introduced to offset periodic shortages in the area (as reported by the farmers and district authorities). The strategy was to improve productivity of local animals by improving feeding and management practices. However as most households raised their cattle in an open grazing system, and primarily for manure, they were unwilling to invest in additional inputs to enhance milk production. Most of the existing milk was sold locally and/or to large processors like Pearl Dairy via local cooperatives. The cooperatives found the latter unviable as the processors' price did not cover their (high) transaction costs. With regard to local markets, there is no culture of drinking milk in the ISDAP area. While exploring market options, the project decided to link milk producers and/or cooperatives to the School Feeding Programmes (similar to SMP in the TIDE area). They envisaged that the school milk programme would not only provide an assured market option but would also contribute to nutrition outcomes by encouraging milk consumption among school children.

The reported number of on-farm jobs created is 578 full time jobs have been created on farm, of whom 16% female. Persons employed on farm are working mainly as milkers, forage collectors and cutters. These data were collected through routine follow ups by the Village Facilitators (VFs).

Avenues for women to get employed along the milk value chain are still unclear. The multiple enterprises at household level level require women's involvement but also add to their labour burden. Low levels of formal education discourage many women from seeking formal jobs.

3.2.2 Improved integrated smallholder dairy farm production and productivity.

To improve SHF's dairy production and productivity, the project follows three main approaches:

- Increased adoption of better dairy farming technologies and practices.
- Increased SHF's allocation of resources to on-farm infrastructure and technologies.
- Increased participation in village learning groups.

Table 12 gives the achievements of the component's indicators.

Table 12. ISDAP indicators for intervention pillar 1: Dairy Farm Productivity

Indicator	Baseline	Target	Achieved
Number of small holder farmer that have adopted better dairy farming technologies and practices	n.a.	9,000	4,439
Number of small holder farmers correctly using cow dung as fertilizer on their farms out of those trained in manure utilization	n.a.	13,500	1,368
Number of smallholders that have increased milk production per day, disaggregated by dairy farm size and gender of household head	n.a.	6,000	1,876

Number Demo plots established for improved fodder and Pastures	n.a.	1,500	892
Number of Nurseries established	n.a.	20	10
Percentage increase of milk sales for smallholder farmers per season. Disaggregated by dairy farm size, age group and gender of household head	n.a.	25%	6%
Number of investments made by private sector and or farmers in the Dairy technologies.	n.a.	20	8
Number of small holder farmers that invest in farm infrastructure and technologies related to dairy	n.a.	9,000	6,042
Number of SHF households/farms benefiting from ISDAP interventions	n.a.	15,000	9,906
Number of Small Holder Farmer reached with at least one ISDAP program Intervention.	n.a.	22,500	11,868
Number of extension staff trained in dairy related interventions. Disaggregated by training Area	n.a.	200	155

The figure of 4,439 farmers (29% females) is the number of farmers who have adopted at least two technologies or practices and has used them for a minimum of six months. Common technologies and practices include water harvesting technologies, cattle crushes, forage gardens, milking utensils and the use of records management.

Cattle breeding is not included in all project areas. The project's logic is to first introduce interventions such as water, forages, better management and tick control, to exploit productivity potential of local animals. Once farmers adopt those practices, genetic improvement will be introduced. The number of 3,000 farmers correctly using cow dung as fertilizer, out of the 4,007 trained farmers in manure handling as fertilizer, was obtained through routine data collection.

1,368 farmers were supported to establish demonstration plots, to demonstrate the different forage varieties available to support cow feeding and at the same time act as a source of forage seedlings for other farmers. In addition, ten farmers were supported to establish nurseries of improved forage splits. All forage varieties promoted are new to the area. Farmers who volunteer for demo plots tend to share planting material with neighbouring farmers. In addition, some LSPs set up nurseries/ multiply and sell splits. Interventions for rainwater harvesting and improved pastures are relevant to direct beneficiaries. There seems to be a bias to the better farmers, when beneficiaries are selected for demonstration plots. Justification used is that the project wants to demonstrate the better examples. The challenge is for other farmers to replicate the demonstrated investments or practices.

Rainwater harvesting system installed with project assistance

Rainwater Harvesting Tank, Kabale District

The female farmer visited received from ISDAP a 10,000 litre RWH tank valued at UGX 5 million for free as a demonstration. Notably she already had a 5,000-litre tank in her yard. The farmer has three zero-grazed cows and produces between 15 and 27.5 litres of milk per day.

Farmers selected by the VLG members for a demonstration plot often are already the better off farmers in the community, get grants or favourable cost sharing arrangements. Later on, selected farmers have to pass on the splits of the improved varieties to the other members of the VLG. Other farmers, who want to replicate, have to take a loan, which creates disincentives. High-cost demonstrations discourage adoption. While farmers may be willing to adopt an innovation, to replicate exactly as seen may be unaffordable. Relatively little effort was made by the project to stimulate adoption by surrounding farmers. While 120 demonstration plots were established to showcase quality fodder, less than one field day per demonstration plot was organised on average over the entire project period.

The competing use of limited land for food vs pasture development was addressed to some extent by promoting pastures as intercrops and/or plantation along contour bands, maintaining complementarity with existing crops/land use.

The indicator on increased milk production reports 1,876 farmers (39% female) who have increased daily milk production to 17 litres (from a baseline of 16.7 litres) with average herd size of two milking cows. This figure is only based on data collected during the dry season[1]. Likewise for the figure on increased milk sales. It was explained that 46% of the 1,876 farmers increased their milk sales by 6%, while 54% did not increase their milk sales. Apparently, most farmers prioritized home milk consumption compared to sales. On average the milk price was UGX 1,200 with 74% of the milk sold to neighbours in the community.

Farmers keep cattle primarily for manure and therefore prefer local cows and open grazing. Milk is a by-product. Investment in dairy depends on assured remunerative market for milk (which is seasonal and fluctuating).

The inability to expand farm size implies that only use of high potential dairy breeds can assist to increase productivity scales, but is challenged by limited access to AI services coupled with inability to select desired breed.

The evaluation team observed that VMMGs collect 30-60 litres per day (low volumes) and sell milk in open markets, selling the balance to cooperatives. Linking to SMP could provide an assured institutional market.

Pasture nursery in Kabale District

The nursery was already producing pasture seedlings and FAO certified before getting involved in ISDAP. SNV brought new varieties and supplied seeds and shade (structure and nets) free of charge as a pilot. The nursery owner contributed land, labour and knowledge. Clients for seedlings are mostly NGOs and one private farmer, not a VLG member, owning more than 10 cows.

ISDAP has worked with 14 private sector companies to expand their businesses in the smallholder farmers' areas of operation. Investment done by the private sector include outlets for supply of water equipment, agents to distribute bicycles for milk transportation,

[1] In dry season over 75% of the cows are not productive; in raining seasons increases of over 300% are documented.

AI agents, cattle crush, financial services, promotion of plastic poles for construction by ECO bricks, promotion of nursery beds by Holland Green Tech and investment in establishment of forage gardens by farmers.

The project reports that 6,042 farmers have invested in farm infrastructure and technologies related to dairy: rainwater harvestings (9), use of AI services (1,419), establishment of community cattle crushes (12), establishment of forage gardens and other services (4,602).

Thus far, ISDAP reports to have reached 11,868 individual farmers with at least one intervention (17% of these are persons from the same household; 31% are females. These farmers have mainly been reached through trainings.

ISDAP is promoting five to six interventions at 50% cost sharing, including rainwater harvesting systems, pasture development, chaff cutters (diesel run), forage nursery and two demo cow sheds using recycled plastics (good initiative).

Village Learning Group, Kabale District

The group was formed by ISDAP in March 2023. Members keep 1 to 5 zero-grazed cows and have less than 4 acres. Production is 15-17 litres per day per farmer. Their main reported challenge is pasture. ISDAP established four demonstration sites, providing pasture seed and training. Farmers were interested to buy a chaff cutter, but couldn't get the 50% cost share in time. The ISDAP subsidy window had closed before they had collected sufficient money. The group wants one of their members to be trained as AI inseminator. All milk marketing is individual. Value addition could make group marketing interesting to them.

Financial institutions were facilitated to offer a dairy loan through PCP for smallholder dairy farmers to access financial support for dairy production improvement needs. The loan is offered at 2% interest rate and a maximum of UGX 7 mln can be accessed. However, the financial institutions also have their own agricultural loan facility accessible to all farmers at 3% interest rate. Thus 1% interest buy down for the dairy loan encourages the dairy farmers to access the loan facility and carry on farm productivity improvements like establishment of water storage tanks, crush, animal management structures, etc. The challenge was competition from large commercial banks that buy off loans of the established small holder farmers from the SACCOs and offer them loans at 1% interest rate. The SACCOs in the end lose their bankable customers.

Now SHFs are using the PCP credit-line to purchase more choppers, while the project introduced also simple panga type choppers mounted on a working table.

ISDAP has profiled 21,885 smallholder farmers, of whom 9,906 smallholder households have benefited from ISDAP interventions (32% are female headed households). Key interventions of which farmers have benefited are AI services, forage seeds and splits, silage making, cattle crush services, records management, access to loans and trainings.

Of the 155 trained extension staff, 99 are government extension and 56 are private staff from Cooperatives and MCCs. Training on mixed enterprise systems attracts more attention since households are managing several enterprises. The project has created a cadre of VFs to provide extension services for dairy related activities. One VF covers three to four VLGs.

Private AI service providers trained by the project have scope to build service as an enterprise. They will need assured supply of liquid nitrogen, quality semen and reliable transport. The training resulted in systematic record keeping and follow-up. Fewer repeat AI indicate improved skills of the inseminators. The hilly terrain plus large area of coverage were challenges to timely provision of AI service.

To access the different services, a 50% cost sharing strategy was used. For example, RWHTs the farmer had to invest UGX 2.5 million as 50% contribution for a 10,000-litre capacity tank, for the boilers (quote from Kabwohe mothercare school), the school contributed UGX 3.0

million as 50% cost sharing basis with SNV. For the cutters, sheds, crushes, farmers accessed loans from the SACCOs depending on the cost of the technology they needed, SNV did a 2% interest buy down for the dairy loans from 3% interest rate and farmers would repay the accessed loans at 1% interest rate and the maximum limit on amount accessible for this loan was UGX 7 million.

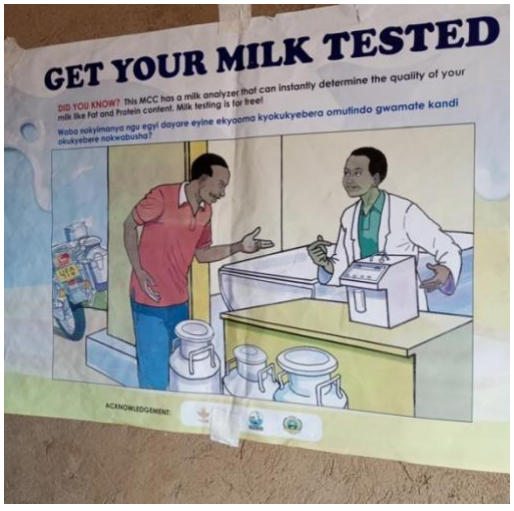
3.2.3 Improved milk quality

The objective of this component is increased adoption of better dairy technologies and practices. The achievements of indicator targets are given in Table 13.

Table 13. ISDAP indicators for intervention pillar 2: Milk Quality

Indicator	Baseline	Target	Achieved
Percentage of farmers who have adopted improved milk handling and hygiene practices at small holder farmers household level	0	9,000	2,910
The number of targeted MCCs adhering to good practices of quality milk handling	0	20	13
Number of farmers and farm workers trained in milking hygiene, milking techniques and quality disaggregated by type of trainee and gender	0	15,000	4,617
Number of milk transporters, collectors and vendors trained in milk hygiene	0	250	48
No. of Extension staff (VFs, public extension and private extension) trained in good milk quality handling practices	0	65	64
Number of Village Milk Marketing Groups established	0	100	50

Thus far, 4,617 farmers and farm workers (29% female and 8% farm worker) have been trained in milk hygiene, milk handling and quality. 2,910 farmers (23% females) from 116 VLGs (2,320 farmers) and 50 VMMGs (590 farmers) have adopted improved milk handling and hygiene practices. The project also trained ten MCCs and two cooperatives in milk quality handling. All 12 plus one small processor were found by the project to adhere to milk quality handling practices. From the data it can be deducted that 63% of trained farmers have adopted improved practices.



At present 'clean milk practices' are introduced only to raise awareness about milk quality parameters. There is no link to price (quality-based payment).

The 48 milk transporters and collectors h trained to support milk related business are 11 staff of from 11 MCCs, two personnel from Acume Foods and Kigezi dairy cooperatives and 35 milk collectors who are members of the Village Milk Marketing Groups. the 64 trained extension staff are 11 MCC staff, 2 milk processor staff and 51 VFs. Cooperatives test collective samples (lactometer/ ethanol), the have not yet started QBMPS, afraid that farmers might get lower price if cooperatives test for fat/SNF.

To create formal channels to support smallholder farmers bulk and market their milk, ISDAP facilitated smallholder farmers to create 50 Village Milk Marketing Groups (VMMGs) with a membership of 590 farmers (28% females). Some VMMGs test for added water (lactometer) and freshness (ethanol). Milk not qualifying is rejected, especially when being sold to

cooperatives or processors.

At the moment QBMPS is not feasible for ISDAP farmers. It requires investment at all levels. Existing VMMGs and cooperatives might not be able to afford it until milk sale increases (Kigezi coop will start QBMPS when they start producing pasteurised/ UHT milk).

3.2.4 Improved inclusive dairy value chain

Under dairy value chain improvement, the project follows three main approaches:

- Increased products and services offering to SHF.
- Improved investment in capacities and facilities to service SHF.
- Increased engagement of the public sector in ISDAP

interventions. The achievements of indicator targets is given in Table 14.

Table 14. ISDAP indicators for intervention pillar 3: Value Chain Functionality

Indicator	Baseline	Target	Achieved
The number of farmers with access to improved livestock support services (input supply, financial, animal health, advisory and breeding services)	0	2,000	1,419
% increase of VMMGs selling milk to off-takers. Disaggregated by type of off taker (processors, and or cooperatives)	n.a.	20%	7%
Number of SACCOs linked to PCP to access Credit Facility	0	15	22
Value of loan issued to farmers by SACCOs linked to PCP (UGX Millions)	0	UGX 800 mln	UGX 645 mln
Number of district local Governments that practice at least 1 ISDAP approach	0	6	3
Number of operational new initiatives to supply dairy support services to smallholders adopted by input private sector	0	15	8
Number of VLGs/MM Groups that have attained a Local Government registration status	0	400	300
No. of cooperatives and VLGs/ Milk Marketing Group members trained in better governance or financial literacy or/ and business practices.	0	2,500	1,315
No. of private sector partners including cooperatives/SACCOs providing dairy support services to smallholder dairy farmers. Disaggregated by type of Private sector	0	15	14
Number of cooperatives/SACCOs and Village Milk Marketing groups supported to digitize their business transactions	0	10	1
Number of Gov't extension staff trained in Dairy related interventions. Disaggregated by training Area	0	120	99
Number of joint engagements conducted between ISDAP and public institutions. Disaggregated by type of public institution and type of engagement	0	12	3

The result this far of 1,419 farmers (27% females) having access to livestock support services comes from access to dairy loans (590), water systems on farms (9), cattle crushes (9) and

advisory on forages, pastures-seedlings and records management (811).

Thus far 50 VMMGs were formed out of the target of 100, Of these, seven VMMGs are selling an average of 41 litres off-takers, mainly vendors, one processor (ACUME Food- Fort portal) and 1 dairy cooperative (Kigezi Dairy Cooperative).

VMMG farmers have undergone financial literacy training and business practices to manage milk sale; they received coolers/freezers on cost sharing, collect and sell milk locally; convert unsold milk to ghee or yoghurt for local market (cottage scale). The VMMG collection volumes are low, hence have less power to negotiate with 'big' processors. The hilly terrain poses transport issues. Volumes for home consumption are relatively small. The cooperative is a preferred market as it is assured year-round, gives advance and offers a good price. Individual share in the cooperative costs UGX 250,000 per member. VMMG members find it difficult to buy individual shares hence one share for the entire group helps to give the same shared benefits to all.

To boost production capacity of smallholder farmers, ISDAP is working with PCP to provide SACCOs with interest friendly loans which they can borrow to smallholder farmers are small interest. 22 SACCOs have been linked to PCP to access credit facility for lending to smallholder farmers. Of the linked SACCOs, four have received a credit facility from PCP and have started lending to farmers. So far UGX 642,850,000 loans has been lent to 200 individual farmers. By December 2023, UGX 8.5 bln was issued by PCP to SACCOs for lending to SHFs.

SACCO, Kabale District

This SACCO has over 10,000 members and a share capital of more than UGX 1.2 bln. It provides loans between UGX 100,000 and 50 mln and agricultural loans up to UGX 15 mln. It is one of the participating SACCOs of the SNV/PCP dairy and horticulture loans. The SACCO applied to PCP for UGX 400 mln, got UGX 300 mln approved and received a first tranche of UGX 200 mln in August 2023. The interest the SACCO is 9%/year with a six 6 months grace period. The interest for the borrowers is 2%/month.

With ISDAP the SACCO got staff training on agricultural credit, a system audit showing gaps to improve, and got introduced to VLGs. The SACCO benefits from training, approved loan appraisals, increased membership and financial input.

Farmers are encouraged to save income from daily milk sales (the cow account) for financial stability. Part of savings maybe used to pay-off product acquisition loans from the SACCO (households can survive on income from other enterprises).

With co-sharing arrangement (50% subsidy) discontinued, it is not feasible for SHFs to acquire assets/technologies with 100% loan from SACCOs, even if the interest rate is relatively low (24% per year).

The evaluation team observed that farmers were linked to SACCOs and that SACCOs' capacity to assess and manage agricultural loans has been built. In a multiple enterprise set up, SACCOs have to monitor that funds are used for the agreed purpose: PCP loans are only for dairy enterprise. SHFs households prefer to mobilise resources from their own community, followed by MFIs. The tend to use SACCOs as a last resort. Assets created by the project can also be used a collateral for bigger loans.

ISDAP has linked 14 companies to smallholder farmers to provides services:

- Two companies providing farm implements (4DiZs & High Mark)
- Two companies providing water and construction materials (Create Tank & Eco Brick)
- Two inputs companies providing seeds/splits (Holland Green Tech and Baraka company)
- Two companies providing AI services (Rwenzori Breeders & URUS)
- One milk processing company (ACUME Foods)
- One dairy cooperative
- Four SACCOs providing financial services (Muhame SACCO, Ebo SACCO, Hakishenyi SACCO & Butuuro SACCO).

Eight operational new initiatives have been initiated by the private sector to support small holder farmers:

- Rainwater Harvesting initiative managed by Crest Tanks
- Forage seed nurseries shades kick started by Holland Green Tech
- Use of plastic poles to set up nursery beds initiated by ECO BRIX
- Supply of forage choppers initiated by High Mark and 4DIZ
- Purchase of milk from the village marketing groups by Acume Foods
- Creation of smallholder dairy loan products by SACCOs under the PCP partnership
- Establishment of cattle crushes by Laps
- Sell AI to farmers by Rwenzori breeders and URUS.

Linkages to government animal healthcare and breeding services are weak. As per the project staff this is because veterinary healthcare is strictly regulated by the government and the project is not allowed to provide those services. Nonetheless in consultation with the District Veterinary Officers (DVOs), the project facilitated training of private AI technicians. These service providers purchase semen and liquid nitrogen from the National Animal Genetic Resources Centre (NAGRC) and/or private companies such as URUS, and charge farmers differentially based on semen quality. The number of inseminations per conception varies. Additionally the project also linked a local breeders association (Rwenzori Breeders Association) with a BMGF funded project to promote AI adoption by SHFs.[2]

One cooperative was supported to digitize its transactions with aim of improving records captured at the cooperatives. An additional 50 VMMGs are being supported to become formal structures to support the milk business and later will be supported to digitize their services. Thus far digitization is not evident; VMMGs that were visited all maintained their records in register books.

Field days have promoted and improved visibility for input dealers and created awareness among farmers about different access channels for the various input needs. Most promoted inputs/technologies are made available through private dealers certified by the project, e.g. chaff cutters from 4Diz, forage seed from Simlaw Seed, rainwater harvesting tanks from Crest tank, AI semen from Urus/ Agric, etc.

ISDAP has facilitated 300 VLGs register at district level. This registration will enable the VLGs to access credit from Banks or SACCOs. 1,315 members (29% female) of VLGs have been trained on governance, financial literacy and business practices.

VLGs/VMMGs are still relatively new (oldest 1 year old) and need time for institution building before they can be formally incorporated as CBOs and/or cooperatives.

Working as groups to learn, access finance, adopt a technology and use it together is

[2] Implemented by URUS, the Africa Dairy Genetics Multiplication Programme helps SHFs to use artificial insemination (AI) to improve their overall herd genetics, resulting in increased farm incomes, healthier and more productive dairy cows, and better livelihoods for farmworkers. The Gates Foundation grant has enabled URUS to scale the programme. (https://globaldevelopment.urus.org/projects/gates-foundation-africa-dairy-genetics-multiplication-program/)

appropriate given very small number of animals owned per household. However, independent living and decision making at household level challenges technology access and use as groups. Group access to finance for technology adoption is hampered by lack of group collateral, yet many individuals have low capacity to borrow enough funds to afford better technologies.

The 99 trained government extension workers were trained in disease control, ten golden rules for tick control, silage making, animal nutrition and milk handling hygiene.

ISDAP has conducted five joint activities with public institutions: two joint activity monitoring, signing of MOUs with 12 districts, with two Universities (Kabale & Fort Portal) and establishment of a standard zero grazing unit with Mountains of the Moon University as well one at MICAH vocational school farm.

District officials met by the evaluation team seemed more conversant with SMP interventions than others. District Veterinary Officers find VLGs useful as a collective for extension services provided by LOA units (each covering 500 households). The project helped to train LOAs in dairy husbandry, like hay & silage making and tick control. It was observed that demo plots are usually on the better off farmers who have 200 m^2 land to spare.

3.2.5 Improved human nutrition

The interventions for improved human nutrition are aiming for three outcomes:

- Increased number of school children consuming dairy products.
- Increased number of schools participating in SMP.
- Increased procurement of milk by schools from SHFs.

The achievements of indicator targets for this component is given in Table 15.

Table 15. ISDAP indicators for intervention pillar 4: Nutrition Activities

Indicator	Baseline	Target	Achieved
Number of children consuming dairy products, disaggregated by age, gender, district	0	50,000	36,155
Number of schools involved in the school milk program	0	250	94
Volume (litres) of milk bought by schools per day	0	?	1,420 l
Number of schools involved in the school milk program			
No. of cooperatives/ Milk Village Marketing Groups or processors delivering milk or yoghurt to schools	0	50	20

Project data show that 36,155 children from 94 schools are currently enrolled in the SFP in four ISDAP districts. Reported total volume of milk consumed in the ISDAP SMP is 1,420 litres per day. That would come down to an average of 43 ml per student per day. 93% of the schools are primary schools and 76% are privately owned schools. 24% of the schools source the milk from Kigezi Dairy Cooperative, 57% from individuals farmers, 14% from vendors and 5% from school farms. The project is still trying to link more of the newly formed VMMGs to schools for supply of milk.

SMP covers children from five to eleven years old, in nursery, and primary 1-4. Parents and schools see SMP as a way to provide added value to the porridge taken as breakfast. Adding milk in porridge improves its taste and therefore is attractive to children. However, the quantity of milk per child per week is very little, on average about 5 ml (based on evaluators' primary data). This seems too little to conclude that SMP contributes to better nutrition.

Primary school in Kabale District

The school produces vegetables to feed boarding students. ISDAP introduced milk to add to porridge. Out of the 487 students, 113 boarding students now receive milk porridge. According to data given by the school head teacher, the costs of milk per term are UGX 486,000, while parents together contribute UGX 1,695,000 per term.

The school has been struggling to convince parents to join SMP. The LSP addressed the PTA general meeting, but the PTA remained divided. Only 20 parents were willing, later increasing to 100 students benefitting out of a total of more than 300. Parents must pay UGX 15,000 per term for school milk in porridge. At start of term most parents had not paid. Milk is sourced from one farmer parent. SNV offered to provide kitchen utensils, but the 50% cost

Unequal economic situation was quoted as the main reason for unequal consumption of milk among children. Lack of money to pay was the main reason for not participating in the School Feeding programme including milk. Most parents of children studying in government schools understand the value of milk for the overall health of their children and expect government to pay/ subsidise the cost of milk. On the other hand, the parents who were unable and/or unwilling to pay for the School Milk Programme were not convinced of the benefits of milk consumption. Their poor economic condition compelled them to sell the milk they produced rather than consume and experience the benefits. This made adoption of SMP difficult and some children being completely left out of the programme. There is need for continuous sensitization within communities for everyone to appreciate the role of milk in child nutrition, growth and development, especially in non-milk consuming areas.

One of the objectives of this component is for SMP to provide a market opportunity for SHFs. Schools visited prefer to buy milk from private dairy farms (non-parents) or maintain their own cows. VMMGs need alternative market options during school vacations. Some teachers are of the view that yoghurt is not good for children.

4 Analysis and conclusions

The conclusions of the evaluation are presented in this chapter as answers to the evaluation questions from the ToR, per OECD/DAC criterion.

4.1 Relevance

4.1.1 How do different stakeholders (community members of different (socio-economic background, local government at different levels), assess the relevance of the project to their needs and priorities?

The evaluation team interacted with a wide variety of project stakeholders and all consider the project relevant. Central and local government in particular indicated that the project operates within, and is supportive of government policies and priorities. Especially the school milk programme is considered relevant as it complements the school feeding programme of the government.

Farmers' perceptions about the relevance of the project vary. Medium and large dairy farmers in the southwestern districts saw the project as a means to help them enhance and commercialise their milk production through service arrangements and market access. For the smallholder farmers (in ISDAP), it was seen as a way of supplementing their livelihood strategies by adding to their resources – land productivity (grasses on bunds), water resources (rainwater harvesting), farm structures and equipment (cattle sheds, chaff cutters), knowledge, skills and social capital (learning and marketing groups).

4.1.2 To what extent has the project taken the different needs and priorities of different groups into consideration?

Priorities are set by the project, rather than the stakeholders. Priorities were set based on technical criteria, rather than by consultation of the target groups of the project. For example, farmers expressed needs in effective disease control and genetic improvement of cows, while the project prioritised improved feeding, increased water availability and better milk handling. The main needs and challenges of smallholder farmers are cattle diseases and pests/ticks, poor quality low productive animals, high cost of drugs, shortage of (improved) pastures and fluctuation in milk prices, which as yet have not been fully addressed by the ISDAP programme. The project did develop activities to address tick-borne diseases by establishing eight youth groups training in tick prevention, treatment and the introduction of community-based cattle crushes.

TIDE II project goals and outcomes were set to align and build on the outcomes realised with TIDE I where most interventions – for example, facilitating low-interest loans to help farmers take up the innovations like rainwater harvesting systems - were designed on a cost sharing basis keeping the needs of medium and large scale farmers in view. In the course of TIDE II the cost-sharing facility was phased out and the SACCOs took over the role of providing credit.

Attention was given to the needs and priorities of (i) large cattle-keepers representing Ugandan political leadership and dominant actors in the dairy-livestock sector, to intensify production and access remunerative markets, (ii) the DDA with regard to promoting the sector and quality concerns preventing access to bigger milk markets, and (iii) the Dutch government's priorities i.e. issues of relevance to the NL food policy - nutrition, gender and employment.

For many schools, and parents, school feeding is a challenge, and school milk is then not necessarily the first priority. This is especially the case for government aided schools and in poor areas A first priority would be to get any kind of school feeding started.

The biggest challenge of farmers and the dairy cooperatives is the fluctuating, and often low milk price. That affects their motivation and capacity to invest, hence is a priority. The project has not been able to address this important aspect. Attempts were made but farmers are often not loyal to their cooperatives and sell their milk to anyone who has the highest daily price. [3]

4.1.3 To what extent has the project addressed the underlying issues that led to the development of the project?

The underlying issues leading to the development of TIDE II are reported as a growing market for milk, in turn spurring a more intensive dairy farming system, requiring investments in water provision, animal feed, farm infrastructure and improved management practices. However, if the costs of intensification are too high, then intensification worsens the income situation for the farmer. Therefore, along with market development, the main objective of TIDE II was to ensure that the costs of production are as low as possible, which is done by increasing productivity per cow and per acre.

The project has tried to address these underlying issues by (i) training farmers on efficient dairy husbandry, (ii) supporting the input supply market, including extension services, and (iii) facilitating access to finance, and iv) providing financial incentives for farmers to invest in means of dairy production. A good cost/benefit analysis of the various intervention seems to be lacking. For example, demonstration of drinking water for animals was done by the provision of expansive water tanks (UGX 5 million). For a smallholder farmer this is a large investment and it is questionable whether there is sufficient return through milk production, in comparison to investment in another activity of the household.

4.1.4 The extent to which the objectives of TIDE II are consistent with beneficiaries' requirements, country needs, and partners' and donors' policies.

This question was largely answered under 4.1.1 and 4.1.2 above, where it was concluded that the project objectives are partly consistent with the needs and priorities of the ultimate beneficiaries and fully with country needs.

The conclusion on consistency with the donors' policies is also "partly". The project was conceived and implemented under the aid and trade policy of Government of the Netherlands. The project therefore stimulated private sector in Uganda (LSPs) and established linkages with private sector in the Netherlands. However, the overall objective of poverty reduction was not much regarded.

4.1.5 How has the context in which the project was implemented changed over time, and how has this influenced the assessment of relevance of the project and its components?

An important contextual factor, perhaps even the main justification for the project, was the growing market for milk, and increasing prices, based on increasing exports to Kenya and the Democratic Republic of Congo (DRC). During project implementation, the export markets proved to be unstable and milk prices kept fluctuating. On the other hand, foreign investment in increasing milk processing capacity within Uganda provided an opportunity for local producers to generate more marketable surplus.

[3] Project management remarks that donor funded projects should not interfere with private sector pricing levels, perhaps only with the pricing structure/modality and this is addressed by the introduction of QBMPS.

The project realised that schools provide a more stable and even larger market for milk. Schools/ SMP is seen as an institutional market with potential to grow. If school milk was to be provided country-wide, the national milk production wouldn't be near enough to supply all.

Another important consequence is that the drive and capacity to intensify and invest is much smaller than assumed at the start of TIDE II.

An obvious unforeseen contextual factor is the COVID-19 pandemic of 2020-2021. For two years project operations were affected and, for example, couldn't organise any training in the field. Group meetings and inter district travel were prohibited. Because schools were closed for two years, the school milk programme was fully interrupted and the milk providers lost their market. The QBMPS pilot also came to an end with the COVID-19 pandemic and the initiative hasn't picked up since.

There was also a change of policy emphasis by EKN in the first year of implementation of TIDE II. The importance of compliance with the poverty alleviation goal of Dutch development cooperation became more prominent, which led to the formulation and start of the ISDAP component. Note that the project goal of the project was poverty alleviation from the start.

4.1.6 To what extent is the design of specific interventions relevant to the direct beneficiaries?

The relevance of interventions for direct beneficiaries is different for the ISDAP component and the core TIDE II project. For most of the TIDE II beneficiaries, namely medium to large farmers, dairy cooperatives and LSPs, the interventions are relevant. The technologies introduced through training and financial incentives, are relevant for a more efficient dairy husbandry system. Cooperative strengthening is in principle relevant, as a stronger cooperative increases bargaining power of producers. However, at present the role of most of the dairy cooperatives is primarily limited to milk aggregation and sale.

For the school milk programme, the intervention is relevant for (private) schools that are willing and capable to participate. For schools without the capacity to adopt a parent led SMP, the intervention is not relevant.

The relevance for farmers in the ISDAP component varies by type of farmers and location. ISDAP follows the same Theory of Change and components as TIDE II, however there is a marked difference in the way the technical interventions are implemented. Farmers in the ISDAP areas are mixed crop-livestock smallholder farmers, and for most dairy farming is a very small income generating activity. They have less land and keep local cattle mostly for manure. Technical interventions such as developing fodder farms that have been piloted and/or demonstrated in the project are not entirely feasible or replicable for those smallholder farmers. Over 5.000 farmers have adopted the improved forages to be planted in between coffee and banana trees, along the trenches to avoid soil erosion whereas most farmers cultivated up to 200 m^2 with improved forages.

4.1.7 Could the relevance of the project have been made higher? If so, how?

The relevance for TIDE II could have been higher if the project had been more effective in addressing milk price and milk marketing issues. The project would also have been more relevant if the project goal was monitored and necessary adjustments were made earlier. Cooperatives have been strengthened in their overall management capacities, but their function in the dairy value chains has not changed much. Barring a few prominent cooperatives (in few districts) who enjoy the patronage of large farmers, most cooperatives operate as milk collection centres with sizeable retail sale of raw milk. A more targeted approach to strengthen the capacity of cooperatives to sustain procurement and improve

their bargaining power in the domestic market would have made the project more relevant. As mentioned before, many farmers are not loyal to their cooperative and sell their milk daily to the highest buyer, even bypassing their own cooperative. Mindset change on this needed to get farmers and cooperatives united to achieve barging power. Because UCCCU is effectively not working, the project started to organise cooperatives into regional unions to achieve purchasing and bargaining power.

A stronger link with central government, with more policy influencing, would have made the project more relevant as well. In that case, pilot activities could lead more directly towards policy change. Towards the end of the project (March-June 2023), TIDE started working on a stronger buy-in by government by establishing national working groups and task forces. The effective period of these multistakeholder platforms was too short to lead to measurable results. It should be noted that due to the COVID-19 pandemic, only by mid 2022 meetings and travel was allowed and that the elections led to many changes in political positions.

ISDAP would have benefitted from a better problem analysis and a project more targeted to mixed farmers. The current ISDAP component is modelled on TIDE, which is not the most relevant model for SHFs and poverty alleviation.

4.2 Coherence

4.2.1 To what extent was the design and implementation of TIDE II coherent with the objectives of the NL strategy for food security?

The Dutch strategy for food security is organised in four result areas:

- End malnutrition by 2030.
- Contribute to doubling the productivity and incomes of small-scale food producers by 2030.
- Contribute to more ecologically sustainable land use.
- Better preconditions for food and nutrition security.

The project's design and implementation were coherent with the strategy by:

- Improving nutrient intake of school going children through the school milk programme.
- Increasing the access to milk in general.
- Increasing farm productivity and income.
- Increasing market access to farmers.
- Contributing to more eco-efficient use of farmland.
- improving farmers' knowledge of and access to technology.
- improving the position of women in agriculture.

TIDE II derives its policy relevance from working on issues of private sector development, dairy value chain and food security, thus aligning with the Dutch development policy formulated by the Ministry of Foreign Affairs. The food security policy links food security to agricultural productivity, household nutrition, improved value chains and business environments. TIDE II focus on entrepreneurial activity and value chain development through building of partnerships that serve as a channel for inclusive business and poverty reduction through employment creation. The latter however does not appear to be well developed in the project e.g. the visited women group producing and selling yoghurt reflect an oversight of women-headed households living in extreme poverty.

Milk production occupies a prominent place which has direct connection to private sector/ market development (functional upgrading, new products, new markets) as well as to aspects of enabling environment (e.g. skills training and increasing the service provision base). Direct nutrition outcomes are only partially reflected in the project. Linkages to food security are assumed to manifest themselves in terms of increased milk availability and higher incomes for farmers and - both if which could lead to increased food security. As baseline data for the

number of SHFs who have increased their integrated farm income was not available (see Table 11) the evaluation team was not able to conclude if the project has led to increased incomes that might have in turn contributed to improved food and nutrition security by virtue of earning more.

4.2.2 To what extent was coherence sought and achieved with relevant food security projects in the Netherlands embassy portfolio?

The project has been cooperating with the following food security projects financed by EKN:

- BRIGHT, implemented by IFDC. Joint learning, joint development of PIP implementation, cooperation in SMP.
- CommonGround, implemented by WENR and ISSD, watershed management. Joint learning, joint development of PIP implementation.
- A-GRIP, implemented by Cordaid. Result based finances. A-GRIP gets contacts from projects like TIDE. Joint learning.
- SAY, implemented by ASVI. Assist implementation of yoghurt project for youth groups.
- CASCADE. Joint learning, cooperation in SMP.
- HortiMAP, implemented by TechnoServe. SNV shares an office in Kabale with TechnoServe. exchange of information. Linking farmers to VLGs. Joint learning, access to finance, cooperation in SMP.

4.2.3 To what extent are the project's achievements in line with policies and plans of the national and local authorities in the targeted areas?

As mentioned in Sections 4.1.1. and 4.1.2 above, the project operates within the country's policies and plans, starting with the third National Development Plan (NDP III) 2021/22 – 2024/25, which contributes to the Uganda Vision 2024. One of the priority areas of its Agro-Industrialisation programme is increasing the production of milk. The plan also calls for investments to increase agricultural production/productivity and agro processing. The capacity of the private sector must be strengthened to drive growth and create jobs. The project has been responsive to these objectives, by stimulating investment in the dairy sector (cooperatives invested UGX 16.3 billion in the sector; 4,720 TIDE farmers increased their income), creating jobs (TIDE created 1,803 jobs on farm and 3,201 jobs off farm; ISDAP created 578 jobs) and promoting value addition through yoghurt making.

The school milk programme is complementary to Uganda's school feeding policy. The Uganda Education Act 2008 law gives the responsibility of feeding children while at school to parents and guardians. The parent led School Feeding Programme encourages parents to voluntarily contribute to include milk in the school feeding programme. The Government of Uganda has been debating plans to make milk mandatory on school menus (without a decision thus far).

4.2.4 To what extent was coherence sought and achieved with other projects in the targeted area?

The project has been cooperating with the following other projects in the project area:

- Ripple Effect, funded by Master Card. TIDE supports them with its forage model and use E-Dairy platform.
- URUS, funded by BMGF. Cooperation in AI.
- EARNED, funded by NUFFIC EARNED. The project supports a practical part of blended learning.
- IMPACT CLUSTER, funded by RVO. The project assisted by linking them to the project's Network.
- CIAT led "Grass-2-Cash@Sale" project.
- FAO "Sustainable, resilient and inclusive food systems development".
- KIT led "Feed and Forage Seed Business Models Research Project".

- NEADAP (Netherlands East African Dairy Partnership)
- GAD (Global Agricultural Development Foundation) financed by RABO foundation.
- SEFFA (Sustainable energy for smallholders) project financed by IKEA foundation.

4.2.5 Could the coherence of the project have been made higher? If so, how?

The current Dutch strategy for food security puts much emphasis on resilience to shocks in relation to nutrition and income. There is no data on crop losses due to climate shocks. Especially for ISDAP, more coherence with the FNS strategy could be expected. ISDAP did not focus on productivity enhancement of crops and other livestock. The contribution of SMP to nutrition outcomes is negligible. Schools as a market for milk are at present not substantial buyers of milk. Increase in milk production is limited as SHFs mostly rear non-dairy animals.

4.3 Effectiveness

4.3.1 Review the quality of the results framework.

With reference to the results framework of TIDE presented in Figure 1 below, at the bottom of the results framework is Market Systems Development (MSD), cutting across the four intervention pillars of the project. This may be a source of confusion. MSD is a defined development approach that approaches poverty reduction based on the central idea that the poor are dependent on market systems for their livelihoods. Therefore, changing those market systems to work more effectively and sustainably for the poor will improve their livelihoods and consequently reduce poverty. An efficient and effective collaboration between these actors is key to be able to respond to developments in the market[4].

A market systems development approach better serves investment: ready, better positioned to manage risks and food-secure farmers (mostly medium scale and large). Increased access to financial services and stable input and output markets provide incentives to change practices. Private/paid service provision is an option for such farmers.

SHFs have more heterogeneous capabilities and resources (land, labour availability that is critical for intensive dairy farming in the hills) that affect their adoption. They tend to prioritise food security over profits. Subsidies temporarily help to increase access to technologies and inputs, but seldom sustain.

This interpretation of MSD is not further developed or applied in TIDE. Rather than a value chain approach, looking to influence those links that will improve the livelihood of the poor, the project has defined four intervention pillars, with pre-described activities. The logic of the intervention pillars (interventions – outputs -outcomes) is clear, but the causal pathway between the intermediate outcomes to the long-term outcomes is based on several assumptions, all of which have not held good. For example, increased adoption of QBMPS for raw milk would result in increased payments for good quality milk. This assumes that the market actors (cooperatives, processors, traders, retailers) have established quality testing facilities at all collection points, are consistently testing for fat and SNF, and arriving at the price of milk based on those quality parameters. Likewise the increased awareness and distribution of milk and milk products in schools resulting in an expanded domestic market for dairy products is not supported by data. Currently the quantum of milk procured by the schools is only a small percentage of the total milk produced and sold.

Moreover how the four long-term outcomes contribute to the three impacts is not evident. Especially the impact of improved nutrition seems overtly incidental and ambitious. By the choice of beneficiaries and activities it is unlikely that the project was going to achieve the overall goal of poverty reduction.

[4] See also: fairandsustainable.org/services/market-systems-development/

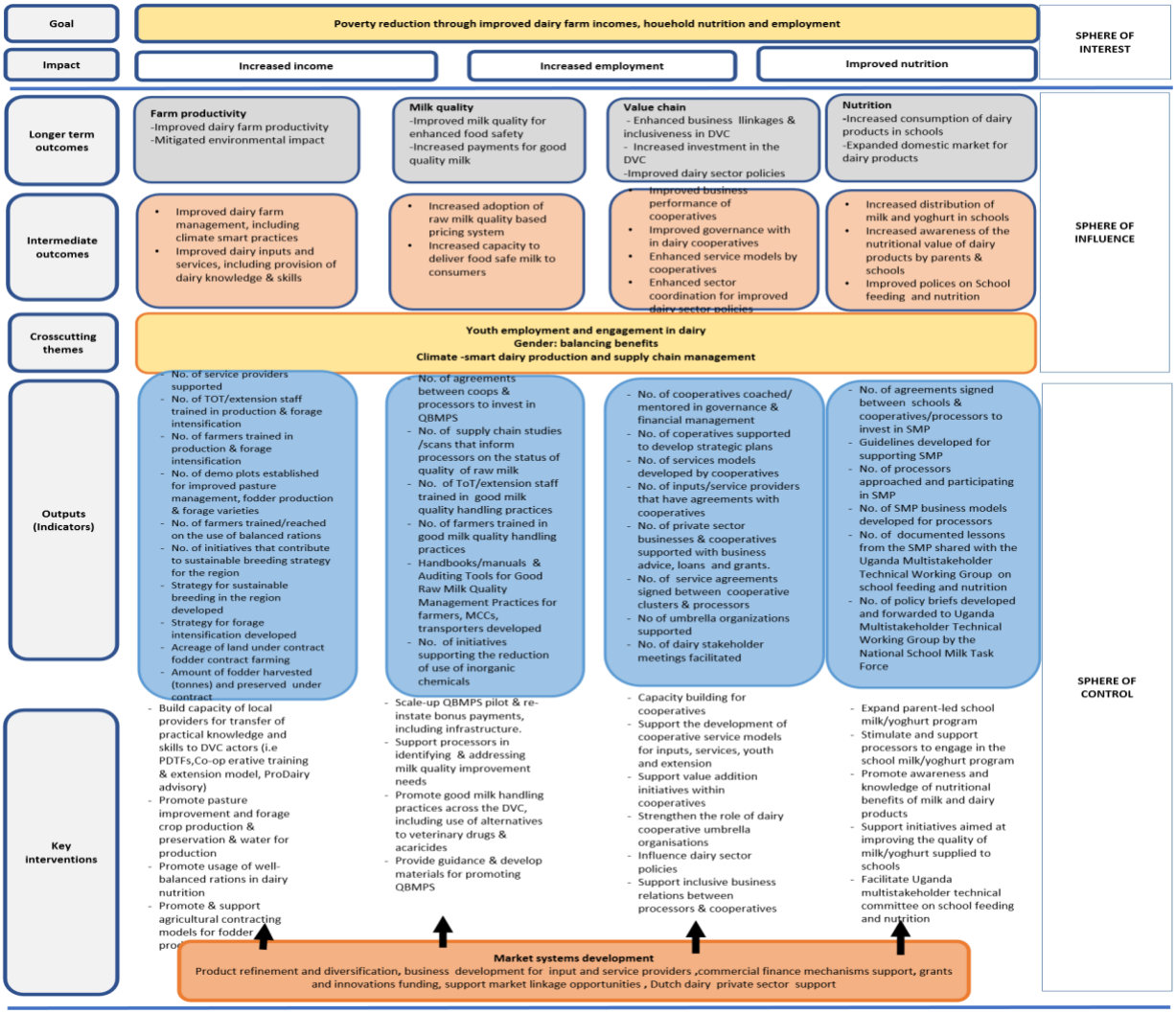
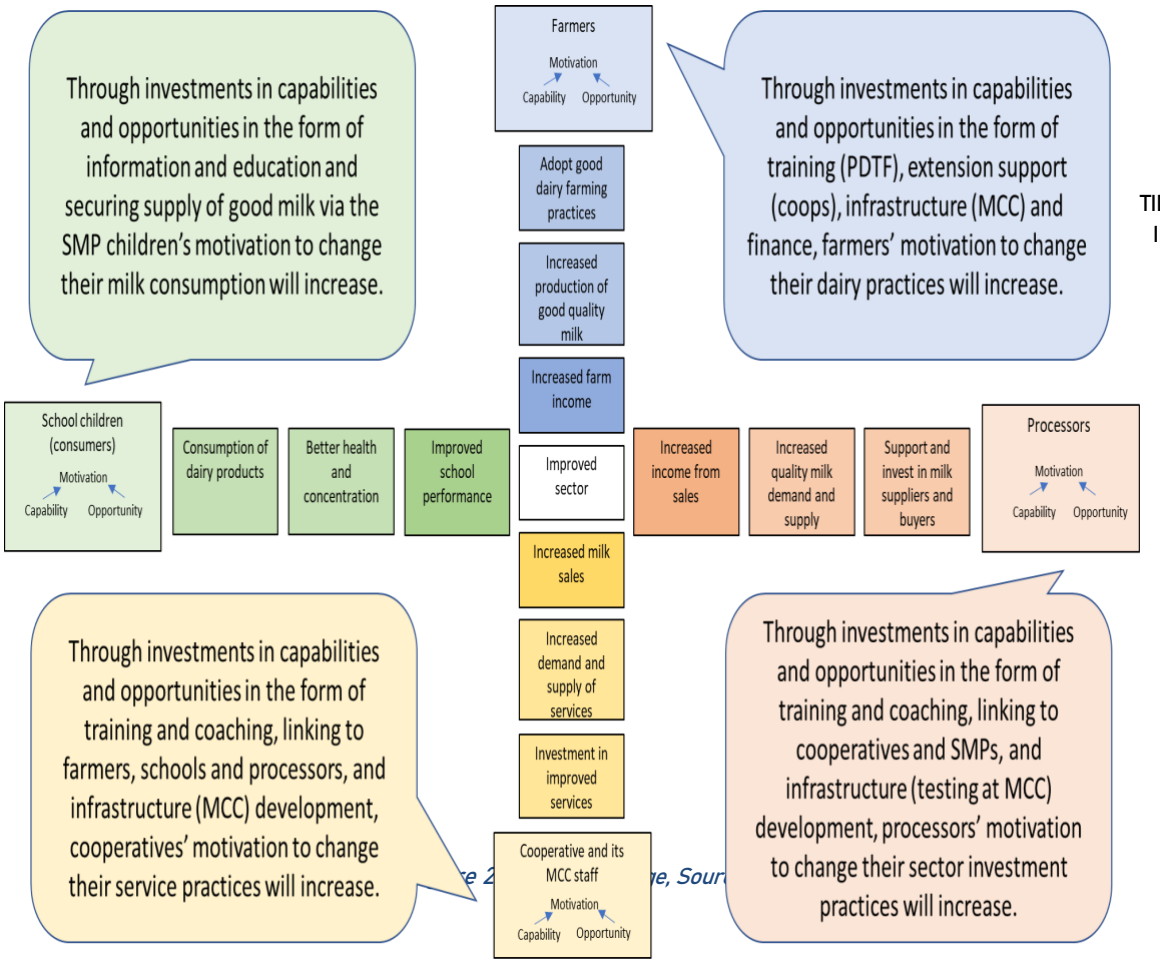


Figure 1: TIDE II Results Framework, Source: TOR

Related to the project's results framework is the project's Theory of Change (ToC), copied as Figure 2 below. The ToC is presented in the form of a cross, with no links or interaction between the four arms, each representing a different group of project stakeholders. The centre of the cross is "improved sector", presumably the result of increased farm income, increased income from sales, increased milk sales and improved school performance. The figure is a very poor representation of a ToC, if one at all. Contrary to what a ToC should do, it provides no insight in how the project would achieve wanted and sustainable change.

4.3.2 Assess the baseline, midline and endline data against the indicators.

There is a large discrepancy between the indicators in the project document (August 2019) and the indicators tracked by the M&E system at the time of evaluation. The table below is taken from the project document, the indicators from the latest M&E report were used in the tables in Chapter 3 of this evaluation report.



TIDE II

The evaluators were informed that the indicators were revised in 2021. The focus was put on outcome indicators and new targets were set. After that there was no systematic tracking or reporting of output indicators, but outputs were reported in annual narrative progress reports.

The indicators are generally not SMART: specific, measurable, achievable, relevant, and time bound. For example: "number of farmers with increased milk production per season". It does not indicate by how much milk production should increase. And what is meant "per season"? That is not reflected in the measurement. "Number of MCCs investing in QBMPS": does any amount of investment count? A MCC buying a lactometer counts the same as a MCC investing in a milk cooler?

Often there is also no baseline, as indicators are only measuring what the project wants to achieve, e.g. number of jobs created, or number of farmers with increased milk production. The baseline is then always nil.

Indicators do not specify to what population they apply. For example: "reduction in intensity of enteric methane at cow level". It would be relevant to monitor this indicator for the entire project area, but only farmers using Rumen8 are considered. The indicator therefore only measures reduction of methane of a very small part of the livestock population. For many other indicators, data are only collected for farmers or school participating in a certain activity of the project.

Table 16. TIDE II indicators as per project proposal of August 2019

Sector transformation	Outcome indicator	C	1	Output indicator	1
Market level (processors)					
Export market	Estimated export volume (in USD/ltr)	3		-	
Invest in chain	Processors investing in chain (qlt)	3		-	
Domestic market	Number of children benefitting from school milk program (% girls)	4	Y	Number of schools participating in school milk	Y
				Volume of milk sold through school milk (ltr/yr)	N
	Number of children benefitting from pre-school milk program (% girls)	4	Y	Number of schools participating in pre-school milk	N
				Volume of yoghurt sold through pre-school program	N
	Estimated growth of domestic market	3	N	Number of processors (SME) assisted to reach market (volumes, products)	N
Bulking level (cooperatives)					
Bulking: voice	% of cooperatives delivering milk directly to processor	3	N	Amount of milk, marketed by cooperatives that are part of UCCCU	N
				Membership of cooperatives (market share)	N
				Number of women in cooperative leadership positions	Y
Services	Number of cooperatives providing services to farmers for productivity	3	N	Number of farmers reached with services	N
	Number of cooperatives participating in QBMPS	2	N	Number of farmers participating in QBMPS	N
	Number of cooperatives with low risk rating	3	N	Amount of bonus paid as part of QBMPS	N
Input market					
Knowledge	Number of sustainably operating PDTFs	1	Y	Number of farmers trained at PDTFs	Y
Products/services	Companies delivering products and services to dairy farmers (number, turnover)	1	N	Number of farmers investing on their farm	Y
	Quality of products and services on the market (qlt)	1	N	Number of Dutch companies providing products or services to dairy farmers	N
Finance	Finance institutions providing loans to dairy farmers (number, loan portfolio)	1	N	Number of farmers accessing loans	N
Production level (farmers)					
Productivity	Increase in productivity (for selected farmers)	1	N		
Seasonality	Farm gate price of milk (and fluctuations)	1	N		

Notes: C = Component (1 = productivity, etc); 1 = Is indicator part of TIDE 1 (Yes/No)

Although the overall project goal is "poverty reduction through improved dairy farm incomes, household nutrition and employment", there is no tracking or reporting of poverty levels, and of the three targeted impacts, only job creation is reported on. In terms of achievements, achieved versus target, the project scores very high. On more than 85% of the indicators for TIDE II the project achieved higher results than targeted. ISDAP is also on track of achieving a similar result, with achievements of 50% or more on most indicators.

4.3.3 To what extent did the project achieve its outputs, both in terms of quantity and quality? (explain reasons for over-/underachievement)

As explained above, achievements of project outputs can be extracted from annual project narrative reports, also referred to as annual reflection reports. The latest report is on 2022. Some more recent output data were presented separately to the evaluation team.

Generally, the project has been achieving its annual and cumulative outputs. Many are described in Section 3 of this report. The latest update was that 8,153 dairy farmers are impacted by TIDE interventions. Seven more processors were mobilised in 2022 to launch QBMPS, bringing the total to 11 processors. 130 cooperatives were supported by the project and cumulatively a total of UGX 14.9 bln was invested in the dairy value chain, achieving 99% against an overall end-of-project target of UGX 15 bln. UGX 6 bln was accessed as loans by cooperatives members to support farm services. Overall, 2,113 schools were sensitised about the school milk programme.

Main reported outputs for ISDAP are that 22,218 SHFs were registered with the support of the district staff and all these are validated through the profiling exercise, resulting in a potential of 12,272 SHF going to participate in the ISDAP interventions. This finding also led to a change of the project target from 5,000 to 15, 000 SHFs to be reached by the project in 2024.

Specific outputs achieved under ISDAP include;

- Farm profiling of 12,000 farms in nine ISDAP districts
- Benchmarking (baseline)
- Identification and selection of 50 Village Facilitators
- Formation of 602 Village Learning Groups (1,500 farms)
- Implementation of 1,368 forage demo gardens
- Forage nursery construction 8 out of 10 planned
- Rainwater harvesting units 10 out of 12 planned
- Cowsheds 2 out of 4 planned
- Training of VFs (50) and DLG extension staff (77) in PDTFs
- Training in extension and communication (50 VFs and 10 ISDAP/TIDE)
- BP for Rwenzori Breeders association
- Scoping Study of Tier IV Microfinance Institutions
- Study to document the contributions of small ruminants to households and their overall impact on poverty reduction and sustainable rural development- completed in December 2023
- GESI strategy and development of a GALS (Gender Action Learning System) tool kit
- Participation in the WENR PIP taskforce for the development of PIP modules
- Study on the causes/effect of soil and environmental factor parameters that affect performance of ISDAP introduced new forage varieties (to be completed in January 2024)
- Business Diagnosis for Tooro dairy (completed in December 2023)

4.3.4 To what extent did the project achieve its outcomes, both in terms of quantity and quality? (explain reasons for over-/underachievement)

The indicator tables in Section 3.1 of this report show that TIDE II achieved nearly all of its outcome targets, with most of them exceeding. Project management kept a close eye on the indicators and steered where possible to ensure achievement.

It should be noted that the indicators and their targets were revised at a late stage, when management had a good idea of what could realistically be achieved. The indicators and their targets were approved by EKN in 2021.

4.3.5 To what extent was the program logic (particularly the assumptions linking outputs to outcomes, and the risk assessment) adequate?

Section 4.3.1 above already indicated weakness in the programme logic. While MSD is mentioned as the cross-cutting approach, this was not applied as would be expected. The project worked in four rather isolated pillars, with pre-set targets and activities. A consolidated drive towards improved farm incomes, household nutrition, employment and ultimately poverty reduction is missing. Instead, the project aimed for sector transformation through packages of training and subsidies, assuming it would lead to the desired impact and goal.

In the project document this is worded as follows: "The assumption (or theory of change for sector transformation) is that if both export and domestic markets continue to expand, this will exert an upward pressure on prices due to increased demand. To deal with competition, processors will be encouraged to invest down the value chain, creating stability and efficiencies in the chain. The enhanced competition for milk from farmers can

strengthen the role of cooperatives in the chain, if they also go beyond marketing of milk to move into service provision for increased productivity. The pull of the market will encourage farmers to increase productivity and reduce seasonal fluctuations, as this increases both production as well as profitability. A strengthened input market of knowledge, finance and products will provide the means for farmers to make the transition into semi-intensive production."

Not everything that was assumed happened in reality. Dairy exports have increased in recent years, but are unstable, with a significant dip in 2019 due to the closure of the Kenya market being over 85% of the export market. Processors have been investing in the dairy chain, but this doesn't always turn out to the benefit of farmers. Processors compete with cooperatives in milk collection, with affects the market position of cooperatives in a negative way. The bargaining power of cooperatives, hence of the producers, has not increased. Productivity of dairy farming is increasing, but with low and unstable milk prices, farmers are hesitant to invest. Dairy extension and technology transfer have increased with TIDE II, as has access to finance, either through cost sharing arrangements or access to credit. So the assumption that investment and export would lead (automatically) to higher incomes and better cooperatives was not correct.

The TIDE II technical proposal of August 2019 includes a table with 12 risks. The risk analysis has proven to be quite accurate and the project was able to apply most of its mitigation measures.

Three of the identified risks were labelled as potentially having a big impact:

1. Export dependency: the continuously increasing export has created a dependence on exports for the southwest, affecting the whole country. Exports are influenced by world markets (subject to price fluctuations) and Kenya (political risk). The dependency on export proved to be an issue with regular closures of the borders with Kenya and DRC. This in turn had an effect on milk prices. The project responded by putting more effort in the development of local markets.
2. Disappointments for farmers: not all the investments will lead to increased productivity and generate sufficient returns, leading farmers to blame prices or become disappointed. This was indeed observed during the evaluation. The project responded by focusing more on improvement of cattle feeding, which is likely to give a good return to a relatively small investment.
3. Lack of suitable finance: to increase productivity, farmers require to make investments with long pay-back periods. This increases risks and requires appropriate financing modalities that are not available on the market. This was mitigated by the special dairy credit fund, implemented by PCP.

4.3.6 To what extent was risk management and conflict sensitivity adequate, and to what extent has the implementation of the project been adjusted based on regular assessments of assumptions and risks?

Risks were reviewed regularly by project management and reported upon in the annual progress reports. Two main risks were identified and acted upon.

First there was the COVID-19 pandemic, from early 2020. The project started conducting regular reviews to capture lessons for interventions and formulate strategies that respond and address the impacts from COVID-19. The aim was to increase resilience of producers. More emphasis was given to efficiency of production, e.g. by training on improved forage. The project further invested in three digital tools for dairy advisory and extension services to increase access to knowledge and information on good dairy practices during the lockdown. The impact of COVID- 19 rapidly subsided in 2022 when the economy was fully opened again.

The second risk that materialised was the closure of the Kenya market to Uganda dairy products. The project responded by supporting more local markets, e.g. through a processor

led school milk programme.

4.3.7 Assess the translation of the understanding of the context and the political economy in the project strategy and activities.

The project recognises that the government is inadequately resourced and that there is a high dependence on aid. Any contribution to build infrastructure and human resources is important. While the government preferred budget support, the project implementers have been steadfast in their approach to provide direct programme funding. The project encouraged dialogue with local government focusing on policy priorities, focused on building the capacity of government functionaries to deliver services giving them flexibility to implement project activities, and was not visibly dependent on government systems such as cattle breeding, veterinary healthcare).

TIDE II has mainly targeted medium and large farmers in South-West Uganda and has no differential intervention strategies to address the needs and aspirations of smallholder farmers within those project areas. Medium and large farmers were willing and able to make the investments needed to improve their dairy farming practices and benefit from the project activities. They leveraged their increased production and improved quality to get better prices and services from large processors. Their volumes make it economical and efficient for the large processors to procure milk from them directly; some even by-passing the cooperative. This has resulted in marginalising smallholder farmers in the same project area. Owing to lower production they are either compelled to sell raw milk in local markets at lower prices or have to depend on aggregators or the cooperatives to access the processors.

Table 17 provides a summary of key stakeholders, their power and interests in the context of TIDE II. This analysis is at an organisational/collective level, and the level of influence and interest might vary among individuals or groups within these entities.

Table 17. Power and interest in TIDE II per stakeholder

Stakeholder	Type	Power / level of influence	(Nature of) interest in TIDE II
MAAIF	Government	High: has power since it passes laws; decides how to share project resources	Very high: project seen as a source of funding to maintain mandatory functions
DDA	Government	High: influential since directly in charge of dairy sector operations, also have regulatory function (?)	Very high: mandate is dairy sector development; interest in milk quality assurance, dairy cooperatives development
Public schools	Government	Low: need support to implement SMP	Low: parents cannot afford to pay for milk
Private schools	Private	Medium: can influence decisions to procure milk locally;	Medium: benefiting from SMP; parents willing to pay and improve their children's milk intake
Dairy cooperatives	Membership	Medium: low market share; unable to influence price; difficulties retaining loyalty of members	High: technical + financial assistance for equipment/ processes, business management training
Processors	Private	Very high: procure high volumes; determine market price of milk	High: benefit from project innovations (QBMPs)
Retailers	Private	High: alternate market for farmers and cooperatives	Medium: project helps in maintaining their business by assisting consistent production

Product makers (yoghurt)	Private	Medium: small-scale, local businesses- dependent on local milk supply	High: for technical know-how and market development
Big farmers	Beneficiary	High: civil servants and big landlords can influence government policies, pull resources for own use	High: see dairy as a lucrative enterprise particularly with export potential
Medium farmers	Beneficiary	Medium: have limited power	High: see project to expand their dairy enterprises
Small farmers	Beneficiary	Low: have little power and resources/ capacity to invest;	Low to medium: dairy not a priority but see potential based on participation in project activities
SACCOs	Lenders	Medium to high: some are very powerful, and command a large membership and can influence loan policies (?)	High: overlapping membership with dairy cooperatives; project helps to keep their money in circulation
Banks	Lenders	Medium to high: some are working with the project to	High: willing to work with the project to design and introduce suitable loan products to help beneficiaries gain access to technologies; see project activities useful to ensure timely repayment

4.3.8 Assess to what extent cooperatives have been strengthened, particularly in their management and capacity and negotiation position vis a vis the traders and processors?

Strengthening of existing dairy cooperatives (114) took place through training role-holders in governance and financial management, establishing market linkages with processors and transporters/vendors, and facilitating investments linkages to financial institutions. The project used a progressive scale to measure bankability of the cooperatives, and reports that a total of 50 cooperatives are in Tier 1 indicating improved governance, financial management and overall operations.

The dairy cooperatives primarily function as milk collection centres bulking/aggregating locally produced milk. Most of them retail chilled raw milk and sell the balance to processors. Cooling equipment has been acquired through the project on a cost-sharing basis supplemented by loans from SACCOs and/or commercial banks.

The cooperatives have no say in determining the selling price of milk, they have to adhere to prices decided by the processors. Hence, they prefer selling raw chilled milk to vendors and retailers in the local market at mutually agreed prices and sell only the surplus to processors. Likewise, farmers too prefer to sell part of their milk directly to local vendors.

Several large dairy farmer members supported by TIDE refuse to pour milk to the cooperatives. Owing to large volumes, they have exclusive supply agreements with the processors. This has affected the commercial viability of the cooperatives.

Only 20 dairy cooperatives covering 1-2 districts have supply agreements with large processors. In other areas the processors set up their own MCCs in catchment areas of dairy cooperatives, who are perceived as competition. They offer farmers marginally high prices

and lure them away from the cooperatives. The project has not intervened or helped the coop to resolve the issue.

It can be concluded that management and administrative capacities of cooperatives have been strengthened, but their negotiation position vis-à-vis traders and processors has not.

4.3.9 What progress was made in in achieving TIDE II targets, with respect to the 7,000 dairy farmers targeted?

Please refer to Sections 4.3.1 to 4.3.3 above.

4.3.10 Were the target groups reached? and how well?

In the project proposal, the target population, or beneficiaries, is not defined. Project objectives are described in terms of sector interventions, leading to increased farm incomes, created jobs and school children with diverse diets. Activities are aimed at farmers, farmer groups, cooperatives, service providers, processors and schools. At no point in the proposal are the beneficiaries further defined. Apart from school children, milk consumers are not seen as beneficiaries.

De facto, the main beneficiaries are the dairy cattle owners in Southwest Uganda, and later the smallholder farmers in the ISDAP zone as well.

Farmers are generally well reached by the project, through direct interventions (via extension workers and LSPs) or via cooperatives (TIDE) and Village Learning Groups (ISDAP). Farmers are also reached through the three PDTFs. Farmers are further indirectly reached through SACCOs.

The main beneficiaries for the nutrition component are school children. The benefit if their parents support the school milk programme and schools have been enrolled in the programme.

Valid for all activities is that "being reached" is not the same as "having impact". Farmers may be successfully trained and acquired additional knowledge. As long as they don't apply what they have learned, there is no measurable impact. The project, however, may have been effective in implementing its project.

4.3.11 What has changed for the target groups in relation to milk production, milk sales, milk quality and the dairy value chain?

According to project documents, 5,848 farmers increased their milk production with TIDE II. Average milk production per farm in the dry season reached 163 litres per day compared to the baseline average of 100 litres per day.

In addition to anecdotal records that awareness of milk quality has increased, milk rejections by milk processors reported by DDA reduced from 5% to 1.84%. Eleven processors and 40 MCCs invested in the Quality Based Milk Payment System (QBMPS). According to data provided to the project by the processors, the total of paid bonusses for quality milk reached UGX 978 million. Indeed some processors also reported that milk quality had improved due to project interventions. It couldn't be expected that the project would achieve QBMPS in politicised sector, without a government policy.

Changes in the dairy value chain are less obvious. It is mostly reflected by the project as investments in cooperatives. The project provided 150 dairy cooperatives with support to improve their business functionality through training in strategic planning, governance, financial management and operational management. This resulted in 108 cooperatives getting a better assessment over the project lifetime. Whether this alone results in a change in the

value chain is doubtful. Since 2013 the national annual milk production increased from 1.5 billion litre to 2.6 billion litre in 2020 and a huge increase of 1.25 billion litre to a level of 3.85 billion litre in 2023 (source: DDA December 2023).

4.3.12 What is TIDE II's contribution to the dairy sector transformation?

Sector transformation has been mentioned in the project document, progress reports, briefing material and the ToR of this evaluation, but its definition is not given. The advertised project objective is "to deepen and up-scale dairy sector transformation". It is, however, not clear what is meant by sector transformation, and opinions differ, even with SNV and within the project team. One description is a transformation "from cattle keepers to dairy farmers", indicating a more professional and profit-oriented approach to dairy farmer. To this, the project contributed by focusing on more economic use of feed crops and strengthening of sector service provision, especially by private actors.

The project proposal gives a number of indicators for sector transformation:

1. The establishment of dairy as a major export product for Uganda. This cannot be attributed to TIDE (although project management pointed out that over 60% of the national production is produced in SW Uganda).
2. Improvement in the quality of milk across the value chain. In itself, quality improvement is not enough (yet) to be an indicator of sector transformation. If the project had been successful in introducing QBMPS, it would have been an element of sector transformation.
3. Strengthening the position of dairy cooperative societies within the value chain. This would be a strong indicator for sector transformation, if cooperatives have gained a stronger position, representing milk producers in the milk value chain. While the project has strengthened cooperatives' management and governance capacities, It is questioned whether it has strengthened their position in the value chain.
4. Supporting the finance sector, creating access for relevant services to the dairy sector. This is another important aspect of sector transformation and the project has clearly contributed to it.
5. The functioning of Practical Dairy Training Farms (PDTFs), offering contextualised residential peer-to-peer trainings to farmers. In the broader sense of creating private extension services, together with services provided by LSPs and cooperatives, this is a recognised aspect of sector transformation. (Project management added that farmers are paying for attending training events and eight farms/learning institutes have copied the PDTF model).
6. The development of an input market, offering products and services required by farmers to increase production. Another recognised aspect of sector transformation to which the project has contributed.
7. Government buy-in for parent led school feeding as a result of the TIDE school milk programme. This can be seen as an aspect of sector transformation.
8. Having a national taskforce on milk quality (first of its kind) in which all dairy value chain stakeholders are represented.

4.3.13 How has TIDE's interventions and approach induced positive changes among the businesses of the market actors?

TIDE generally had a private sector orientation and has promoted several businesses. Under its innovation fund the project stimulated the use of a solar heating system for industrial milk processing, assisted a private company to establish a workshop for repairs, servicing, and fabrication of parts for chaff cutters, supported a seed company to open a branch in Mbarara and supported a company to supply and repair milk coolers and other dairy equipment.

Local Service Providers were engaged and supported in different links of the dairy value chain. Often these were one-person enterprises or small companies that were able to develop to a sustainable level.

4.3.14 How well has TIDE II been inclusive as per the project proposal and as per the interest of different types of farmers and businesses?

TIDE II has boosted development of the dairy sector in Uganda by capacity strengthening of (private) extension services and farmers. Focus was on efficient milk production and capacity building of dairy cooperatives. A Quality Based Milk Payments System (QBMP) was piloted but has not yet been adopted. The project aimed to transform the dairy sector as a whole, but did not identify the intended beneficiaries of the project. The main approach was to establish demonstrations of technologies and investments. This led to a bias towards the larger or better farmers, where technically the best results could be achieved. The demonstration farmers, who already were the better off farmers, benefitted from free or subsidised investments in their farms. Poor farmers in the TIDE project area were not targeted and were unable to adopt innovations introduced by the project.

As per the project proposal TIDE II was designed as a continuation of TIDE I to facilitate dairy farmers to transition from low input-low output farms to more commercially oriented, semi-intensive dairy farms. TIDE II interventions largely followed an inclusive value chain development approach by promoting frugal/ affordable and somewhat resource-efficient innovations with high use value by developing a cadre of local entrepreneurs and/or suppliers. The interventions demonstrated limited sensitivity to the diversity among farmers, even between medium (mixed farming with average up to 10 dairy cows) and large farmers (with 20 to 100 crossbred dairy cows, over 200 acres planted pastures), in terms of opportunities, constraints and vulnerabilities. Inclusive value chain development and inclusive business seek to combine profitability targets and economic growth with social and environmental growth whereas inclusive development implies a multi- dimensional focus towards achieving the well-being of the poor and marginalised. The project aimed at achieving higher incomes through market integration and upgradation by applying quality standards.

Both TIDE II and ISDAP are addressing gendered bottlenecks and have created opportunities for participation and benefits by activities targeting women such as training in improved airy husbandry, promoting women entrepreneurship (RUMEN8 service providers, Yoba yoghurt groups) and encouraging women and youth as role-holders in the cooperative management boards.

In any value chain, typically all chain actors-- increasing productivity, increasing income and/or making and sustaining profits. TIDE project took the inclusive business approach to facilitate 'dairy as a business' by embarking on innovations and facilitating functional partnerships among value chain actors viz. farmers/producers, service providers, input suppliers and companies, buyers/ processors engage in value chains for economic reasons, however it did not explicitly address the inequalities and power imbalances among them.

To some extent ISDAP tried to align activities with smallholder farmers' aspirations (indigenous cattle kept on unimproved pastures, mainly for manure) and sought to accommodate heterogeneity with regard to land and cattle holding, ethnic background, household size/ composition in addition to age and gender of SHFs in the project areas. Neither TIDE or ISDAP included interventions to address the underlying social norms, institutions that create gender inequality and marginalisation, hence there is little to no impact of gender mainstreaming, due a male dominance in culture and sector.

4.4 Efficiency

4.4.1 Are the project budgets well aligned with project activities?

Table 18 a summary of the budget and expenditure, with disaggregated figures for TIDE II and ISADP. The budget is well balanced and the division over outcomes is logical, with the largest allocation to farm productivity. Expenditure also indicates that the budget was well made. Expenditure is very even and around 90% for each outcome of TIDE II and likely to reach close to 100% by the ed of the project. ISDAP budget and expenditure show similar trends.

Table 18. TIDE II and ISDAP budget per outcome

Proj.	Outcome	Original budget	Revised budget	Expenditure					Perc.
				2020	2021	2022	2023 (9 months)	Total	
TIDE II	Farm Productivity	2,557,777	3,341,527	759,458	924,258	889,557	458.331	3.031.604	90,7
	Milk Quality	1,103,615	1,119,123	186,141	315,943	306,809	209.145	1.018.038	91,0
	Value Chain	2,785,397	1,585,783	344,284	451,945	448,011	175.038	1.419.278	89,5
	Nutrition	1,783,655	2,072,071	390,252	480,896	624,513	379.489	1.875.150	90,5
	Programme Support	2,231,625	2,343,565	482,220	587,550	633,330	424.211	2.127.311	90,8
	Sub-total	10,462,069	10,462,069	2,164,375	2,762,613	2,902,220	1.646.213	9.471.380	90,5
ISDAP	Farm Productivity	1,980,600	1,758,941	-	-	485,100	424.320	909.420	51,7
	Milk Quality	417,105	435,462	-	-	86,449	65.450	151.899	34,9
	Value Chain	631,707	781,540	-	-	128,530	218.502	347.032	44,4
	Nutrition	662,371	593,673	-	-	122,877	95.556	218.433	36,8
	Programme Support	1,104,141	1,226,309	-	-	336,839	271.799	608.638	49,6
	Sub-total	4,795,924	4,795,925	-	-	1,159,795	1.075.628	2.235.423	46,6
	Total	15,257,993	15,257,994			4,062,015	2.721.841	11.706.803	76,7

Financial management and reporting are based on annual budgets. Expenditure in 2020 reached 79% of the annual budget. The poor depletion rate of the budget was mostly due to the COVID-19 pandemic, which lead among other, to the closure of all schools. Implementation in the Milk Quality outcome was further affected by the delayed import of the milk analysers, as the project needed first to secure local repair and maintenance services by a local service provider under guidance of DDA.

Financial resource utilisation picked up in 2021, with a depletion rate of 94%. The depletion rate in 2022 was 88%, now including ISDAP. Excluding ISDAP, financial resource utilisation

remained close to 94%. Only the dairy value chain outcome was more underspent because some of the activities that had been earmarked to be executed by external consultants were later internally accomplished by the project team in partnership with Agriterra. The lower utilisation rate for the ISDAP component is understandable since 2022 was the first year of implementation. ISDAP required a more intensive approach to reach the smallholder farmers. Therefore, more time was spent on scoping missions, context analysis, stakeholder engagement, and the design of appropriate mechanisms for the smallholder farmer interventions.

By design the project needed a lot of human resources, mainly for training, awareness raising and mobilisation, but the budget put a limit to the number of staff. SNV aimed to keep staff numbers low and used Local Service Providers (LSPs) to do several tasks otherwise done by project staff. The additional benefit was that local, private, capacity was strengthened.

4.4.2 Did the project resource adapt to changes in project strategy based on the learning exercises?

The original budget for TIDE II was EUR 10,462,069. The biggest adaptation came with the introduction of ISDAP with a top up of EUR 4,795,925 for ISDAP and support to the smallholder credit facility, making the total overall budget for the project EUR 15,257,994.

There have been several other adaptations to the budget, although restrictions to move between categories in a budget line made adaptations of budget somewhat difficult. Changes above 10% needed approval from EKN, which, however, was never refused when requested.

An example is the introduction of PIP, particularly in the ISDAP component where intra-household aspirations needed to be considered before designing interventions. The project needed to hired a consultant to introduce staff to PIP. This required a budget relocation of EUR 75,000, which was dule requested and approved.

4.4.3 How timely was the implementation of the project (taking into account factors outside the project's control)?

Considering the effects of the COVID-19 pandemic, the project has been implemented timely, based on annual planning and targets.

4.5 Impact

4.5.1 What are foreseen the long-term effects that have resulted from the TIDE II project interventions including contribution towards the intended impact, positive or negative impacts, or intended or unintended changes?

At project level there is no consistent use of the terms output, outcome and impact. In the presentation to the evaluation team, the main impact was presented as:

- 8,556 farmers reached.
- 401 village learning groups established under ISDAP.
- UGX2.8 billion credit provided to six SACCOs for smallholder dairy farmers.
- 33 village milk marketing groups formed across 12 districts targeting smallholder dairy farmers.
- 37% increase in farm milk production from a 16-litre average to a 27-litres average.

Apart from the last bullet point, these are all output indicators.

From project reports and interaction with stakeholders it can be estimated that around 20,000 farmers (5,000 for TIDE II and 15,000 for ISDAP) have benefitted from training and financial

incentives and were able to improve their dairy farming. About 5,000 people found employment in the sector, due to project interventions.

Three Practical Dairy Training Farms have been established and have a multi-annual business plan for sustainable continuation. In addition to government extension workers, private extension workers have been trained and assisted to continue providing services as a private business.

Awareness of milk quality has increased at all levels. Positive trials were completed with quality-based payment, preparing the introduction of a quality-based milk payment system. Whether QBMPS will be introduced depends on the willingness of processors and government policy.

Management capacities of cooperatives have increased, but the position of cooperatives in the milk value chain, representing producers with a stronger voice or power, has not changed. Several cooperatives have started to provide more services to dairy farmers, beyond aggregating, which could in the long run create more loyalty by farmers towards their cooperative.

Different types of private businesses were able to develop and get established. These include extension workers, input providers, repair shops and yoghurt producers.

The availability of specific credit for dairy farming has increased.

Milk consumption in schools has increased, but the impact on nutrition is considered small.

Where beneficiaries have benefitted from subsidised investment, through different levels of cost sharing, these are likely to result on long-term impact. In addition, more than UGX 20 million in loans were provided to TIDE and ISDAP farmers without any grant scheme.

In conclusion, TIDE II helped primarily large dairy farmers, and to some extent medium farmers consolidate their position in the dairy value chain. It has been instrumental in improving milk production and quality, stimulated local large processors to provide a remunerative market with pricing based on quality parameters, facilitated access to credit, created a demand for fee-based services and a cadre of local service providers to complement government service provision in animal breeding, feeding and management, and to some extent strengthened existing dairy cooperatives to represent the interests of dairy farmers in the project areas.

4.5.2 What is the project's impact on the different categories farmer households in the target area?

It was already noted during project implementation of TIDE II that the project was most beneficial for medium to large farmers. In response, ISDAP was formulated, but the dairy cow focus of the original TIDE II did not change. ISDAP was implemented in new districts, in the old districts TIDE continued as before.

Even within the category of large to medium farmers, there is a bias towards the better performing farmers (hence usually the richer farmers), for two reasons:

1. The project has an approach of demonstration. To give the most attractive demonstration, the best farmers in each area selected to show the effects of the project's interventions.
2. The project works with local service providers (LSPs), who get "result based contracts", in other words they are paid by the number of farmers they recruit or the number of

demonstrations they can give. The best or easiest results are achieved by LSPs by targeting the most advanced farmers.

For the same reason, a bias towards the better farmers is even seen in ISDAP. Farmers were profiled at the start of the project, but the project's approach leads to a bias towards the better farmers in a group. It was observed that when VLGs were formed, the best farmers in the group were selected by the VLG members to benefit from incentives related to demonstrations.

It can be concluded that the ToC and assumptions were not correct, or not interpreted correctly as there was no focus on the project goal of poverty reduction.

4.5.3 What unintended (positive and negative) effects has the project had, and on which groups of people?

The most important long-term positive effects were listed under 4.5.1 above. Some of the negative effects were mentioned under 4.5.2: a bias towards the better (richer) farmers.

A similar bias was seen in the school milk programme. Because of the difficulty to convince parents to contribute to school milk, LSPs would target the communities where the best results were to be expected: private schools and urban areas . This was especially the case in the school yoghurt programme.

The evaluation team visited schools that did not join the SMP. One of the reasons given was that there was a divide between parents willing to join and those who didn't. This led to tension and undesired situations at the school and the principal decided to stay away from the SMP. Cattle were observed to graze together with wild animals (e.g., zebras and kobs) in Sanga area and in areas near Lake Mburo National Park in seemingly new paddocks. It was not possible to verify whether there was any encroachment in the national parks.

TIDE envisaged that strengthening the dairy cooperatives would help address the needs and interests of all dairy farmers not only by providing bulking and market access but also a wide range of services (credit, advisory, input supply, aggregation) and opportunities (service provision, quality-based pricing) that would contribute to their household income. Membership was voluntary and open to any farmer who was capable of regularly suppling milk (this condition was not strictly imposed).

There was no disaggregated data to ascertain the percentage of SHFs who were members and/or role holders that benefitted from the cooperatives, however interactions during fieldwork indicated that very few SHFs supplied milk to the DVCs via transporter/traders as intermediaries, and the cooperatives sold it to the processors.

Not all cooperatives shard the profit margins with the producers (needs to be confirmed). Membership of the DVCs granted SHFs access to dairy loans where SACCOs exist, and also linkages to other service providers (water companies, seed companies, PDTFs, and other input suppliers), advisory services (animal health and veterinary services through UCCU) and development initiatives.

SHFs in the ISDAP area got access to formal credit via the SHF investment packages developed in collaboration with PCP particularly for rainwater harvesting.

4.5.4 Would it have been possible for the project to achieve more impact than has been achieved? If so, what impact, and how could this have been done?

Recognising what the project has achieved, a more coherent result, hence impact, could be expected by a more value-chain oriented approach. TIDE has worked with a set of pre-defined activities and a modular methodology: establishment of demonstrations, result-based contracts with LSPs to organise an agreed number of farmers, cooperatives or schools. With a more open value chain approach the project could have analysed the most important bottlenecks to achieve the desired result for its target group(s). So did the project focus its activities mostly on the productive side of the dairy value chain, while a pulling factor, like price stability, or a shift in power relations between farmers (cooperatives), traders and processors, could have sorted a better and more structural impact for the producers. If improved nutrition is a major objective of the project, parents-led school milk is not likely the most effective or efficient. Overall, a better definition of the target group(s) would have helped to focus on intervention that most benefit the intended people.

4.6 Sustainability

4.6.1 Will changes induced by TIDE II last? Why or why not? And do we have an effective exit strategy?

The sustainability of TIDE II interventions differs per component and also depends on external factors, like the milk price, decisions by processors and decisions by the government of Uganda.

The capacity of direct beneficiaries of the project (trained farmers, beneficiaries of cost sharing) are likely to be sustained. Farmers will apply their knowledge and use the investments they made. Also, businesses (LSP) that have been established and/or supported are likely to sustain.

The extent of further investment in the sector, by farmers, cooperatives or processors, depends on profitability, hence the price of milk and its stability. Investment without external support is further hampered by a mindset of dependency, where stakeholders expect government or donor funded projects to pay, at least partly, for any investment.

The project had an exit strategy in the sense that cost sharing arrangements were gradually scaled down during the project lifetime. It should also be observed that the project very much built on demonstration of technologies and investment, without having, or taking, the time to focus on wider adoption of what was demonstrated.

Establishment of regional platforms was realised towards the end of the project. TIDE II had the ambition to merge them into one platform, but that is unlikely to happen in the remaining project time. The two years of COVID-19 pandemic hampered early uptake.

It was noted that many of the project beneficiaries are large farmers, many of whom are politically well connected. It is also noted that the dairy sector gets full support from government. These two factors should ensure that project activities can be sustained. If large farmers want to continue with project activities, they have the (financial) capacity and the political connection to influence government for resource allocation to the sector.

4.6.2 To what extent do relevant stakeholders have a sense of ownership for the different activities?

There is no particular sense of ownership among the project's stakeholders. The agenda is primarily set by the project, which offers a menu of training, capacity strengthening and products eligible for co-financing or credit. For example, a school that joins the school milk programme becomes eligible for receiving fuel efficient stoves at 50% co-financing or a water purification filter at 10% co-finance, although less than 5% of the participating schools participated in this scheme. Likewise, for farmers in TIDE or ISDAP or for cooperatives there are specific products available.

The lack of ownership doesn't mean that beneficiaries are discontent. For example, making SMP a parent paid – parent supplied milk programme is a good start to create ownership for the program and to work towards eliminating dependence on grants to 'outside' milk.

In the Uganda context, it is what beneficiaries expect, only the exact arrangement differs between projects and programmes. Even a central government agency like DDA sees itself as a recipient of support by the project. DDA expressed that it would have liked certain activities (e.g. strengthening of national and regional milk testing laboratories, improved dairy cattle breeding, distribution of pasteurised milk dispensers), but these were not part of the TIDE package.

4.6.3 To what extent are relevant stakeholders active in ensuring the sustainability of the different activities?

Processors are actively aiming to sustain the progress in milk quality. Likewise, SACCOs are geared to make the dairy credit lines a long-term success. Processors are actively aiming to sustain the progress in milk quality. Likewise, SACCOs are geared to make the dairy credit lines a long-term success. On the other hand, sustaining schools as an institutional market for locally produced milk might pose problems as most aggregators fear the break in supply during school vacations; also some schools prefer the option to have their own dairy cattle and forage farm, to generate income for the school.

Sustaining cultivation of improved forages requires a system of regularly replacing planting material. Some Kenyan seed companies such as Simlaw Seeds and U-Farm, and MNCs such as Barenbrug and Advanta have set up distribution centres in the Mbarara region. These mostly cater to the needs of the bigger farmers; SHFs prefer vegetative slips to seed as the latter is expensive.

Inadequate efforts to promote reliable local seed businesses (for certified seed) appears to be a shortcoming of the project that might affect the ongoing supply to and feeding of improved forages by SHFs, and consequently milk production in the longer term.

4.6.4 To what extent was knowledge generated during the project transferred to relevant local actors? To what extent was knowledge transfer (and/or participatory knowledge development) part of the project's implementation approach?

Knowledge transfer was a key element of the project approach and happened widely and across several project actors and beneficiaries. Improved farming practices have been extended to farmers by project staff, while at the same time training governmental and

private extension workers. A wide variety of stakeholders have been trained at the PDTFs, including local government and SACCO staff.

4.6.5 Are tools developed by TIDE II used by (local) government and/or other actors?

Several tools developed or introduced by TIDE, have been piloted in the project and are being used by project stakeholders.

TIDE developed 360 training modules (in MS PowerPoint format) to provide dairy farmers and other dairy professionals, with knowledge and skills for enhanced dairy farm management and profitability. The modules are available on a free website (e-dairytrainingmodules.africa) to support and build the capacity of farmers, extension officers, trainers, input suppliers and service providers.

TIDE introduced to project stakeholders the animal feed balancing tool Rumen8. It is a software application aimed to reduce feeding costs and reduce enteric methane emissions. The project aimed to train 45 extension workers, but eventually trained 15 that were regarded "trainable". These trained extension workers were hired by the project to apply the system with interested farmers. The pilot started in 2021 with 32 farmers, of whom 27 remained in the programme. By 2023 the number of participating farmers had reached 81.

TIDE also piloted with Emata in the project area. Emata offers digital, cell phone-based, affordable loans to farmers so they can turn their farms into businesses. Emata uses the historic farmer milk supply data to a cooperative to develop a credit score based on which a farmer is able to qualify for a micro loan in less than 15 minutes. With the project Emata onboarded 30 dairy cooperatives and provided UGX 874 million worth of loans. Over 600 farmers have started utilising digital loans, 65% of the loans provided are below UGX 1 mln.

4.6.6 Specifically for value chain activities: How are activities in the chain developed to assure sustainability and economic viability? How are investments triggering new investments and are repeatable without project support?

Value chain activities in the project are primarily related to strengthening the primary cooperatives first as robust business organisations providing backward and forward linkages to their farmer members. Their business performance – milk procurement, bulking and sale - should be able to provide margins for maintaining and upgrading the assets and equipment built in course of the project. This is directly linked to economies of scale- the volume, quality and price of milk they handle – large volumes and good quality will give the cooperatives bargaining power to obtain the highest price.

At the moment almost all the dairy cooperatives supported by TIDE operate as milk collection centres, some have started processing and making yoghurt on a very limited efficiency scale. In a highly fluctuating market environment it is difficult for the cooperatives to survive. At the moment the coops have a very weak bargaining power vis-a-vis their main market i.e. the processors. The tents and chairs purchased by some cooperatives during the project can be put to good use for future training and extension events as well as income generation for the cooperatives. Likewise the veterinary medicine shops in the premises of some cooperatives have the scope to provide primary health services including vaccination with due support from the government veterinary department.

The project has also created and supported a vibrant input and service market in the TIDE area. It has trained young farmers as service providers, LSPs, to provide fee-based services e.g. advisory services for balance feeding using Rumen8, and AI technicians. The large

farmers see value in these services and are also willing to pay, so they are likely to continue after the project ends. The QBMPS will also require trained manpower to carry out milk testing at every node. This could be an employment opportunity for young people in the area.

4.6.7 Overall, what key blockages are foreseen in sustaining the effects of TIDE II?

Sustaining activities and services for the dairy cooperatives largely depends on whether they are able to attract and retain a sizeable number of active pourer members all year round. Members' loyalty comes from not only from the price of milk but also when they see the dairy cooperative as durable organisations with a reasonable market share, and those that provide them with the information, inputs and services needed to maintain their milk production. Large farmers dropping out and becoming inactive could be detrimental to the future of the cooperatives. Secondly, with their present level of operations, many of the cooperatives are in no position to compete with the big processors – both in fluid milk sale as well as in producing and selling milk products. There is no way to ensure that the supply agreements between them are honoured and there is no parallel procurement being done by processors in the catchment area of the cooperatives.

5 Summary conclusions

This chapter answers the objectives of the evaluation as quoted in Section 1.2 of this report.

5.1 Assess whether the project has achieved inclusive development of the dairy sector.

Thus TIDE II interventions were designed to build on the existing and potential demand and supply of milk and milk products. They primarily supported medium and large producers who were capable of increasing their production by making investments to improve efficiency and lower production costs in the longer term. TIDE II aimed at achieving higher incomes through market integration and upgradation by applying quality standards. In the TIDE areas, the project lacked sensitivity to the diversity among farmers in terms of opportunities, constraints and vulnerabilities, and hence was not inclusive. Alignment with smallholder farmers' aspirations was seen only in the ISDAP component in other (non-TIDE) project areas.

Value chain development as a strategy for poverty alleviation requires a clear definition of development goals not just economic growth resulting from market development, production increase and improved technology and practices. It has to be based on the needs and interests of potential beneficiaries, with attention to the local political economy and constraining structures. Interventions ought to enhance the capacity of the poor and marginalised to exert choice and voice to demand equitable rights and fair conditions to engage in value chains. Inclusiveness more explicitly problematizes inequalities and power imbalances, aiming to address those through inclusive processes such as social upgrading and empowerment. Inclusive value chain development addresses a transformative agenda that focuses on social, relational, and environmental aspects of development. The latter is being followed to some extent in the ISDAP interventions. Farmer profiling and farming systems studies in ISDAP helped validate the relevance and position of dairy as a livelihood option for smallholder farmers.

This evaluation thus concludes that while the dairy value chain development focused initiatives in TIDE II yielded technical results translating into improved production and markets, they did not necessarily bring the intended social-institutional benefits to the smallholder farmers in the same project areas. This limitation has been duly addressed in the ISDAP component being implemented in other (non-TIDE) project locations where some of those benefits are visible.

5.2 Assess whether the project has led to improved production, a conducive enabling environment for the dairy sector and strengthened position of cooperatives in the dairy sector.

Project monitoring data, triangulated by primary data collection by the evaluation team, show that the project has led to increased milk production by benefitting farmers. The environment has also improved by the strengthening of extension services, input suppliers and service providers, and by improving access to finance.

TIDE aimed to improve productivity and production through introduction of affordable technologies and training to improve practices and management at the farm level. The premise was increasing production would enable more investment in technologies needed to sustain the production and improved quality. On the one hand, the dairy interventions provided infrastructure (bulk coolers), technology training and managerial inputs (trained testers, technicians, service providers) to link farmers to the value chain, where the local and Dutch private sector played an important part, while the project also depended heavily on the government veterinary services to provide complementary healthcare and breeding services.

Increased volumes/marketable surplus would also help producers benefit from bulk-institutional markets and based on economies of scale those would reduce risks – the school milk programme was envisaged as one such institutional market, however the milk volumes procured by the schools are dismally low. With regard to producers taking up processing activities (vertical integration), there are a few examples of groups engaging in yoghurt making (Yoba), however it is difficult to say if the added activities have resulted in added income for the producers. Likewise some producers (youth) have been engaged in service provision (AI workers) and input sale (plating material for improved forages) – the viability of their enterprises needs affirming.

The position of cooperatives in the dairy value chain did not substantially change. The project rolled out a capacity building programme, strengthening cooperatives' capacities, mainly in governance and management. Cooperatives also benefitted from co-financed investments, like milk quality measurement equipment and milk coolers. However, the power balance between farmers/cooperatives and milk processors did not change. The bargaining power of cooperatives, and therefore of the farmers, has not increased. It was also observed that specific problems related to milk marketing faced by cooperatives, were not addressed by the project.

Only those cooperatives led by large and influential dairy farmers seemed to have some agency while dealing with big buyers- in the other cooperatives, price uncertainties led to many large and medium scale farmers resorting to side selling which negatively affected the viability of those cooperatives. In ISDAP it is yet to be seen if the attention to constraining structures can result into fair conditions for SHFs to engage in the dairy value chain.

The milk market is largely buyer-driven – for example, decisions about quality standards – and pricing to a large extent is taken by the more powerful actors ('the market'-large processors or retailers) and transmitted to local traders and producers. Relations between the value chain actors are highly competitive and potentially conflictive (e.g. large processors opening collection centres in catchment area of cooperatives). The small and medium farmers have very little space for manoeuvring or influencing these decisions – on the contrary this tends to increase their labour burden (for women in case of dairy). The project assumed that encouraging small and medium farmers to become members of the cooperatives would help them improve their participation in decision-making through collective action -about decisions beyond their direct area of operation such as quality-linked pricing, joint marketing (beyond retail) and lobbying for their interests, but there is no clear evidence to substantiate that.

5.3 Assess whether this has led to increased incomes and resilience for market shocks for farmers and members of the cooperatives.

Project monitoring data indicate that 4,720 farmers increased their annual milk sales. Based on a sample of 640 farmers twice a year, the cumulative increase of milk sales by these 4,720 farmers is 29% per year.

With regard to resilience, the project sought to address the feed and drinking water shortages in the project area that had a direct effect on milk production levels, milk prices, disease incidence and the reproductive health of cattle – particularly in the dry season. According to the farmers, limited capital, unpredictable climate, lack of timely veterinary healthcare services and inadequate service providers, and insufficient knowledge continue to be barriers in their adaptation of climate smart practices. Interestingly choice of breed – mainly cross bred dairy animals - was seen by farmers' as an adaptation strategy, it was not considered as a viable option by the project. The project interventions included restoration of degraded pasture; planting trees and legumes; sowing drought-resistant grass and fodder species; silages for preservation of feed and fodder, rainwater harvesting. The measures introduced by the project needed considerable investment, that was initially supported by the project (at 50% cost sharing) irrespective of the socio-economic situation of the farmers and later linked to SACCOs for credit. There are no specific indicators in the project results

framework to measure changes in resilience i.e. in the farmers' adaptation strategies as a result of the project.

The milk market remains volatile, with large seasonal differences in prices and occasional major shocks when international borders are closed for milk export. The project has not been able to increase resilience to these shocks. One strategy was to develop a domestic market for school milk. This does provide an additional market and has the potential to become more substantial. Further development of the school milk programme depends on the Government of Uganda.

The project through YOBA for life trained farmers especially women in yoghurt making and formed small cottage industries around milk producing areas which are an alternative market for the fresh milk and also

Cooperatives have not developed into larger players in the dairy value chain. While the project strengthened their governance and management capacities, they remain mainly milk collection centres. Prices in the sector are set by the processors and this hasn't changed.

5.4 Identify, assess and measure unintended effects of the project. Possible unintended effects could be on the position of smallholders, dominance of large farmers in cooperatives, concentration of land tenure, results of policy changes on different groups of actors, others.

As the project did not identify specific categories of farmers, it didn't specifically target smallholders. Targets like increase in productivity and amount of milk marketed, were achieved by working with medium to large farmers.

Another unintended effect is that some farmers became so big that they decided to bypass the cooperatives and deliver directly to one or more processors. Where the volume of milk could strengthen the position of the cooperative, it actually worked against them.

Some unintended effects were also seen in the School Milk Programme (SMP). One effect is similar to the project's productivity component. Because of focus on targets, without identifying intended beneficiaries, the project favoured the better schools, where results could be achieved easier. Therefore, mostly private school and schools in urban settings were enrolled in the school milk and yoghurt programme, while less children of poorer households benefitted.

A second unintended effect of the SMP was a divide in schools between parents willing/capable to pay for school milk and those who wouldn't or couldn't. Schools take different approaches: sometimes all children will get milk if the majority of parents agree with the conditions, in other cases only children whose parents are paying will receive milk. This creates a split where children whose parents are unwilling or uncapable of paying are excluded. In other cases, the discussion among parents on whether to join the SMP or not leads to tension, after which the school leadership decides not to join the programme.

An unintended effect of working with LSPs, using performance-based contracts, was that LSPs would aim for the low hanging fruits, the shortest route to achieve their targets, leading to a bias to the better off farmers, cooperatives and schools.

The project also worked with LSPs when supplying goods or construction works (e.g. improved dairy cattle housing) to farmers on a cost-sharing basis. Because the project could only work with registered entities and because the project agreed on the costs with the LSPs, the products were regarded expensive by the beneficiaries, who could have acquired the goods or works at a lower price.

5.5 Assess the capacity and the effectiveness of the project and its different implementing partners to adapt to changing environment and to incorporate lessons learned.

The project was faced with the challenges of the COVID-19 pandemic of 2020-2021. For two years project operations were affected. Group meetings and inter district travel were prohibited. Because schools were closed for two years, the school milk programme was fully interrupted and the milk providers lost their market. The project formulated strategies that responded to and addressed the impacts from COVID-19. More emphasis was given to efficiency of production, e.g. by training on improved forage. The project further invested in three digital tools for dairy advisory and extension services to increase access to knowledge and information on good dairy practices during the lockdown.

The project also showed adaptation to implementation rate. Through monthly monitoring of progress of different interventions, the project steered to ensure achievements of all outputs. At the higher level, project outcomes and overall goal, there was little to no monitoring and no adjustment until pushed by EKN.

5.6 Identify weaknesses and strength of the project design, scope and implementation strategy.

The project was designed on the premise that productivity enhancement interventions need to be complemented with a) efforts to improve the policy environment (quality regulation, pricing), to alleviate resource constraints (rainwater harvesting, access to affordable credit, inputs, improved feeding practices, cattle housing etc) and build local capacity for responding to changing technological and economic challenges and opportunities (cadre of local service providers like AI workers, extension workers, Rumen8 technicians; developing institutional market like SMP); b) actions to influence the incentives and constraints faced by large-scale processors and buyers for them to engage more effectively with smallholder producers and build mutually beneficial relationships (QBMPS, bulk milk coolers, extension training, cooperative development). The project was convinced that together these efforts could lead to tangible improvements in smallholder farmers' production and marketing practices, which would benefit not only the smallholders but other market players as well.

Although the project intervenes in one value chain, the dairy value chain, it did not have a value chain orientation or market system development approach. Instead, the project followed a modular approach, offering certain packages to farmers and cooperatives. Some of the most determining factors in the value chain, like the milk price and the bargaining power of farmers/cooperatives, were therefore insufficiently addressed.

The project design has reduced poverty reduction as its ultimate goal. During implementation there was no monitoring of the impact and no attempts from SNV to adjust the focus of the project.

5.7 Assess, to the extent possible, the results of the project in relation with the expected impact, such as income, employment and nutrition.

Outcome and impact were not fully monitored and reported upon. There is a reported number of farmers who increased their milk sales, from which a cumulative increase in annual sales is estimated. There is no information on increased income of farmers benefitting from the project. The project has led to an increase in milk production, but the effect on income depends on the cost of production and the price for raw milk. The project actively looked for low-cost interventions for production increase. The milk price, however, remained unstable and often low.

The income benefits from access to institutional markets such as schools were generally limited – reflecting the cost of convenience of procuring from local traders. Milk price from the VMGs/coops were also higher, however this could change when the parent-led SMP gains momentum. For most small and medium farmers, despite relatively small income benefits, being members of the cooperative was important for access to credit-facilitated dairy activities and provided a reliable market when other options failed. Overall, ISDAP and to some extent TIDE demonstrates a positive view on small and medium dairy farmers to improve their livelihoods through cooperative/VMG membership and access to organised formal milk markets. However there is still limited evidence that interventions by the cooperatives have encouraged SHFs to intensify production and to expand their livelihood portfolio beyond the dairy value chain. This might be due to the time needed to develop complex business skills and enhance individual/ collective social capital.

In general SHFs have achieved the least asset building – shows that poverty reduction goals need smaller asset endowments to focus on dairy while sustaining other livelihood options. The medium scale farmers benefit from greater asset building and the gains are spread out over all types of capital. The better endowed large farmers are the primary beneficiaries of the project – in terms of financial capital and most other areas as well. It is evident that households with better initial asset base gained most from the project investments and the opportunities created by the project interventions. It is not clear if the project resulted in higher risk and vulnerability due to asset depletion (for example, cooperatives replacing local traders with commercial viability of coops not certain). There are studies that highlight the importance of collectives/ cooperatives in building capacities of smallholders to participate in formal markets. The project recognises that the cooperatives also benefit by improved governance mechanisms and service provision.

Many smallholder dairy farmers appeared to have built up key elements of natural capital including increasing (land under) improved fodder cultivation and rainwater harvesting. The investments in the latter addressed the first need to increase milk production. Although most SHFs do not depend entirely on dairy for their income, these investments seemed to have positive impact on their income from dairy. Access to cost-sharing and credit played a critical role in improving natural capital. On the other hand, limited land and declining soil fertility is likely to have an adverse effect on overall farm productivity for these households. In terms of human capital, most SHFs acquired skills and knowledge to improve milk production and quality, and management of their dairy farms. The ability and cost-effectiveness to maintain more intensive dairy production practices in the absence of high-quality dairy animals could prove to be a deterrent in the longer term.

The latter is linked to availability of timely healthcare and breeding services, which are severely constrained in most areas and beyond the scope of the project. There were limited impacts to build human capital through the technical assistance provided by the cooperatives. The dairy cooperatives have tried to link technical assistance with credit services or external input supply but there is no monitoring systems in place in the cooperatives to measure the outcomes of and incentivise the utilisation of these services. The project appeared reluctant to insist on accountability of or to engage the cooperatives in identifying and implementing outcome enhancing measures. The cooperative leadership got capacity building inputs to improve governance and business skills – however they lack advocacy skills and indicated apprehension about confronting powerful market players and/ or public authorities like DDA where price wars and market related issues were concerned.

In general market linkages for quality milk have resulted in an important increase in social capital for SHFs. Here too the cooperatives/ VMGs seem to offer reliable market options to counter uncertainties. Technical assistance and access to credit helped households to re/build assets- for some it was the first opportunity to invest in dairy as an enterprise. However inspite of the cooperatives, many dairy farmers divert considerable volumes of milk

to local retailers or small processors. SHFs decisions to deal with local traders (other than coops) is linked to their trust relations that might be based on informal credit linked transactions mainly for meeting consumption needs. The costs and conditions of selling milk to cooperatives – farm- gate prices, quality parameters demanded, delayed payments, transporting the milk – also encourages side selling by the coop members.

Most small and medium farmers struggled to build physical capital – such as dairy cattle, animal housing, tick control measures. Chaff cutters, rainwater harvesting systems were some of the physical assets where considerable investments were visible. Cost sharing and credit (SACCOs) facilitated these investments.

The project reported that 1,500 jobs were created on-farm, of whom 17% women and 66% youth. Most persons are employed to work as milkers, farm managers, calf workers and feed management. The reported number of jobs created off-farm is 3,201 (27% female). The reported jobs were created at cooperatives (131), processors (11) input distributors (13), yoghurt making small scale companies (93), and school milking feeding-from schools (1,261) among others.

Any impact on nutrition will be related to milk or yoghurt intake by school children, as no other nutrition-related activities were implemented. The project database shows that children from 1,510 schools consume milk, and 39,386 children from 97 schools consume yoghurt. Because the milk consumption per child is rather low and stays below the recommended amount, any impact on nutrition will be low.

The TIDE project saw upgradation of the dairy value chain not only as a means to increase farmers' incomes but also to improve the safety and availability and consumption of milk-a nutrient-dense food. Nearly all households in the project area consume milk but almost 80 percent of the milk produced is marketed.

The project presented a positive narrative around the developmental, income generating, poverty- alleviating and empowering role of yoghurt (Yoba). The evaluators didn't see data to corroborate that (e.g. what percentage of the milk produced is used for yoghurt production? Price difference/margin between milk and yoghurt per liter? What percentage of the income is coming from yoghurt sales for how many HHs?) The core element of this enterprise was individuals or groups sourcing fresh milk from local producers (or cooperatives), processing and packaging the yoghurt based on training and starter kits provided by Yoba, the project's partner. Under different brand names the yoghurt is being promoted as a safe and nutritious alternative to unprocessed raw milk that is widely available and consumed in rural and urban areas. The market has attracted many milk producers (members and non-members of the cooperatives), and also large processors like the Pearl Dairy to enter into what is being seen as an expanding market.

Table 19. Differences in asset building in response to project interventions

	Social capital	Natural capital	Human capital	Physical capital	Financial capital
Smallholder farmers (with diversified livelihood portfolio)	New links to coops/ VMGs/ VLGs; for some coops a trusted buyer and provider of technical assistance and credit services. However some SHFs struggle to benefit from the new linkages and maintain links with local buyers	Major limitations with landholding and improving soil fertility;	Lease likely to have upgraded knowledge and skills for improving milk production by employing better practices	Least able to reinvest in gains from dairy into dairy to build further assets (competing claims on income)	Limited income benefits from milk sale due to low productivity
Medium farmers	Links to coops/ SACCOs provided access to credit, technical assistance and other services; depend on pre-existing links with local traders	Possibility to expand dairy activities often with credit provided by dairy SACCOs; land and soil fertility issues	Likely to use new knowledge and skills for improving milk production; difficulty to sustain improvement due to limited technical assistance/ access to extension	Careful investment in equipment for on-farm production	Limited income benefits- most farmers have credit burden
Large-scale dairy farmers	Cooperative membership + strong links to large processors, local markets; TIDE offered additional source of credit	Relatively large pre-existing pastures; quality of pastures increased due to project interventions	Generally upgraded their knowledge and skills for milk production; effective access to training and credit helped in modernising production system	Significant increase in physical capital through better milk prices and long term credit; avg investments for dairy exceed SHFs (double?)	Some income benefits and access to cost sharing, credit was favorable

5.8 Provide an opinion of the effectiveness, efficiency and relevance of the strategy and activities of ISDAP to enhance the inclusion of smallholders in the dairy sector and to enhance their productivity and income.

ISDAP was intended to diverge from TIDE II, by specifically targeting smallholder farmers. It was decided to implement ISDAP in different districts from TIDE and the beneficiaries were not specialised dairy farmers, but mixed farmers with dairy as one of their businesses. This would require a different project identification, but ISDAP is mirrored to TIDE, with the same four project components.

Financial capital is more than income or credit linkages. Working capital implies investment in other livelihood assets – natural and physical – such as soil fertility, land productivity, dairy animals, housing, equipment etc. it is also an important entitlement mechanism to meet other household expenses such school fees, healthcare – it is therefore a means to various ends. Is access to credit the only way to address financial capital? What are the other constraints that affect the capacity of SHFs to take advantage of new opportunities – e.g. limited land and labour – that can inhibit expansion and adoption of better practices. Investments involve strategic choices and significant trade-offs between diverse livelihood activities. This calls for a more holistic approach to value chain development (rather than merely addressing/ targeting the weakest links in the chain such as provision of technical assistance or access to credit. Project should include interventions to address the underlying constraints and capacities of SHFs- such as land tenure, credit collateral (for youth), labour constrains, technology changes, trust and cooperation, business skills- in a sustainable manner.

6 Lessons learned

Lesson 1 - Small and medium scale dairy farms need time and support to improve their productivity and transition to dairy enterprise farms.
TIDE II dealt with three different types of dairy farms: i) Large farms with 100-200 dairy cows with large volumes of milk picked up directly by large processors and/or preferred dairy cooperatives; ii) Medium sized dairy farms supplying milk to designated milk collection points set up by processors and/or cooperatives, and iii) Smallholder dairy farms treating dairy as a livelihood option complementing other farm and non-farm activities. However the project interventions in TIDE I and II were not designed to address the needs of the third type within the TIDE project area. Needs and interests of the third group were addressed in separate project areas, as an independent project (ISDAP).

TIDE focused on medium and large dairy farms to help increase and sustain their production volumes and build reliable market linkages, and support the medium scale dairy farms to enhance their productivity, and gradually achieve self-sufficiency in fodder production and thereby reduce the cost price of milk. This approach required adopting several innovations and technologies in a gradual, phased manner starting from rainwater harvesting to forage cultivation to quality testing etc. to grow into 'professionally' managed dairy enterprises. Here too, the medium scale farms needed more investment to sustain the changes in practices. The project supported them by creating cost sharing facilities and low interest credit access via SACCOs. However short repayment cycles made the loans very steep for these farmers to bear. Therefore, rather than achieve considerable positive margins, the farmers seemed liable to make losses. Further while the capacity building efforts/ training did lead to considerable improvement in production, fluctuating milk markets and prices intensified the losses.

This suggests that in the project design, a project period of three years is too short for small and medium farmers to scale up to an enterprise level. Dairy farming has its own specificities -as compared other agriculture/ livestock commodities- such as dependence on land and fodder, high fixed costs per cow, and the labour-intensive nature of milk production, which makes adjusting to market changes difficult. Therefore farmers –smallholders in particular - need a more gradual and longer than five-year horizon to be able to invest and generate enough income to repay loans and experience the value of their investments before they can make dairy farming a "profitable enterprise".

Lesson 2 - Strengthening collective capacity does not always lead to better bargaining power particularly for smallholder farmers.
Organising farmers into dairy cooperatives[5] has been acknowledged as one of the more effective ways of linking smallholder dairy farmers to value chains and markets. Structurally, dairy cooperatives have the legal status that potentially allows them to be competitive in the milk market however in reality there are differences in their capacities to deal with exigencies of the market – competition, price fluctuations, and buyers' demands including quality standards.

[5] For example, Operation Flood (AMUL)- three-tiered dairy cooperative model in India aggregating milk production by small farmers at the village level, through a quality-based pricing system with value addition (chilling, processing, input supply, breeding services etc.) provided at the district level, and marketing taken up at the state level

TIDE in collaboration with Agriterra adhered to the cooperative model that focussed on strengthening the functionality of existing dairy cooperatives. Almost all dairy farmers were members of the cooperatives but not all supplied all the milk they produced to the cooperative. Some large farmer members refused to supply milk to the cooperatives owing to distrust in the management and leadership, stating reasons of 'politics'. Some other farmers were lured (by offering higher prices) into direct supply to processors operating in the cooperative's catchment area, while some mentioned that in spite of getting a lower price, they were compelled to supply milk to cooperative as it was the closest collection point. Farmers expressed inability to negotiate the price, quality standards and premiums and/or volume bonuses with the processors. The role played by the cooperatives (and the federation UCCCU) in representing farmers' interests, and reducing the monopoly of the processing companies, and affecting prices of local milk remains limited/non-existent. It is worth examining whether the project would have been able to better achieve its goal of establishing inclusive dairy value chains by adding and capacitating an advocacy component to strengthen the voice of the dairy collectives in the project design.

Lesson 3 - Projects need flexibility and a strong/regular engagement with policy makers to adjust to policy changes and market fluctuations.
At the start of the project, the market was conducive to meeting the increasing demand by stimulating local milk production. There was a well-developed export market (Kenya) with no bias towards the quality of milk and dairy products from Ugandan dairy companies. However in the course of the project the market changed – there was a ban on exports – which resulted in shifting focus to domestic markets. Consumer preferences in the domestic market favoured trading of raw chilled milk in place of pasteurized milk and other dairy products. Also with fluctuating milk prices within the country (induced by the large processors?) the project strategy - to provide support based on cost sharing that was based on certain assumptions about market conditions - became unviable to farmers. The experience indicates the need to be open to changes in polices of countries and private sector partners in order to adapt to (unforeseen) changes in market conditions. Likewise a strong/ regular engagement with policy makers – providing evidence to inform their policies – should be an integral part of the project activities.

Lesson 4 - VC selection for pro-poor value chain development requires different criteria.
This lesson in fact questions whether full-fledged value chain development interventions are the best way to bring about inclusive development. Underlying social issues that create inequalities are difficult to address via commercial, economic development approaches. SHFs by definition have limited access to land, and other resources to invest in productivity enhancement, run the risk of becoming food insecure if they focus on only one commodity catered to the value chain (and if markets crash), have limited capacities and are limited by social norms (esp. women) that might affect the rewards (e.g. profit margins) and the rewards in turn are affected by market fluctuations.

Value chain activities that support farmers to improve production and access markets might help increase incomes but will be less effective in addressing household level food insecurity and poverty reduction – where SHFs depend on a diverse livelihood portfolio and various food production/ procurement options. Commercially oriented value chain development approaches promote competition in markets that exclusively benefits bigger farmers and tends to marginalise small producers (owing to high transaction costs and poor economies of scale). Processors i.e. the main market actors for milk in TIDE are obliged to compete through better quality at lower costs to remain in the market. Value chain development projects addressing needs of SHFs ought to be based on a sound analysis of both technical and social development challenges[6]- mere practical or opportunistic considerations such as

[6]For example – percentage of SHFs engaged in the VC? Barriers to their entry? (how) will they benefit in terms of income and employment, from the VC development?

government priorities, donor funding, influence of powerful stakeholders (public/ private) and/or existing and potential market demand alone is not enough. Such projects require a mix of functional upgradation and social transformation interventions needed for the value chain development to contribute to poverty reduction and gender equality. This is being achieved to some extent in ISDAP – however given the combination of difficult terrain, limited infrastructure for transportation, bulking and processing in the ISDAP project areas and the perishable nature of milk, there is limited value addition in the commercialisation of the dairy value chain there. Balancing rewards and risks continues to remain a challenge.

Lesson 5 - Interventions for inclusive dairy development require a shared understanding of the different starting conditions of smallholder farmers.
For the project to promote and support dairy farming as a viable business model that would work for smallholder dairy farmers it was important that all concerned had a thorough understanding of the dynamics of their production conditions (as different from medium and large-scale farmers). Differences in the starting conditions – viz. farming systems and resources and their effects on milk production and marketing cycles, and seasonal variation needed a different strategy. The project took this into consideration while designing interventions in ISDAP by creating the necessary backward linkages (e.g.AI services, linking with DVO for healthcare), and forward linkages (VMGs linked to SMP/ dairy cooperatives). The project did well to employ employed professionals/ teams not only with an understanding of the original project design (TIDE), but who could steer the ISDAP project towards streamlining production and market linkages of smallholder dairy farms participating in the project.

Lesson 6 - Local service providers need to be linked to credible public, private or non-governmental organisations for long term technical monitoring and quality control.
Local service providers need time to translate their learnt skills and knowledge into expertise that can yield good results and create value for the farmers. There is also a gestation period required for gaining trust- which in turn comes when results are seen. The project introduced fee-based service provision (AI, Rumen8) and provided the necessary supervision and technical backstopping in the initial years – it was not clear whether and how this would be continued, by whom (the PDTFs?) and if the service providers would be able to afford refresher trainings provided by them. It has been widely acknowledged that to prevent malpractices and exploitation of farmers, most services need monitoring in the technical aspects, for example AI needs to be by qualified licensed veterinarians as well as support to assure consistent supply of quality inputs. The AI technicians trained by the project were reporting the district veterinary department (DVO) who was also responsible for semen quality and price regulation, and provision of semen, liquid nitrogen at cost. The DVO mentioned that their department had limited resources to technically monitor the service providers.

Lesson 7 - The motivation for public extension and advisory services hinges on incentives and resources available to the extension workers.
The project reinstated farmers' trust in extension workers and given that small and medium farmers still need technical advice and facilitation for inputs it is important that the dairy cooperatives and/or district government continue to support mobility and technical backstopping of their extension workers; most extension workers saw combining their advisory services with inputs sale as a way to sustain their activities but in the longer term this could become counter-productive if their interests towards 'selling' inputs overtakes their extension role. The challenge is to get the processing companies to extend their provision of advisory extension services beyond their large suppliers.

Lesson 8 - Farmers are willing to pay for services if they see immediate value in the services in terms of increased milk yields, remunerative markets and saving on healthcare.
Technical training helps farmers to recognize/ diagnose problems and seek timely help from

paravets and/or veterinarians, for example, the hoof trimmers as well as farmers both confirmed that they now realise the value of hoof trimming services in keeping their cows in better shape and sustain their productivity over 3-4 lactations, and therefore will continue to need this service from trained service providers.

Lesson 9 - Building good/ equal working relations with partners with different interests in the project needs time and common vision.
Typically in a donor funded project, financial contribution creates unequal relations/ a hierarchy in the minds of the partners. TIDE project's emphasis on developing a clear business case as a precondition and granting subsidy seemed to work well with large farmers. This was based on the earlier experience and familiarity with the local context that helped decide how different activities should be carried out. SNV's presence in the area provided insights into how they wanted to stimulate medium and large farmers to enhance local milk production. They were also able to engage with large processors to participate and pilot some of the interventions (QBMPS) keeping their business interests in sight. However the project stayed away from facilitating the cooperatives to obtain long-term supply contracts thereby jeopardising the commercial viability of the cooperatives. The project capacitated some large farmers to set up PDTFs and with the reputation they built in the course of the project – the PDTFs are now sustaining their training facilities for fee-based training.

While working with smallholders (ISDAP) towards developing milk production and quality, changes in their context became a turning point in the project that forced them to work together with other partners (LSPs) to redefine the project strategy.

Lesson 10 - Processing companies have to align their activities with their business purpose/ profitability.
As commercial ventures, it is difficult for expect private processing companies to promote equitable business practices. Their milk procurement is based on market demand - when the demand increases, they have to procure more milk locally and for that, they will be competitive and go to any extent to ensure supply of the required volumes and quality. Therefore, so long as the market demand is uncertain, small and medium farmers will have to depend on cooperatives to sustain their production and market linkages. The same applies to training and extension support to dairy farmers which is in the domain of public institutions. Public funding will always be limited, therefore projects should find ways of motivating businesses to develop strategies to accommodate social gains as well.

6.1 Some recommendations for future projects

1. Clearly define and describe the intended project beneficiaries.
2. Invest in a logical and workable Theory of Change from the start, and periodically validate. Reflect on the higher-level outcomes and goal.
3. Make a good assessment of the political economy and power relations in the project area.
4. When working with demonstration plots or interventions, select average, replicable examples, instead of taking farmers that are already better off.
5. After introducing demonstrations and pilot activities, make a realistic assessment of the time and investment needed to enable and ensure adoption by the wider community.
6. Ensure that project benefits are accessible to all envisaged beneficiaries, to achieve inclusive results, and equitable benefit.
7. When setting targets to service providers, ensure the targets are inclusive and not biased to achieve quick results.

8. For sustainable system changes, periodic and strong involvement of policy makers at national level is required.
9. A value chain approach, or a market systems approach, requires a thorough analysis of the bottlenecks and an intervention strategy in the interest of intended beneficiaries. Often, producers benefit more from interventions further in the value chain than by direct technical intervention at production level. These approaches require flexible and adaptive project management.
10. Support to cooperatives should, apart from modular capacity strengthening, include elements of coaching and tailor-made support.
11. For good evaluation, comparison with a control group would be ideal. Provisions of control measurements should already be made at the start of a project.

Annex 1: Terms of Reference

Background to TIDE II project.

The Embassy of the Kingdom of the Netherlands (EKN) supports food security in Uganda. In the EKN multi- annual plan 2019-2022 it was indicated engagement would be guided by a market-led orientation on agricultural development. With the main objectives to increase income and productivity of farmers and enhance their resilience to shocks. The TIDE II project fits in that picture.

The project targets medium and large scale farmers in South-West Uganda and market actors in order to transform the dairy sector in Uganda. The project achieved important results in that perspective.

During the implementation of the Multi-Annual Country Strategy of the Netherlands in Uganda (MACS) and the different projects, it became apparent that smallholders were not benefitting as expected from the developments in the different sectors. As smallholders are central in the donor's policy, this was amended in the MACS 2023-2026. Also, different projects have been re-strategized to work on the main outcome areas as defined in the results framework of Inclusive Green Growth Department, IGG, of the Ministry of Foreign Affairs:

people lifted out of undernourishment
small scale food producers doubled productivity and income
hectares of farmland converted to sustainable use

For The Inclusive Dairy Enterprise (TIDE) II this has led to the development of the Integrated Smallholder Dairy Development Program (ISDAP) component.

Landholdings are large in SW Uganda with an average of 60 has. Extensive cattle keeping is dominant. The TIDE project focuses on the more commercial and relatively larger-scale farmers.
The Integrated
Smallholder Dairy Development Program (ISDAP) component has been set up to addresses the issues specifically affecting smallholders. This includes developing dairy products within the context of farm systems, cross-utilisation of waste and by-products, access to markets and risk management, how they can be part of the dairy developments. This requires another approach and tools. ISDAP is considered a separate project by the implementer, it builds on the lessons of TIDE and is developed by the TIDE team. The two teams are both lead by the same team manager.
Because of these links, this evaluation will mainly focus of TIDE II, but refer as well to the relevance of the developed smallholder component.

The Inclusive Dairy Enterprise Phase 2 (TIDE II) is a 4-year project (1st January 2020 – 31st December 2023) with a total budget of EUR 10,4 million, funded by the Embassy of the Kingdom of the Netherlands (project no. 4000003332). TIDE II is implemented in Uganda by SNV Uganda Netherlands Development Organisation (SNV), in collaboration with local stakeholders and international knowledge organisations. Some of the key stakeholders include dairy farmers, research organisations, the government of Uganda policymakers and the regulator (Dairy Development Authority), input suppliers and service providers, financial institutions, cooperatives, milk transporters, processors, consumers, University of Wageningen (support M&E function), the National Agriculture Research Organisation, Mbarara University of Science and Technology, Bles Dairy Consultancy (The Netherlands), ProDairy (Kenya) YOBA For Life, Agriterra and any other individuals or groups of people that may be impacted by the project

The TIDE II follows the TIDE I project (activity 28028) that covered the period from 15 September 2015 to 31 December 2019.

TIDE I goal was to reduce poverty and to support dairy sector transformation in Southwest Uganda to achieve increased farm incomes, improved household nutrition and employment for 20,000 farmers. Sector transformation commenced a few years before the start of the project, with the opening of the region through an international trunk road and other infrastructure (surface water dams in farms and rural electrification), the upgrading of local breeds by crossing with exotic breeds, investments in the cold chain through provision of coolers to – and the formation of - dairy cooperatives, and foreign investments in processing capacity within Southwest region. This prepared the basis for the creation of an export market and increased demand and prices for raw milk, forming a strong pull factor for investments by farmers and cooperatives.

TIDE I developed an approach on how best to support this sector in transition and spur it, by focusing on 4 components:

1) Improved Dairy Farm Productivity (Training, Education Advisory & Forage Dairy Nutrition)
2) Milk Quality
3) Sector Regulation and Cooperative Sector Development
4) Nutrition/School Milk

The project's Theory of Change or logic was shaped around three principles:

a) Kick-starting and integrating markets for input supply and services, collective marketing of raw milk (including payment based on quality) by strengthening farmer organisations and cooperatives and linking the sector to schools for school feeding.
b) Forging partnerships with government and development partners for the institutionalisation of project initiatives and to create leverage.
c) Commercialising dairy production by stimulating a transition from extensive farming or purely grazing, to semi-intensive dairy farming practices.

The project strategy was to stimulate and support market-based solutions and to respond to the needs of the market, by applying a flexible approach, based on incremental knowledge and a deeper understanding of market opportunities.

Key in the TIDE 1 project was the creation of a commercial market for inputs and services (including training and finance), that would enable farmers and cooperatives to invest in products and infrastructure to intensify and increase production and productivity. The project triggered processors to invest in a milk quality (bonus) payment system, in addition, schools were supported to engage in a school milk project with parents paying for milk. This was facilitated by a grant and subsidy mechanism to buy down the initial interest rates (risks) for farmers, and input suppliers through Savings and Credit Cooperative Organisations (SACCOs), which were stimulated to offer relevant and affordable services and products for the dairy sector stakeholders, to enable them to intensify and seek market integration.

TIDE II Project

The overall aim of TIDE II is to deepen and up-scale TIDE-1 interventions. The TIDE II focused especially on the TIDE-1 project area (7 districts) and extended its activities to 14 Districts to increase impact by supporting farmers and service providers with the requisite knowledge and skills to reap benefits from the investments made.

Under the deepening component, TIDE-II focuses on the current TIDE-1 project area (7 districts) to increase impact and support farmers to benefit from the investments made. From market creation (TIDE- 1), the focus shifted to market development and a strategic approach to dairy value chain development. The latter by helping to create sustainable dairy intensification and developing a commercial forage sub-

sector. This to ensure that the market delivers products and services to dairy farmers that are accessible, relevant, affordable, and of good quality with a large component of knowledge and skills transfer.

TIDE-II supports interventions further up the value chain: working with cooperatives for enhanced services to farmers, value chain linkages and domestic market diversification, scaling up the school milk project, and supporting initiatives and systems for enhanced access to commercial finance.

Up-scaling is pursued by following the market in the products and services developed under TIDE 1 that are relevant for commercializing dairy farmers throughout Uganda (mostly peri-urban Kampala and Rwenzori Region). Private sector companies are actively supported to market their products and services in those areas, mainly through mobilising technical expertise, networking, and market linkages.

TIDE II guiding principles

Deepening and scaling (see above).

Stakeholders and beneficiaries

The key stakeholders include commercial dairy farmers, research organisations, the government of Uganda policymakers and the regulator, input suppliers and service providers, financial institutions, cooperatives, milk transporters, processors, consumers and any other individuals or groups of people that may be impacted by the project.

Gender: balancing benefits

Related to the context and the various approaches for social inclusion and gender, within TIDE-II the following elements are given attention:

- Household dialogue: focus is on succession planning, to create an entry point to bring women and youth into the family business.
- Women's business: this focuses mainly on women as heads of households; in addition to the subsidy that women are entitled to for training at the Practical Dairy Training Farms (PDTFs), extra subsidies will cover some of the other products for dairy farmers.
- Women leadership: a special coaching trajectory is undertaken for women within the management and boards of the dairy cooperative societies.
- Markets: Yoba for Life is supported to introduce yoghurt-making to female members of cooperative societies.

Youth Employment and Engagement

The role of youth in dairy value chain in Southwest Uganda is evolving. Within the patriarchal culture, their role was traditionally limited to providing labour (herding) within the livestock household. Three trends have emerged in TIDE-1, because of commercialisation:

a) Professionalization of farming: a shift from low input – low output farming to a more commercial system.
b) Professionalization of labour: within the more commercial orientation of farming, technical skills at different levels within the farm are becoming more important), and
c) Entrepreneurship: commercialisation is leading to the emergence of an input sector, providing products/services to dairy farmers, which attracts youth.

Climate-smart interventions

TIDE interventions aim to increase productivity per unit of land and per animal, and reduce the numbers

of unproductive animals. A side effect would be the reduction of over-exploitation of vulnerable

ecosystems causing, a.o. deforestation and soil degradation. Enteric methane emission is being reduced by better feed and manure management.

Access to finance, innovations

In TIDE-1 a generic system of grants on equipment and subsidies on loan interest rates was introduced, to create the market for selected input and service providers. This was phased out at the end of TIDE-1. In TIDE-II it was replaced by interventions that are geared to increasing access by dairy value chain actors to commercial finance and financial products tailored to their needs. A separate EUR 3 million funds for lending to small holder dairy farmers (SHF) through SACCOs, was set up outside TIDE II, and is managed by Pearl Capital Partners, TIDE provides technical input for the development of credit products.

Some generic subsidies or co-financing arrangements are maintained under TIDE-II, viz. under the school milk programme (clean water and clean energy), for setting up training and extension in dairy cooperatives, and to encourage youth and women to enter the dairy value chain, especially through subsidized training at the PDTFs.

Innovation Fund

To address certain systemic bottlenecks for dairy intensification, especially in forage production and milk quality, a targeted approach is adopted in TIDE-II where companies who wish to invest in innovative technology or business models, are given the opportunity for grants through an Innovation Fund, as seed capital to co-finance and buy down risks at the start-up phase of such initiatives. The grant can be for hardware, technical advice, exposure and training.

Market system approach

The project was guided by a marked-led orientation on agricultural development. Private sector involvement was promoted, including collaboration with Dutch agro-companies.

TIDE-II looks at dairy as a market system with dairy value chain actors (farmers, coops, processors, and consumers), dairy value chain supporters (input suppliers and service providers, incl. finance and dairy advisory) and dairy value chain facilitators or enablers (government policies and the regulator).

TIDE-II is characterised by an approach trying to address key bottlenecks in the sector and the wider dairy market system. By doing this it follows a market-led approach through the private sector and farmer investments and parents' contributions (school milk programme), but it also engages with government agencies for support at the policy level.

The market development approach of TIDE II. Market improvement was focused on getting service providers to deliver better quality (critical for profitability), to get more providers to enter the market, and to make their products and services available to other market segments outside the core TIDE area (for which additional incentives were created). The market interventions on cooperatives, milk quality and school milk/yoghurt aimed to create systemic change, by demonstrating their added value in consolidating the role of collectives, increasing the competitiveness of Uganda's dairy products on the world market, and supporting the expansion of the domestic market for milk and milk products respectively.

The project stimulates participation of Dutch organisations and private sector companies in the development Ugandan dairy value chain, to assure the continuation of TIDE innovations and interventions after the project. The Dutch private sector particularly supports providing technologies, knowledge and expertise that is not available locally.

The socio-political environment is (potentially) supportive of sector transformation. Farmers have a strong personal and historical attachment to livestock and dairy. They also form a politically important group, due to the fact that the country's political leadership comes from this background. The cooperative movement has recently gained credibility. In this context, it is important that the project is aware of the political economy in order to assure inclusive development.
The impact of the activities related to the sector development through market actors and commercial farmers on smallholder farmers was not part of the contextual analysis of the project.

At the sector level, TIDE II participated in various forums that addressed key issues in the Ugandan dairy industry under the leadership of the Dairy Development Authority (DDA), Ministry of Agriculture, Animal Industries and Fisheries (MAAIF), Ministry of Education and Sports and the Ministry of Health.

TIDE II Theory of Change/Results Framework

The aim of TIDE II is: Poverty reduction through improved dairy farm incomes, household nutrition and employment opportunities.
Outomes:

1. Increased dairy productivity, through professionalization of dairy farming, creating access to quality services including finance
2. Improved milk quality through up-scaling Quality Based Milk Payment system
3. Upgrade value chains, by expanding domestic markets, strengthening position of cooperatives and support intra-VC relations
4. Improved access for children to nutrition (school milk program)

The project aims to achieve the above through interventions in 4 pillars which form the outcomes of the project: Productivity, Milk Quality, Value Chain and Nutrition.

These 4 pillars are to a large extent informed by the market context and sector analysis, where the project aims to contribute to increased resilience to price volatility, climate change and mitigation of environmental footprint, and to enhanced profitability and increased competitiveness across the dairy value chain (shared value) for increased incomes, employment, and improved nutrition at the impact level.

The project results framework identifies each of these outcomes, outputs, and key interventions.

Target groups

Ugandan dairy VC actors	- Technical training institutes, - Processors, cooperatives, dairy - Dairy farmer cooperatives, - Local capacity builders, PDTFs, dairy advisory and farmers, milk traders, milk processors, community based government, schools (precoop extension units transporters, input and service enterprises, umbrella primary, primary & secondary), - Commercial fodder suppliers, providers, advisory services, organizations, dairy farmers , farmers, processors, financial agric. contractors, farmers, government, research training and extension units , institutions input and service providers organizations, financial dairy advisory services, and financial institutions institutions financial institutions
Dutch private sector	Input suppliers, service providers, and investors in training and advisory, feed and forage, breeding, cold chain, farm recording software ,cow house design and interiors, farm mechanization, animal health, laboratory services (soil, feed, milk), others.

Sector Transformation

Tide also aims to contribute to sector transformation. TIDE-2 proposal document lists ten indicators (see below), which combined capture (sustainable) dairy sector transformation. The project does not work on all these indicators as some are outside its control and even influence but focuses on those that are at production and bulking level, working with input suppliers and service providers and cooperatives and processors willing the invest in the supply chains for increased production, productivity, and quality of milk.

On the (domestic) market side focus is on scaling up/out the school milk project.
The following indicators influence whether sector transformation is impaired, enhanced and sustained.

1. Are dairy exports continuing to grow and diversify?
2. Are processors investing in the dairy value chain?
3. Is the domestic market growing more strongly?
4. Is inclusiveness and the market position of cooperatives and farmers improving?
5. Are cooperatives developing service hubs?
6. Are cow productivity and access to quality forages and suitable breeds increasing?
7. Are seasonal supply fluctuations reducing?
8. Are farmers getting access to credit?
9. Is the input/service market developing?
10. Are farmers gaining access to relevant training and extension?

Objectives of the Evaluation

The purpose for this evaluation is to assess the performance of the project and capture project achievements, challenges, and best practises. On the other hand, it offers a learning aspect for all stakeholders. The evaluation will also identify key lessons learned, challenges, unintended effects and the flexibility of the programme to adapt and respond to the changes and sustainability in the Dairy sector.

The objectives of the evaluation are to:

9. Assess whether the project has achieved inclusive development of the dairy sector.
10. Assess whether the project has led to improved production, a conducive enabling environment for the dairy sector and strengthened position of cooperatives in the dairy sector.
11. Assess whether this has led to increased incomes and resilience for market shocks for

farmers and members of the cooperatives.

12. Identify, assess and measure unintended effects of the project. Possible unintended effects could be on the position of smallholders, dominance of large farmers in cooperatives, concentration of land tenure, results of policy changes on different groups of actors, others.
13. Assess the capacity and the effectiveness of the project and its different implementing partners to adapt to changing environment and to incorporate lessons learned;
14. Identify weaknesses and strength of the project design, scope and implementation strategy;
15. Assess, to the extend possible, the results of the project in relation with the expected impact, such as income, employment and nutrition.
16. Provide an opinion of the effectiveness, efficiency and relevance of the strategy and activities of ISDAP to enhance the inclusion of smallholders in the dairy sector and to enhance their productivity and income.
17. Identify and assess key lessons learned, challenges and draw recommendation for future dairy and or livestock programs, also from the perspective of the IGG results and objectives.

In annex 1 specific questions are formulated with respect to: relevance, coherence, effectiveness, efficiency, impact and sustainability. These questions may be complemented by the consultant.

Methodology
The evaluation will follow a mixed-method approach, including the following:

- Elaboration of the methodology for the evaluation presented in a inception report.
- Desk review of all relevant program documentation, such as project document, mid-term review, annual reports, baseline, midline and endline reports, etc.
- Undertake fieldwork in TIDE II and, less intensively, ISDAP intervention areas, interviews with key local stakeholders; such as (in)direct beneficiaries, (local) government, cooperatives, processors, small businesses and project staff and implementing partners.
- Stakeholder consultations at local and national level.
- Qualitative and quantitative analysis based on results of the evaluation activities, including field work in the targeted areas (including both local government staff and farmer household and other actors in the targeted areas). Specific attention needs to be given to probing beyond 'expected answers' to get to underlying opinions.
- Qualitative analysis to enable the formulation of an opinion on the impact of the project.
- Presentation of the key findings to EKN and the project.
- Preparation of a draft evaluation report for review by EKN containing the mission's main findings and recommendations.
- Elaboration of the final report, including an executive summary, and related annexes.
- Any subsequent adjustments required by EKN, as needed for final approval of the reports.

In annex 2 a table with the main stakeholders is presented.
The evaluators will design and decide on the program of the evaluation and the to be visited partners, beneficiaries, areas, etc. SNV will offer support based on the developed program, if required.

Deliverables

- An inception report, including workplan, detailed methodology and risk assessment, to be delivered within two weeks after signing the contract
- A briefing before the start of fieldwork
- A presentation of initial results and draft recommendations, to be presented to the embassy and TIDE II upon the completion of fieldwork
- A draft report, to be submitted within 10 days after completion of the fieldwork
- A final report, to be submitted within 10 days after receipt of feedback from the embassy.

Required expertise

The team of three consultants for this evaluation must cover the relevant expertise areas and have the minimum level of experience:

- Dairy development, cooperative development, policy formulation, socio-economic development, political economy.
- Team leader with at least 15 years international experience with implementing/reviewing food security interventions in Africa.
- Broad experience with implementing/reviewing market-led development at the cross-roads of smallholder inclusion.
- Broad experience with food security and smallholder agricultural development
- At least 10 years experience with qualitative research.
- The team of evaluators need experience in East Africa, preferably Uganda
- Excellent English writing skills

All organizations that are part of the framework agreement evaluations 2020 can submit an EoI. However, proposed evaluators should have no previous or present involvement in the design and/or implementation of TIDE II. This includes research, monitoring and advisory services.

Planning

The evaluation will start not later than 15 October. The draft report has to be submitted by November 30, 2023. It is foreseen that the evaluation will take 80-100 person-days. At least 70% of the required persons- days will allocated for field work. The maximum budget is 100,000 euro.

Logistics

The consultant is responsible for arranging visas, travel and insurance.

Lodging is to be arranged by the consultant. TIDE II can help to book lodging in the project areas. Transport will be hired by the contractor.

Submission process

Interested organisations are invited to submit an expression of interest within 5 working days of the publication of this ToR. Based on an assessment of these expressions of interest, selected organisations will be invited to submit a concept note. Based on an assessment of the concept notes, one or more organisations will be invited to submit a full proposal.

Detailed questions to be answered

RELEVANCE: IS THE INTERVENTION DOING THE RIGHT THINGS?

Description of the criterion[4]:

The extent to which the intervention objectives and design respond to beneficiaries', global, country, and partner/institution needs, policies, and priorities, and continue to do so if circumstances change. Note: "Respond to" means that the objectives and design of the intervention are sensitive to the economic, environmental, equity, social, political economy, and capacity conditions in which it takes place. "Partner/institution" includes government (national, provincial, local), civil society organizations, private entities and international bodies involved in funding, implementing and/or overseeing the intervention. Relevance assessment involves looking at differences and trade-offs between different priorities or needs. It requires analyzing any changes in the context to assess the extent to which the intervention can be (or has been) adapted to remain relevant.

Specific questions to be answered:

[4] All descriptions are found in www.oecd.org/dac/evaluation/revised-evaluation-criteria-dec-2019.pdf [accessed 20-01-2021]

- How do different stakeholders (community members of different (socio-economic background, local government at different levels), assess the relevance of the project to their needs and priorities?
- To what extent has the project taken the different needs and priorities of different groups into consideration?
- To what extent has the project addressed the underlying issues that led to the development of the project?
- The extent to which the objectives of TIDE II are consistent with beneficiaries' requirements, country needs, and partners' and donors' policies.
- How has the context in which the project was implemented changed over time, and how has this influenced the assessment of relevance of the project and its components?
- To what extent is the design of specific interventions relevant to the direct beneficiaries?
- Could the relevance of the project have been made higher? If so, how?

COHERENCE: HOW WELL DOES THE INTERVENTION FIT?

Description of the criterion:

The compatibility of the intervention with other interventions in the country, sector or institution. Note: The extent to which other interventions (particularly policies) support or undermine the intervention, and vice versa. Includes internal coherence and external coherence: Internal coherence addresses the synergies and interlinkages between the intervention and other interventions carried out by the same institution/government, as well as the consistency of the intervention with the relevant international norms and standards to which that institution/government adheres. External coherence considers the consistency of the intervention with other actors' interventions in the same context. This includes complementarity, harmonization and co-ordination with others, and the extent to which the intervention is adding value while avoiding duplication of effort.

Specific questions to be answered:

- To what extent was the design and implementation of TIDE II coherent with the objectives of the NL strategy for food security?
- To what extent was coherence sought and achieved with relevant food security projects in the Netherlands embassy portfolio?
- To what extent are the project's achievements in line with policies and plans of the national and local authorities in the targeted areas?
- To what extent was coherence sought and achieved with other projects in the targeted area?
- Could the coherence of the project have been made higher? If so, how?

EFFECTIVENESS: IS THE INTERVENTION ACHIEVING ITS OBJECTIVES?

Description of the criterion:

The extent to which the intervention achieved, or is expected to achieve, its objectives, and its results, including any differential results across groups. Note: Analysis of effectiveness involves taking account of the relative importance of the objectives or results.

Specific questions to be answered:

- Review the quality of the results framework,
- Assess the baseline, midline and endline data against the indicators;
- To what extent did the project achieve its outputs, both in terms of quantity and quality? (explain reasons for over-/underachievement)
- To what extent did the project achieve its outcomes, both in terms of quantity and quality? (explain reasons for over-/underachievement)
- To what extent was the program logic (particularly the assumptions linking outputs to outcomes, and the risk assessment) adequate?
- To what extent was risk management and conflict sensitivity adequate, and to what extent has the implementation of the project been adjusted based on regular assessments of assumptions and risks?
- Assess the translation of the understanding of the context and the political economy in the project strategy and activities;

- Assess to what extent cooperatives have been strengthened, particularly in their management and capacity and negotiation position vis a vis the traders and processors?
- What progress was made in in achieving TIDE II targets, with respect to the 7,000 dairy farmers targeted?
- Were the target groups reached? and how well?
- What has changed for the target groups in relation to milk production, milk sales, milk quality and the dairy value chain?
- What is TIDE II's contribution to the dairy sector transformation?
- How has TIDE's interventions and approach induced positive changes among the businesses of the market actors?
- How well has TIDE II been inclusive as per the project proposal and as per the interest of different types of farmers and businesses?

EFFICIENCY: HOW WELL ARE RESOURCES BEING USED?

Description of the criterion:

The extent to which the intervention delivers, or is likely to deliver, results in an economic and timely way. Note: "Economic" is the conversion of inputs (funds, expertise, natural resources, time, etc.) into outputs, outcomes and impacts, in the most cost-effective way possible, as compared to feasible
alternatives in the context. "Timely" delivery is within the intended timeframe, or a timeframe reasonably adjusted to the demands of the evolving context. This may include assessing operational efficiency (how well the intervention was managed).

Specific questions to be answered:

- Are the project budgets well aligned with project activities?
- Did the project resource adapt to changes in project strategy based on the learning exercises?
- How timely was the implementation of the project (taking into account factors outside the project's control)?

IMPACT: WHAT DIFFERENCE DOES THE INTERVENTION MAKE?

Description of the criterion:

The extent to which the intervention has generated or is expected to generate significant positive or negative, intended or unintended, higher-level effects. Note: Impact addresses the ultimate significance and potentially transformative effects of the intervention. It seeks to identify social, environmental and economic effects of the intervention that are longer term or broader in scope than those already captured under the effectiveness criterion. Beyond the immediate results, this criterion seeks to capture the indirect, secondary and potential consequences of the intervention. It does so by examining the holistic and enduring changes in systems or norms, and potential effects on people's well-being, human rights, gender equality, conflict dimension and the environment.

Specific questions to be answered:

- What are foreseen the long-term effects that have resulted from the TIDE II project interventions including contribution towards the intended impact, positive or negative impacts, or intended or unintended changes?
- What is the project's impact on the different categories farmer households in the target area?
- What unintended (positive and negative) effects has the project had, and on which groups of people?
- Would it have been possible for the project to achieve more impact than has been achieved? If so, what impact, and how could this have been done?

SUSTAINABILITY: WILL THE BENEFITS LAST?

Description of the criterion:

The extent to which the net benefits of the intervention continue, or are likely to continue. Note: Includes an examination of the financial, economic, social, environmental, and institutional capacities of the systems needed to sustain net benefits over time. Involves analyses of resilience, risks and potential trade-offs. Depending on the timing of the evaluation, this may involve analysing the actual flow of net benefits or estimating the likelihood of net benefits continuing over

the medium and long-term.

Specific questions to be answered:

- Will changes induced by TIDE II last? Why or why not? And do we have an effective exit strategy?
- To what extent do relevant stakeholders have a sense of ownership for the different activities?
- To what extent are relevant stakeholders active in ensuring the sustainability of the different activities?
- To what extent was knowledge generated during the project transferred to relevant local actors? To what extent was knowledge transfer (and/or participatory knowledge development) part of the project's implementation approach?
- Are tools developed by TIDE II used by (local) government and/or other actors?
- Specifically for value chain activities: How are activities in the chain developed to assure sustainability and economic viability? How are investments triggering new investments and are repeatable without project support?
- Overall, what key blockages are foreseen in sustaining the effects of TIDE II?

Table with the main stakeholders

Categorization of stakeholders by roles	Stakeholders	Role
	Implementing stakeholders	
Implementing	TIDE project staff	responsible for project implementations
Mandated stakeholders:	National Agricultural Research Organization (NARO)	Carrying out applied research
	Dairy Development Authority	Supporting with implementing of regulation and sector services and specifically supporting the implementation of the QBMPS activities for milk quality
	UCCCU	Bring together primary cooperatives and supporting them in their marketing role to realize business growth.
	Mbarara University of Science and Technology	Providing research and inventory services
Technical stakeholders:	Wageningen University & Research	Supporting with Monitoring and Evaluation activities as well as carrying out learning agenda
	ProDairy	Providing technical advice and training the field of forage production and cattle nutrition R8 as well in the development of the eDairy platform
	Bles Dairies Consultancy	Providing technical advice in QBMPS both in terms of deepening and up-scaling including diversification of the training offer and in the establishment of a private sector-based dairy advisory service in the country.
Co-founding partners	Agriterra	Focusing on building capacities of cooperatives to grow and provide extension and marketing service to their member farmers.
	Yoba for Life	Promoting processing of pro-biotic yoghurt and provision at pre-primary school level
	PUM Senior Experts	Providing practical advice on animal husbandry practices & investment prioritization, extension services, business development support to large/ commercial farmers, CEOs and service providers respectively
	Beneficiary Stakeholders	
Practical Dairy training Farmers	Mutanoga	Facilitating farmers trainings and provision of outreach training to farmers
	Rubyerwa Dairy Investments	
	AGDI	
Farmers	Farmers	Participate in the implementation (adoption) of TIDE II activities
Production Cooperatives/MCCs	150 cooperatives targeted	Providing extension services to farmers and milk market

Financial Cooperatives	Saving and Credit Cooperatives Organization (SACCOs)	Providing financial services to famers
Processors	Processors	Provision of milk market and extension services
Input service providers	Veterinary service providers	Providing demand driven services to dairy farmers and cooperatives.
	Seed and fertilizers service providers	
	Farm implements services providers	
	School feeding program	
SMP- Schools	Nursery schools	Adopt school feeding and nutrition program
	Primary Schools	
	Secondary Schools	
SMP - Uganda Multi-stakeholder committee- Government Ministries	Ministry of Education • Ministry of Agriculture and animal husbandry • Districts	Supporting promotion of SMP through participating in the development of policy briefs on school feed and nutrition

Annex 2: Itinerary

Date	Activity	People met
Tu 10 October 2023	Embassy of the Kingdom of the Netherlands, Kampala	Hans Raadschilders, First Secretary Food Security Timothy Abeikis, Policy Officer Food Security and Agriculture
Tu 10 October 2023	SNV, Kampala	Phomolo Maphosa, Country Director Bashir Kasekende, SNV Food Sector Lead
We 11 October 2023	Travel to Mbarara	
We 11 October 2023	SNV, Mbarara General briefing TIDE	Martin de Jong, Project Manager Joseph Kiirya, Deputy Project Manager TIDE II staff
Th 12 October 2023	SNV, Mbarara General briefing ISDAP	
Th 12 October 2023	SNV, Mbarara Briefings school feeding, value chains/cooperatives	
Th 12 October 2023	PDTF – RDI Mbarara	Philomena Kemijumbi Nshangano, Executive Director Komunda Lauben, General Manager Begumya Wilber, Trainer Musasira Efrance, Trainer
Fr 13 October 2023	SNV, Mbarara Briefings training and extension, milk quality improvement, yoghurt making, forage and dairy nutrition, MEL	Nelson Arinda, Yoba for Life
Fr 13 October 2023	Abesigana Kashari Cooperative, Mbarara	Bajuna James, Chairman Kamishani James, Treasurer Aluda Musitemeza, General Manager Kabenga Sam, Secretary
Sa 14 October 2023	Rwentanga Farm Institute, Mbarara District	William Tukwasibwe, Principal
Sa 14 October 2023	KAGRIC Farm, Mbarara	Polly Musiime, Executive Director
Su 15 October 2023	Travel to Kabale	

Mo 16 October 2023	SNV, Kabale, General briefing ISDAP	George William Oroma, ISDAP Coordinator Moureen Marilyn Ashaba, Adviser Kigezi Region

		Rogers Adiba, Smallholder Dairy Development Adviser Laira Kyazike, Nutrition Adviser SMP Ankunda Glorious, Field Officer
Mo 16 October 2023	Pasture nursery, Kabale District	Benjamin Ariyu, owner
Mo 16 October 2023	Kasherengyenyi Primary School, Kabale District	Rosette Tusingwire, Head Teacher
Mo 16 October 2023	Buranga Secondary School, Kabale District	Naturinda Dalton, Head Master
Mo 16 October 2023	Rain Water Harvesting Tank demo, Kabale District	Eunice Muteebwa, farmer
Mo 16 October 2023	Nyabushabi Small Scale Dairy Farmers VLG, Kabale District	Focus Group Discussion, 4 men, 2 women
Mo 16 October 2023	Hakashenyi Sacco, Kabale District	Julius Mugambagye, Board Chairman Deo Mubangyizi, General Manager
Mo 16 October 2023	Kigezi Primary/Seconday School, Kabale District	David Byamugisha, Head Teacher
Mo 16 October 2023	Kyanamira VMMG, Kabale District	Focus Group Discussion, 7 members
Mo 16 October 2023	Kabalisa VMMG, Kabale District	Focus Group Discussion, 6 men, 1 woman
Tu 17 October 2023	Ubumwe and Twifataye VLGs, Kisoro District	Focus Group Discussion, 13 men
Tu 17 October 2023	Ubumwe and Twifataye VLGs, Kisoro District	Focus Group Discussion, 11 women
Tu 17 October 2023	Kigeze and Nyarutembe VLGs & RWHT, Kisoro District	Focus Group Discussion, 4 men, 6 women
Tu 17 October 2023	AI Technician, Kisoro District	Nkurunziza Edward, AI technician
We 18 October 2023	Rukiga District Local Government	Arinatiwe Innocent, DAO Byiringiro Elizabeth Rita, Deputy CAO Tumwesigire Gordon, PA-CAO Vastina Beyendera, DEO Ndyabegyera Chistopher, DIS Twinomuhwezi Davis, EOSNE Agaba Nelson, DCO Turyamureeba Edison, DCDO Samuel Niwandinda, Vice Chairman
We 18 October 2023	Rukiga District Local Government	FGD with LG education staff
We 18 October 2023	Rukiga District Local Government	FGD with LG agricultural staff (veterinary, commercial, community)

We 18 October 2023	St Clelia Primary School Rukiga District	Fidelis Turyasingura, Headmaster Agawa Mildred, Vice Chair of SMC
We 18 October 2023	Local Service Providers, Rukiga District	Prossy Nakayima, Kigezi Food & Nutrition Felix Ramuel Anabwe, REBDA
We 18 October 2023	Nyakasiru Barisa Kweterana VLG, Rukiga District	FGD with 4 men and 4 women
We 18 October 2023	Kigezi Dairy Farmers Cooperative	Hope Tukamushaba, General Manager
Th 19 October 2023	DDA Mbarara	Dr Moses, Regional Manager Michael, Principal Dairy Dev. Officer Gloria, Senior Dairy Inspector
Th 19 October 2023	Pearl Dairy, Mbarara	Sandeep Ghadge, Head of MCCs
Th 19 October 2023	Nyamitsindo Dairy Farmers Cooperative	
Th 19 October 2023	Sanatos Milk Processor, Mbarara District	Mr Santos
Th 19 October 2023	Simlaw Seeds, Mbarara District	Mujuni Asiima, Field Officer Production Evelyn Katushabe, Office Assistant Gaster Tumwine, M&E Officer
Th 19 October 2023	Local Service Provider, Mbarara District	Innocent Arinaitwe, LSP Forage
Fr 20 October 2023	Kakindo Dairy Cooperative Society, Sheema District	Focus Group Discussion, 8 men, 1 woman
Fr 20 October 2023	EBO SACCO, Mbarara District	Julian Kyakuhaire, Executive Director Robert, Head of Business Alan Abaho, Assistant Head of Business
Fr 20 October 2023	Kashaka Women Entrepreneurs, Mbarara District	Focus Group Discussion, 6 women
Fr 20 October 2023	SUMPCA Farmers Group, Mbarara	Focus Group Discussion
Fr 20 October 2023	Farm visit, Mbarara District	
Fr 20 October 2023	Transporter, Mbarara District	Tumeshigye Johnbosco
Fr 20 October 2023	SAOL Engineering Ltd	Olupot Joseph, Director
Sa 21 October 2023	LSPs working with Rumen8	Joan Atkunda Talent Ahumuza Dan
Mo 23 October 2023	Kazo District Local Government	Divine Kyogabirwe, Deputy CAO JB, Dairy Production and Marketing Officer

		District Animal Husbandry Officer Innocent, Agricultural Enineer
Mo 23 October 2023	Mbuba Cooperative, Kazo District	Focus Group Discussion, 4 men
Mo 23 October 2023	Farm visits, Kazo District	George M., LG Extension Officer Sam Aine, farmer and LC3 Chairman Kenneth, farmer Benjamin Kashungusha, farmer Farm manager
Mo 23 October 2023	Kabubu Cooperative, Kazo District	Focus Group Discussion, 3 men
Tu 24 October 2023	Kihurura District Local Government	Charles, CAO Amon Kayebwa, District Animal Production Officer
Tu 24 October 2023	Kyabagenyi Cooperative, Kihurura District	Focus Group Discussion, 4 men
Tu 24 October 2023	Aba Kaicumu Cooperative, Kazo District	Focus Group Discussion, 4 men
Tu 24 October 2023	Farmers Group, Ibanda District	Focus Group Discussion, 4 men, 7 women
Tu 24 October 2023	4DIZ, Mbarara District	Hilda Nduhura, Executive Director
We 25 October 2023	Kibutamo Primary School, Sheema District	Oliver Atwijuka, Headteacher
We 25 October 2023	Mushanga Mixed Primary School	Didas Asiimwe, Headteacher
We 25 October 2023	Kabwohe Mothercare School	Lay Canon Freedom James, School Director
Th 26 October 2023	Brazavil Nursery and Primary school, Rwampara District	Ms. Enid Ampurire, School Director
Th 26 October 2023	ARISE, Ntungamo District	Enoch Kabuye, Team Leader
Th 26 October 2023	Little Angels School, Ntungamo District	Alfred Zinabwine, Director Fiona, Administrator
Th 26 October 2023	Brilliant Kindergarten, Ntungamo District	
Th 26 October 2023	Itojo Progressive Primary School, Ntungamo District	Ephraim, Head Teacher
Th 26 October 2023	Tiana Foods Ltd, Mbarara District	Immaculate Twasima, Co-owner
Fr 27 October 2023	Debriefing SNV, Mbarara	

Fr 27 October 2023	UCCCU, Mbarara	Kharm, General Manager
Sa 28 October 2023	Travel to Kampala	
Tu 31 October 2023	DDA, Kampala	Akankiza Samson Mpiira, acting Executive Director
Tu 31 October 2023	National School Milk Task Force, Kampala	Akankiza Samson Mpiira, DDA Mutekanga George, MOES Mukalazi Francis, MTIC Joshua Turyatemba, DDA Kabuye Enoch, MOES Mutungi Colin Katungi, DDA Rukundo Peter Milton, Kyambogo University Susan Oketcho, MOES Irene Nabitaka, MOH
Tu 31 October 2023	MAAIF	Dr Oplot Henry Nakelet, Commissioner Connie Achyo
Fr 3 November 2023	EKN debriefing	Hans Raadschilders, First Secretary Food Security Timothy Abeikis, Policy Officer Food Security and Agriculture