



Mid-Term Evaluation

Final draft

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1 Executive Summary

The **goal of Burkina Dry-More** is to build a resilient agro-processing sector in Burkina Faso that provides improved revenue and climate resilience to 3,000 smallholder farmers and sustainable employment to 850 youth and women. An integrated value chain approach is implemented from smallholder farmers to international buyers to introduce 3 new agricultural products (fonio, hibiscus and ginger) for processing by mango processors during the mango off-season. The project aims to address the missing linkages across the value chains, including markets, finance, inputs, cultivation, sourcing and processing, as well as knowledge and management capacity. In addition, the project aims to positively impact the life of 100 emboucheurs in the livestock value chain.

Underlying mid-term evaluation of Burkina Dry More aims to assess the progress made towards achieving its planned objectives halfway through the project, and provide recommendations for improvements in the project design until the end of the project. Specifically, the **mid-term evaluation's objectives** are the following:

- Detail the activities implemented during the period between October 2020 and February 2022, as well as their outcomes.
- Compare the activities and outcomes with the initial objectives of the project, as outlined in its logical framework.
- Analyze the project's performance in accordance with the OECD's Development Assistance Committee (DAC) evaluation framework.
- Provide a set of project management and technical recommendations for improvements for the period April 2022 until September 2023.

The MTE was carried out by AgroDev and Advance Consulting's teams through a participatory approach. The quantitative and qualitative data were collected through project reports, financial data and 16 key informant interviews. The teams used OECD's DAC framework to evaluate the project. The **findings** can be summarized in the following way:

- **Relevance**
 - It's the right time to diversify the processors of the mango value chain, as the competitiveness of the dried mango sector is under threat due to climate change and other upcoming mango producing regions.
 - The project is targeting the actual needs of farmers, processors, cooperatives and its employees.
 - The market-led approach is driver behind project achievements.
 - Targeting experienced processors, not only mango, is successful thus far and increases chances on replication.
 - Introduced new technology is highly needed in the under-developed Burkinabe agro-processing industry.
 - Already provided co-funding from processors prove success of the leveraged project approach.
 - However, no synergy between emboucheurs intervention and work in the 3 agri value chains
- **Coherence**
 - The project's participatory and hand-on approach is highly appreciated by project stakeholders, including farmers, processors, cooperatives, international trading companies, INERA and the Dutch Embassy.
 - BDM is aligned with Burkinabe National policies such as PNDES and the Sahel 2019 – 2022 policy objectives of the Dutch Ministry of Foreign Affairs
 - There are also synergies with the PAPEA project and CBI project.

- Despite genuine efforts to align with other initiatives from Dutch Embassy, unfortunately no synergies were found
- However, the project could improve collaboration with the Ministry of Agriculture and the Ministry of Industry and SMEs
- **Effectiveness**
 - Despite many challenges, such as the project's delayed start, the deteriorating security situation, the COVID-19 pandemic and increased negative effects of climate change, most results were achieved, including engagement of 8 processing companies and 5 cooperatives, first exports of 16 tons, 1,329 of farmers were trained in GAP and CSA, including 389 women and 310 young people, securing International clients for ginger and fonio, development, shipment and installation of new equipment, as well as performance of feasibility, financial landscape and other studies were successfully performed
 - The collaboration with INERA for activities around seed development, an important constraint in Burkina Faso, is a major unexpected positive result of the project
 - Some results were not achieved, including volumes sourced and exported, unsuccessful variety trials, increased revenues for processors, # of jobs supported at processors level, as well as abandoning the kilichi market development work
 - The following challenges were identified moving forward:
 - Low ginger yields in Burkina Faso, which needs to compete on a global ginger commodity market, raises questions whether ginger is a suitable crop.
 - The sourcing of an International clients for hibiscus, as currently no clients for hibiscus is secured.
 - The project's activities until September 2023 only cover 2 agricultural seasons, while the project was initially designed to cover 3 agricultural seasons. This will impact the project's ability to reach its year 3 targets in terms of volume, revenues and employment.
 - Additional technology development is required for ginger cutting.
- **Efficiency**
 - Resources are deployed efficiently. Despite many challenges, such as the project's delayed start, the deteriorating security situation, the COVID-19 pandemic and increased negative effects of climate change, the project managed to achieve most results with 54% of planned budget. The project partners were able to set up office quickly and conclude inception phase on time.
 - BDM successfully applied adaptive management to respond to new situations. For example, it refrained from developing kilichi value chain in the North, moved away from financial product development, added Timini, EZIZAF and Afrique Vert as beneficiaries, included seed development activities with INERA, strengthened the project team, initiated bi-weekly call with project partners and introduced a project planning tool
 - The co-funding from processors prove the success of the leveraged project approach
 - BDM reported timely to EKN on planning, progress, finance and M&E.
 - BDM experienced the following challenges:
 - Challenges with performance of some project staff in Bobo and an inefficient governance structure project office in Bobo
 - Under budgeting of feasibility studies, technology development, project management, travel costs and office running costs
 - Delays with financial audit of year 1 and mid-term evaluation and delivery of equipment
 - Over expenditure in year 2 in comparison to projections.

- **Sustainability**
 - Technical sustainability will be achieved via introduction of newly developed machinery, which is an important achievement of the project
 - Targeting experienced processors, not only mango, increases chances on replication and financial sustainability.
 - Business cases for International buyers, the processors, cooperatives, farmers and emboucheurs are well-documented and a solid base for further financial and social sustainability.
 - Environmental sustainability in place via CSA trainings, although certification component should be prioritized
 - Project is aligned with relevant Government Institutions, but could improve collaboration with Ministry of Agriculture and the Ministry of Industry and SMEs
 - However, a scaling up and phasing out plan is missing
- **Impact**
 - 8 processing companies and 5 cooperatives engaged, and 5 processors started co-investing
 - First exports of 16 tons initiated
 - 1,329 of farmers trained in GAP and CSA, including 389 women and 310 young people
 - Project also needs to benefit from at least 3 seasons to achieve anticipated impact. This is not possible with current end date of 30 September 2023.
 - Security situation and worsening climate change might influence project impact negatively.

The **technical recommendations** are outlined below:

- It is crucial to re-evaluate the technical viability of the ginger value chain development, taking into consideration the significant challenges to improve yields. The project needs to invest in improving yields, if cost-effective, or abandon the ginger value chain.
- Invest more time and budget in identifying international buyers for hibiscus. This includes reaching out to the companies in Burkina Faso already operating in this value chain (e.g. Ranch du Koba), participating in international trade shows (e.g. SIAL and BioFach), and carrying out market research of potential buyers in the West African region.
- Strengthen the collaboration with other entities, including the Ministry of Agriculture, the PAPEA project, the Ministry of Industry and Ministry of Economics, CBI, the GIZ project on fertilizer usage and Dafani.
- Develop a strategy to achieve the employment targets, including assessing how many jobs can be created and improved for each processor.
- The project also needs to investigate possible linkages with technical training institutes to support the processors in identifying and recruiting qualified candidates, particularly for the maintenance of the equipment.
- Prioritise the certification efforts to ensure that the processors are producing high-quality products.

The **project management recommendations** can be summarized in the following way:

- Apply for an extension of the project period by 6 months to allow for a third agricultural season to execute required activities and achieve desired impact. Additional budget will be required to cater for under-budgeted expenditure items and project extension running costs.
- The project should submit a liquidity request in June to avoid liquidity issues at the end of Year 2.
- Finalise the financial report in October 2022 to guarantee that the financial auditing will be finalized by December 2022.
- Prepare a scale-up plan and a phase-out plan.
- Keep updating security protocols.

2 Objectives

The mid-term evaluation of Burkina Dry More aims to assess the progress made towards achieving its planned objectives and provide recommendations for improvements in the project design to successfully conclude the project. The mid-term evaluation provides a detailed analysis of the initial 1.5 years of the project from October 2020 to March 2022, while the recommendations focus on the final 1.5 year of the project from April 2022 until September 2023.

Specifically, the mid-term evaluation's objectives are the following:

- Detail the activities implemented during the period between October 2020 and February 2022, as well as their outcomes.
- Compare the activities and outcomes with the initial objectives of the project, as outlined in its logical framework.
- Analyze the project's performance in accordance with the OECD's Development Assistance Committee (DAC) evaluation framework.
- Provide a set of project management and technical recommendations for improvements.

3 Project introduction

3.1 Background of the project

The agricultural sector is of crucial importance to the society and economy of Burkina Faso. However, there aren't sufficient employment opportunities available in the sector to support its young and growing population. Often the only available employment option is limited to seasonal agriculture, which is rarely sufficient to generate enough income for an entire household all year round. The situation of women and young people is particularly critical, as they suffer from socio-cultural constraints, illiteracy and a lack of access to productive resources such as land, credit and extension services.

The agro-processing in Burkina Faso is severely underdeveloped, as the sector suffers from the absence of finance, inability to operationalize year-round processing, lack of exposure to new technologies and markets, absence of local equipment supplying and maintaining companies, high import duties, lack of infrastructure and inadequate quality management systems. Most processing is small and artisanal, and there are very few modern processing facilities of any kind.

The dried mango sector in Burkina Faso is a remarkable success story within this context. Mango processors in Burkina Faso managed to increase the export of dried organic mangos from 150 tons in 2008 to 3,500 tons in 2019. Inclusiveness is also a strength of the mango sector, and several processing companies are owned by women or young entrepreneurs. An estimated 90% of total employment in processing and export is held by women, and women are reported to be respected and safe in their employment. Nevertheless, the dried mango sector also suffers from the aforementioned challenges in the agro-processing sector. Especially, its inability to operationalize year-round processing hampers further development, as processing plants aren't being used during the mango off-season from August to March.

3.2 BDM Objectives

The goal of Burkina Dry-More is to build a resilient agro-processing sector in Burkina Faso that provides improved revenue and climate resilience to smallholder farmers and sustainable employment to youth and women. The project contributes to two outcomes:

- Outcome 1: A resilient processing sector for 4 new value chains.
- Outcome 2: An inclusive processing sector that supports improved revenue and climate resilience for smallholder farmers and sustainable employment for youth and women in 4 new value chains.

By leveraging the success of the mango processing industry, and introducing 4 new products for processing by mango processors during the mango off-season, an integrated value chain approach is implemented, from smallholder farmers to international buyers. The project aims to address the missing linkages across the value chains, including markets, finance, inputs, cultivation, sourcing and processing, as well as knowledge and management capacity. Burkinabe processors and raw material suppliers are the change agents, while international buyers are the enablers.

Our findings during year 1 lead to changes to the project design, as originally outlined in our project proposal, lead to changes in the project design. These changes were approved by the EKN, including changing the scope and geography of our work with emboucheurs and modification of the access to finance approach.

3.3 Theory of Change

The Theory of Change is based on the belief that stable and growing supply chains can create sustainable economic development and employment. We implement an integrated value chain approach that intervenes from smallholder farmers to international buyers, where we address the missing linkages across the value chains, including production, sourcing, processing, markets, finance and the supporting environment. Our three impact pathways together illustrate how we envision reaching the project's ultimate targets: increased revenue generation for smallholders, processors and aggregators, as well as employment creation for women and youth. The three interrelated impact pathways of BDM are Processing & market support; Smallholder farmer support and Enabling environment support.

The impact pathway Processing & Market Support is at the centre of the intervention logic and focuses on capacity building of processors and aggregators to improve the sourcing, processing and marketing of 4 dried products with high (international) marketing potential. The project is introducing several technological innovations, which create the capacity for quality production of 4 dried products. Processing companies are supported with skills development in terms of sourcing, drying technology and professional business management.

Market support is provided through mobilizing international buyers, who are willing to source one or more of the 4 products from Burkina Faso and through ongoing support with export and shipment trials. Successful exports of high-quality dried goods strengthen company revenues and business cases, breaking open employment opportunities for female and youth workers. For these groups, new jobs are created and temporary/seasonal jobs are expanded into permanent jobs.

The impact pathway Smallholder Farmer Support focuses on continuous guidance and agronomic support to smallholder farmers and *emboucheurs* (cattle fatteners) involved in the production of the raw materials to be sourced by processors and aggregators. The project team carries out variety trials to determine the most suitable varieties (from both agronomic and market perspectives), establishes demo plots and develops training curricula. Specifically for *emboucheurs*, an additional component focused on micro-entrepreneurship business skills is added to the training curriculum.

Through this workstream, smallholder farmers' and *emboucheurs'* capacity is built for improved production volumes and qualities. The project actively aims to link smallholder farmers and *emboucheurs* to the sourcing companies it works with under the impact pathway Processing Sector & Market Support. When smallholder farmers and *emboucheurs* can produce the right qualities and volumes of one or more of the 4 products requested by aggregators and processors, they can materialize improved sales and hence, increased revenue generation.

The impact pathway Enabling Environment Support starts from the premise that flourishing value chains count on high-functioning support from stakeholders not directly engaged in production, processing or marketing themselves. Aggregators and processing companies need access to finance for their growth plans. The program ensures support for companies to adjust their business models and raise financing for investments in the new technologies and working capital, while actively engaging with banks or other investors to broker financing deals. Furthermore, by working together with input suppliers, the project ensures the development of quality input packages that smallholder farmers can apply in the primary production processes.

With a range of crucial public and private stakeholders, the project also works towards the development of a Road Map for further sector growth and development, steering towards embedding and long-term sustainability of our efforts.

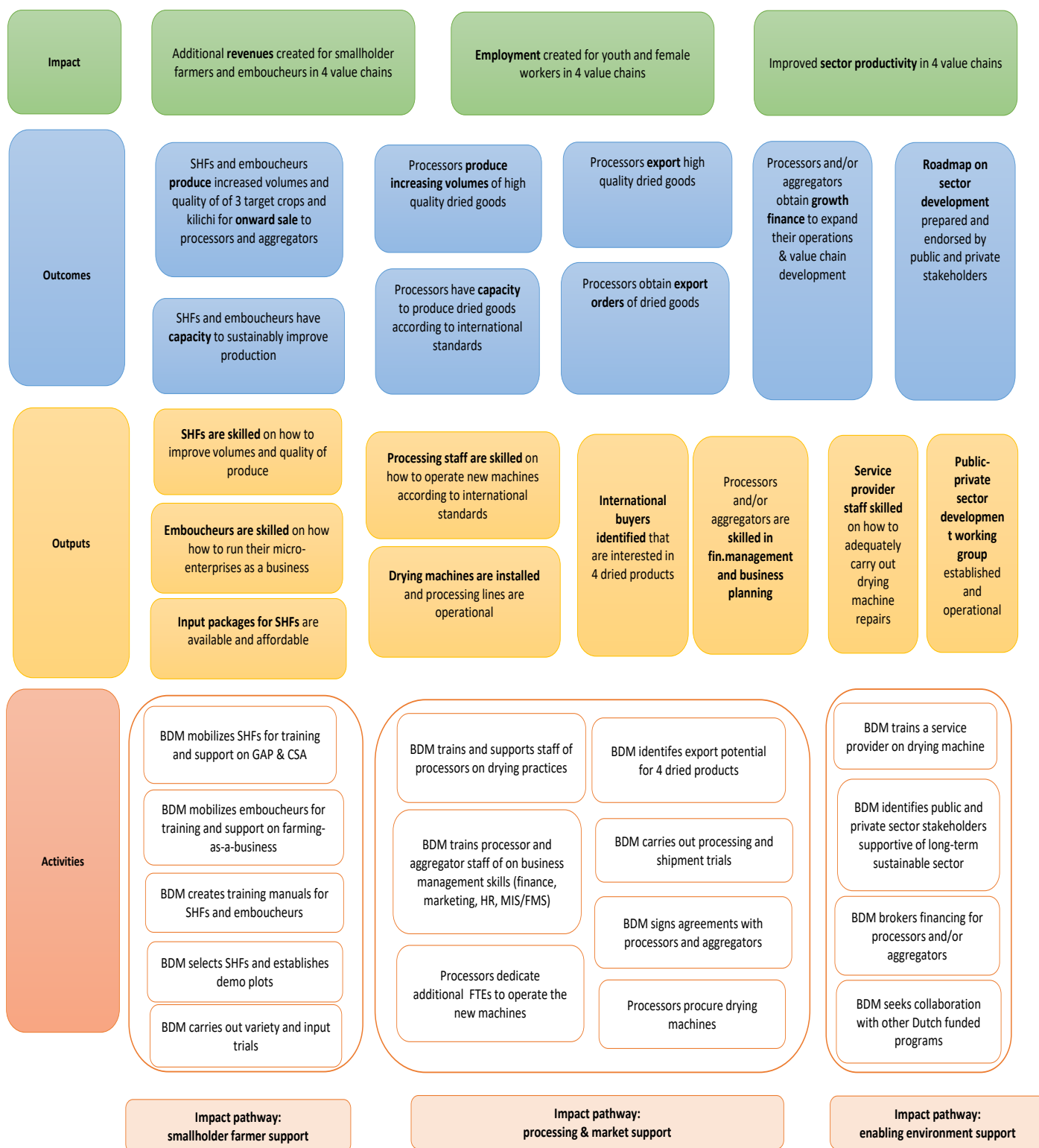


Figure 1 – BDM intervention logic

4 Methodology

4.1 Process

The MTE was carried out by Advance Consulting and AgroDev's teams through a participatory approach. The quantitative and qualitative data were collected through project reports, financial data and key informant interviews (KII). The teams used OECD's DAC framework to evaluate the project and compile underlying report. The process comprised the following phases:

Table 1 – phases

Phase	Activities	People involved
Mission Preparation	<ul style="list-style-type: none"> - Define the MTE approach and methodology - Set up MTE team - Develop evaluation matrix - Prepare data collection tools 	MTE Team
Data collection	<ul style="list-style-type: none"> - Collect project documentation (project proposal, baseline study, first-year report, M&E plan) - Collect financial data - Collect secondary sources - Carry out KII - Site visits to processors 	MTE Team Key informants: EKN, consortium members, processors, project staff, international buyers
Data analysis	<ul style="list-style-type: none"> - Compare results with planned objectives - Establish budget utilization - Analyse data in accordance with the 6 criteria from the OECD DAC framework 	MTE Team
Report drafting	<ul style="list-style-type: none"> - Define project management and technical recommendations - Present MTE results to the Project Steering Committee (PSC) - Integrate recommendations from the PSC 	MTE Team PSC members, including EKN

4.2 OECD DAC framework

The OECD DAC Network on Development Evaluation has defined six evaluation criteria – relevance, coherence, effectiveness, efficiency, impact and sustainability – and two principles for their use. These criteria provide a normative framework used to determine the merit or worth of an intervention (policy, strategy, programme, project or activity). They serve as the basis upon which evaluative judgements are made.

Principle one of the evaluation framework states that the evaluation criteria should be applied thoughtfully to support high quality, useful evaluation. They should be contextualized – understood in the context of the individual evaluation, the intervention being evaluated, and the stakeholders involved. Principle two states that the use of the criteria depends on the purpose of the evaluation. The criteria should not be applied mechanically.



Figure 2 – OECD DAC Framework evaluation criteria

4.3 Key informant interviews

The KII's with the processors actively involved in the project were mainly carried out at their production sites. The interviews with other stakeholders, namely the ones in Ouagadougou or outside Burkina Faso, were carried out through remote calls. A total of 16 organizations were interviewed, including processors, consortium members, EKN and international buyers.

Table 2 – Interviewed stakeholders

Organisation	Interviewee	Location
EKN	Eléonore Belemilga	Ouagadougou
Entreprise Guampri	Christiane Coulibaly	Toussiana
Entreprise Mango So	Alice Riouall	Toussiana
Etablissement Barro Distribution et Frères (EBDF)	Adama Fayama	Banfora
Sanlé Export Séchage	Yaya Kone	Banfora
INERA	Abdala Dao	Frakoba – Bobo Dioulasso
Afrique Verte	Philippe Ki	Ouagadougou
Rose Eclat	Rose Toure	Ouagadougou
AGRODEV	Rachel Dayo	Bobo Dioulasso
Timini	Bebe Eli Kambou	Bobo Dioulasso
SENSE	Michiel Arnoldus	South Africa
Advance Consulting	Sjoerd Herms	The Netherlands
Ranch de Coba	Issiaka Gougoum	Bobo Dioulasso
UPROMABIO	Eugène Milligo	Bobo Dioulasso
BDM	Marie Laure Kabre, Heinz Zemke	Bobo Dioulasso
Symfonio	Solange Domaye	The Netherlands

5 Summary of activities

This section highlights the main activities carried out during the first half of the project.

5.1 Work package 1

The main WP1 activities during the first half of the project focused on crop selection, processing pilots, marketing support and export coaching, and processing technology development.

The crop selection activity had the goal to narrow down the shortlisted crops in the project proposal. The methodology for crop selection was carried out in 4 different steps: quick scan, commercial deep dive, value chain, and the selection and strategy development. The crop selection was based on a quick desk research to explore the pros and cons of the shortlisted value chains, followed by a round of interviews with international buyers about the potential of each crop. The production capacity for each crop in Burkina was also explored. The last steps consisted in performing economic calculations to assess the competitiveness of each crop. The selected crops were hibiscus, fonio and ginger.

The ginger processing pilots were the most challenging and extensive. Critical issues include reducing waste during drying by using a larger, smoother ginger root and how to better control the moisture content of the drying ginger root. Other tests were then later carried out to better understand how ginger dries. For hibiscus, samples were sent to an international buyer for general sanitary and phytosanitary quality testing. In the process, we learnt that we need to establish what variety is grown in Burkina Faso and that earlier harvesting and more controlled washing and drying methods provide a breakthrough in being able to market a relatively new hibiscus product.

The biggest marketing support and export coaching success during the first half of the year was the export of 2 containers of fonio from Afrique Verte and EZISAF to Symfonio, the largest Dutch importer and distributor of authentic African crops. The project also brokered a purchasing order for 7 tons of dried ginger from Kagan Spices, a Dutch spice trader, but the local ginger price was too high. Hibiscus was the most challenging crop to market. The project reached out to several companies, namely Martin Bauer, the largest EU buyer of hibiscus. The project sent some samples to Schütte, another German firm, but the samples were old, which compromised their quality.

After an assessment, it was concluded that key technologies for processing selected crops are not widely available. An equipment manufacturer from South Africa visited Burkina Faso to design and develop new equipment for fonio and ginger (e.g., fonio thresher, ginger washing). A co-financing agreement (50% from EBDF) was signed with the processor EBDF for acquiring the equipment, installing the equipment at their side, performing factory trials, and training other processors. The equipment has arrived in Burkina Faso and the installation and factory trials are ongoing in late May 2022.

5.2 Work package 2

The main WP2 activities during the first half of the project focused on the livestock value chain, and capacity development of processors.

In the project design, we intended to develop the kilichi value chain via capacity building and commercial support to at least one hundred *emboucheurs* in the North, Hauts-Basin and Centre-Ouest regions. During the review of the baseline study in July 2021, it was approved by EKN that the intervention of BDM in the livestock sub-sector will solely focus on improving the capacity of 100 *emboucheurs* and omit the development of the kilichi value chain. The deteriorating security situation

also had an impact on the geographical area of the project. Unfortunately, most of our work in year 1 in the livestock value chain (e.g., feasibility study, processing trial, etc.) was not of much use. Nevertheless, the mapping of the livestock value chain and the development of training materials provided valuable insights into specific issues and opportunities, such as feed and fodder practices. In early 2022, the *emboucheurs* were identified and selected, and training started.

We developed the processing academy to transfer knowledge to the processors, facilitate an exchange of ideas and coordinate activities with the processors. Two sessions were hosted in 2021 and three in 2022, at the premises of a processing company, where we discussed processing technology and the economics of the processing the 3 products. This has allowed us to test assumptions, create buy-in ideas, and facilitate dialogue. The processor academy is now fully live, with sessions being organized monthly.

5.3 Work package 3

The main WP3 activities during the first half of the project focused on the financial landscape study and finance acquisition.

The financial landscape study was carried out and provided a clear understanding of the financial landscape in Burkina Faso, tailored towards the needs and characteristics of the processors and smallholder farmers. It provides the reader with an understanding of the agribusiness sector in the country, an explanation of the different actors within the financial sector and a top-down overview of the financing stream in the BDM framework.

During the inception phase and financial landscape study, we found that it's more effective to fully focus our access-to-finance strategy on individual finance acquisition for processors and aggregators instead of developing a financial product and individual finance acquisition. The profiles, financial standing and investment needs of 8 partner processors and 5 partner aggregators are very diverse and the agriculture banking sector in Burkina Faso is underdeveloped. As partner processors and aggregators have not needed to invest in new infrastructure and sourcing systems until mid-year 2, BDM did not support the organizations with finance acquisition. Nevertheless, the project has recruited a business development officer in Q2 2022 to carry out this work (e.g., developing bankable business plans) after the finalization of the factory trials.

5.4 Work package 4

The main WP4 activities during the first half of the project focused on the farmers' training, seed supply and agricultural trials.

In the first half of BDM, the number of farmers trained in Good Agricultural Practices (GAP) and Climate-Smart Agriculture (CSA) reached 1,329 farmers, including 389 women and 310 young people. The first focus was on training fonio farmers to support the exports of the 2 containers of fonio to the Netherlands. Ginger farmers were trained and provided with extension support in anticipation of the export of the first container to The Netherlands. In addition, 4 demonstration plots were developed to showcase the intercropping of fonio and hibiscus. We relied on existing knowledge around good agricultural practices and climate-smart agriculture for the development of the 13 training curricula for the target crops, including from Afrique Verte and INERA. The project has selected a total of 3,000 producers to be trained.

The limited availability of quality seeds emerged as one of the critical issues that hinder the growth of the hibiscus, fonio and ginger value chains. As such, we signed a partnership agreement with INERA for the multiplication of fonio, provision of trial hibiscus seeds, and provision of knowledge on good agricultural practices for fonio and hibiscus. For ginger, we need to acquire (knowledge on) seeds from a commercial farmer in South Africa, experts from India, and Swiss Development's PAPEA initiative. The ginger experts from India will carry out a field visit in Q2 2022. We initiated agricultural trials at Timini. Two types of high-yielding ginger rhizome were sourced from South Africa, one type of ginger was imported from Ghana, and one ginger variety was sourced from Nigeria. The agricultural trial aims to assess whether these ginger varieties (a) deliver higher yields than the current 6 tons per hectare, (b) have a fat root, and (c) and suitable volatile oil content.

5.5 Work package 5

The main WP4 activities during the first half of the project focused on the selection of processors, the selection of aggregators, establishing partnerships, M&E plan and communication plan.

Processors have been selected based on a public call for proposals using clear selection criteria on company performance and ethics. The selection process was documented in a manual to provide stakeholders with all relevant information about the selection process. During analysis of the 48 long-listed proposals, it became clear many companies had difficulties meeting the minimum criteria, particularly required turnover, number of farmers and number of jobs. In addition, a significant number of processors didn't have at least one tunnel dryer in place and a minimum of three years of experience in mango drying. After due diligence, 5 processors were selected (i.e., Tensya / Guam Pri, Mango-So SARL, Rose Eclat, Etablissement Barro Distribution et Frères, Sanlé Import Export). Consortium partners Timini and Afrique Vert are also perfectly positioned as change agents, given their experience with the selected crops and set-up of their organizations. Afrique Vert will promote fonio and Timini will promote fonio, ginger and hibiscus. EZISAF was also later added, totalling 8 processors selected for the project.

Aggregators have been selected via an internal procedure using selection criteria on company performance, ethics, experience with target crops and supply relationships with selected aggregators. The long list of aggregators comprised 20 cooperatives and 58 *pisteurs*. Eleven aggregators did meet the minimum criteria for organizational capacity and number of smallholder farmers for the target crops ginger, hibiscus and fonio, and we performed due diligence on these pre-selected organizations. The selection committee selected the 5 aggregators.

The limited availability of quality seeds emerged as one of the critical issues that hinder the growth of the hibiscus, fonio and ginger value chains. As such, we signed a partnership agreement with INERA for the multiplication of fonio, provision of trial hibiscus seeds, and provision of knowledge on good agricultural practices for fonio and hibiscus.

In April 2021 we finalized the M&E plan for BDM, which was approved in the same month. The specific purpose of the M&E plan is to explain and summarize the key elements of the M&E system of BDM to our team, consortium and other stakeholders that will be playing a direct or indirect role in M&E.

In June 2021 we finalized the communication strategy for BDM. The primary focus of our communication is to build relationships with the processing companies and importers. A secondary ambition is to create awareness of the project with various stakeholders. To achieve this, we have used one-on-one communication with support from events and social media channels such as Facebook, LinkedIn and WhatsApp. A launch event for the project was also organised, showcasing the strategic intent and the specific activities that would be the focus of the program.

6 Realization vs. targets

At the beginning of the project, the targets were defined for Year 1 and Year 2. No specific targets were defined at the project's mid-term, i.e. after 1.5 years. Therefore, in the tables below, we present the targets for Year 1 and Year 2 as a comparison to the achieved results at mid-term.

6.1 Activities indicators

Table 3 – Activities indicators (Targets Y1 and Y2, Realisation Mid-Term)

LEVEL	BOX FROM INTERVENTION LOGIC	INDICATORS OF CHANGE	TARGET YEAR 1	TARGET YEAR 2	REALIZATION MID-TERM (1.5 YEARS)
Activities	BDM selects SHFs and establishes demo plots	Number of demo plots established	5	15	4
	BDM carries out variety and input trials	Number of variety trials and input package trials carried out	1	2	2
	BDM mobilizes SHFs for training and support on GAP and CSA	Number of SHFs selected for training and support activities on GAP and CSA (M/F/<35)	300 (F: 30% & <35: 40%)	1,700 (F: 30% & <35: 40%)	1,329 (F: 29% & <35: 23%) M >35 736 F >35 283 M <35 204 F <35 106
	BDM mobilizes emboucheurs for training and support on entrepreneurship skills	Number of emboucheurs selected for training and support activities (M/F/<35)	25 (F: 50% & <35: 50%)	75 (F: 50% & <35: 50%)	45 (F: 9%; <35: 18%) M <35 7 F <35 1 M >35 34 F >35 3
	BDM creates training manuals for SHFs and emboucheurs	Number of training curricula and manuals developed	4	0	4
	BDM signs agreements with processors and aggregators	Partnership Agreements in place	10	0	5
	BDM carries out processing and shipment trials	Number of processing and shipment trials carried out	4	4	9
	Processors procure drying machines	Number of processors procuring drying machines	0	2	1
	BDM trains and supports staff of processors on drying practices	Number of processors trained and supported on operating drying machines	0	2	1

LEVEL	BOX FROM INTERVENTION LOGIC	INDICATORS OF CHANGE	TARGET YEAR 1	TARGET YEAR 2	REALIZATION MID-TERM (1.5 YEARS)
	Processors dedicate additional FTEs to operate the new machines	Number of processors that dedicate more FTEs to operating new machines	0	2	0
	BDM identifies export potential for 4 dried products	Number of feasibility studies carried out	1	0	1
	BDM trains processor and aggregator staff on business management skills (finance, marketing, HR, MIS/FMS) and finance acquisition	Number of processors and aggregators whose staff/management received training on finance, marketing, HR and use of MIS/FMS	0	5	0
		Number of processors or aggregators with a functional MIS/FMS in place and operational	0	0	0
		Number of processors or aggregators with improved legal labour contracts and HR manuals	0	1	0
	BDM trains a service provider on drying machines repairs	Number of repair service providers whose staff received training)	0	0	0
	BDM identifies public and private sector stakeholders supportive of long-term sustainable sector development	Number of stakeholder scans carried out	0	1	0
	BDM seeks collaboration with other Dutch funded programs	Number of joint activities with other Dutch funded programs	1	1	1
	BDM brokers financing agreements for processors and/or aggregators	Number of financial landscape analysis performed in which potential financiers are identified	1	0	1
		Number of processors or aggregators supported with finance acquisition	0	2	0
		Number of financiers mobilized and willing to negotiate financing options	0	1	0

6.2 Output indicators

Table 4 – Output indicators (Targets Y1 and Y2, Realisation Mid-Term)

LEVEL	BOX FROM INTERVENTION LOGIC	INDICATORS OF CHANGE	TARGET YEAR 1	TARGET YEAR 2	REALIZATION MID-TERM (1.5 YEARS)
Outputs	SHFs are skilled on how to improve volumes and quality of produce	Number of SHF that received training on GAP and CSA (M/F/<35)	300 (F: 30% & <35: 40%)	1,700 (F: 30% & <35: 40%)	1,329 (F: 29% & <35: 23%) M >35 736 F >35 283 M <35 204 F <35 106
	Emboucheurs are skilled on how to run their micro-enterprises as a business	Number of emboucheurs that received training (M/F/<35)	0	25 (F: 50% & <35: 50%)	45 (F:9%; <35: 18%) M <35 7 F <35 1 M >35 34 F >35 3
	Input packages for SHF are available and affordable	Number of input packages available	0	2	0
	Processing staff are skilled on how to operate new machines according to international standards	Number of processor staff that received training (M/F/<35)	40 (F: 90% & <35: 50%)	230 (F: 90% & <35: 50%)	0
	Drying machines are installed and processing lines are operational	# of innovations taken up by the processing sector	0	2	0
	International buyers identified that are interested in 4 dried products	# of cooperation agreements with international buyers	2	2	2
	Processors and aggregators are skilled in fin. Management and business planning	# of business plans created	0	6	0
	Service provider staff skilled on how to adequately carry out drying machine repairs	Number of repair service providers whose staff received training)	0	0	0
	Public-private sector development working group established and operational	Working group established with key stakeholders willing to jointly develop a sector road map	0	0	0

6.3 Outcome indicators

Table 5 – Outcome indicators (Targets Y1 and Y2, Realisation Mid-Term)

LEVEL	BOX FROM INTERVENTION LOGIC	INDICATORS OF CHANGE	TARGET YEAR 1	TARGET YEAR 2	REALIZATION MID-TERM (1.5 YEARS)
	SHFs and emboucheurs have capacity to sustainably improve production	Number of SHF that received training on GAP and CSA (M/F/<35)	300 (F: 30% & <35: 40%)	1,700 (F: 30% & <35: 40%)	1,329 (F: 29% & <35: 23%) M >35 736 F >35 283 M <35 204 F <35 106
		Number of emboucheurs that received training (M/F/<35)	0	25 (F: 50% & <35: 50%)	45 (F:9%; <35: 18%) M <35 7 F <35 1 M >35 34 F >35 3
	SHFs and emboucheurs produce increased volumes and quality of 3 target crops and livestock for onward sale to processors and aggregators	Additional volumes sourced from SHFs and emboucheurs by processors and aggregators	60 MT	350MT	32 MT
	Processors have capacity to produce quality dried goods according to international standards	Capacity (volumes) that can be produced using new machines	0 MT	320MT	0 MT
		Number of processors that are HACCP, Organic and/or FT certified	0	1	0
	Processors produce increasing volumes of high quality dried goods (=actual volumes)	Additional volumes produced by processors	30 MT	170MT	16 MT
	Processors obtain export orders of dried goods	Number of international buyers for the products	1	1	1
	Processors export high quality dried goods	Additional volume of exports	30 MT	170MT	16 MT
		Additional value of exports	EUR 0.3 MLN	EUR 1.7MLN	Tbd
	Processors and/or aggregators obtain growth finance to expand their	Value of working capital and project finance obtained for processors and/or aggregators	EUR 0 MLN	EUR 0.8MLN	EUR 0 MLN

LEVEL	BOX FROM INTERVENTION LOGIC	INDICATORS OF CHANGE	TARGET YEAR 1	TARGET YEAR 2	REALIZATION MID-TERM (1.5 YEARS)
	operations & value chain development	Value of own contribution assured from processors and/or aggregators	EUR 0 MLN	EUR 0.4MLN	EUR 0.07 MLN
	Road map on sector development prepared and endorsed by public and private stakeholders	Road map prepared and endorsed	0	0	0

6.4 Impact indicators

Table 6 – Impact indicators (Targets Y1 and Y2, Realisation Mid-Term)

LEVEL	BOX FROM INTERVENTION LOGIC	INDICATORS OF CHANGE	TARGET YEAR 1	TARGET YEAR 2	REALIZATION MID-TERM (1.5 YEARS)
	Additional revenues created for smallholder farmers and emboucheurs in 4 value chains	% increase in revenues from sales of 3 target crops and livestock by SHFs and emboucheurs to processors and aggregators	3%	10%	Tbd
	Employment created for youth and female workers in 4 value chains	Total number of existing jobs supported at processors, aggregators, service providers and farms (M/F/<35)	80 (F: 60% & <35: 45%)	260 (F: 60% & <35: 45%)	0
		Net number of new full-time equivalent employees (M/F/<35)	5	17 (F: 50% & <35: 50%)	0
	Improved sector productivity in 4 value chains	% increase in revenues from exports of 3 target crops by processors & aggregators	2%	5%	Tbd

7 Findings

7.1 Relevance

7.1.1 Highlights

The MTE found that the project is highly relevant and its design responds to the needs of the sector, and of the project's beneficiaries, in Burkina Faso. The competitiveness of the dried mango sector is under threat as a result of other upcoming mango producing regions and shorter mango seasons due to climate change. The need for diversification is higher than ever, and the timing and focus of the BDM is therefore pertinent.

As concluded before, there are significant challenges in developing strong value chains for the 3 selected crops. The project's holistic, market-based approach, allows for tackling the different challenges that producers, processors and aggregators face. By selecting front-runner companies, the supported processors are at the right level to receive assistance in diversifying their mango-processing activities. The project has also been able to adapt its selection of processors, not only focusing on mango processors but also on other experienced processors, which could benefit from the project support. The project is working with 8 processors that are at different levels of progress, but all can benefit from BDM's support in technology, capacity building, marketing, and access to finance. The processors are also benefitting from the exchanges with each other, allowing more experienced processors in one value chain to support others that are less advanced.

Technology development is another key aspect of the project's relevance. The processing industry in Burkina Faso for is severely under-developed, and nearly non-existent for the 3 target crops. Even in the West African region, finding the necessary high-quality equipment to process ginger, fonio and hibiscus are challenging. Therefore, the project's support in developing the processing equipment, together with partners in South Africa, is a real added value. The co-financing of 50% by EBDF of the processing equipment proves that processors are committed to the project. It also shows that the project's market-based approach is successful, because it allowed leveraging co-funding from the processors.

The market linkages also remain an important aspect of the project's relevance. Since the industry for ginger, fonio and hibiscus is small in Burkina Faso, processors do not have a customer base of international buyers. The project found international buyers, exporting 16 MT of fonio.

7.1.2 Challenges

The project's relevance is low in the synergies between the work being carried out with the 3 selected crops and the *emboucheurs* work. The selected processors are not involved in the *emboucheurs* value chain. In addition, there are no *emboucheurs* who cultivate any of the 3 target crops, and there are no farmers of the 3 target crops that are involved in cattle fattening.

7.2 Coherence

7.2.1 Highlights

The project's compatibility with other interventions in the country is high. BDM is aligned with the government's policies and development strategies. The Plan National de Développement Economique et Social (PNDES – National Economic and Social Plan) states that strengthening the skills of the private sector, especially for SMEs, is a national priority. The Stratégie de Développement Rural à l'Horizon 2016-2025 (Rural Development Strategy 2016-2025) outlines the importance of developing the agro-

processing sector to increase the revenues of the value chain stakeholders and improve their contribution to the national economy.

The project is also aligned with the Dutch Ministry of Foreign Affairs policy objectives for the Sahel 2019-2022, namely by promoting sustainable inclusive growth and private-sector development, supporting trade and investment in agribusinesses, and creating and improving employment opportunities. Other donor-driven interventions in value chain development and agro-processing, such as PAPEA and CBI, are complementary to BDM and synergies have been found.

The project's participatory approach was a major success factor according to the interviewed stakeholders. The project is linking producers, processors, cooperatives, international buyers, research institutes and EKN. The project's coherence is guaranteed, because it takes into account the different strengths and viewpoints of a wide range of stakeholders.

The internal coherence of the project with the consortium members' other interventions is also high. All consortium members are carrying out similar types of work in other projects or with other clients, which allows them to leverage on this work and improve their contributions to BDM.

7.2.2 Challenges

The project only engaged superficially with the Ministry of Agriculture and the Ministry of Industry and SMEs. The strong market-based approach of the project has not made the coordination with government authorities a priority of its intervention, although it was recognized by the interviewed stakeholders that coordination with the government needs to be strengthened.

The project could not find synergies with other initiatives supported by the EKN. Despite efforts to find areas of collaboration, initiated by EKN by means of engaging a consultant that assessed possible synergies, none were found.

7.3 Effectiveness

7.3.1 Highlights

Despite many challenges, such as the project's delayed start, the deteriorating security situation, the COVID-19 pandemic and increased negative effects of climate change, the project achieved most of its results according to the planning (see Table 3, Table 4, Table 5, Table 6).

The number of selected processors and aggregators exceeded the project's targets. Currently, 8 processors are actively involved in the project, the processors' academy is ongoing. The project contributed to developing new technologies for processing the selected crops by establishing a partnership with a South African manufacturer. One processor co-financed 50% of the value of the equipment installed in its factory, which is considered a great result. More equipment is going to be shipped in June 2022. The factory trials have been organised at one processor's facility, while the other processors will also actively participate. In terms of marketing, the project secured international clients for ginger and fonio. This resulted in its first export of 16 MT of fonio from EZISAF to Symfonio.

Farmers' extension support and training exceeded its targets, with 1,329 farmers trained in GAP and CSA, including 389 women and 310 young people. The targets for Year 2 will be easily achieved. Additionally, the *emboucheurs'* training has also started with 45 individuals, and the targets for Year 2 are also on course. Four demo plots have also been successfully established. The collaboration with INERA for activities around seed development, an important constraint in Burkina Faso, is a major unexpected positive result of the project.

Finally, the project data-driven approach has been successful and crucial for the project's effectiveness. The project accomplished carrying out a series of value chain assessments and a financial landscape study, among others. This allowed the project to tailor its activities to the reality on the ground. For instance, the project changed its approach in the access to finance component from developing a financial product to supporting processors individually to better fit the needs of the beneficiaries.

7.3.2 Challenges

Some results were not achieved. Despite the 32 MT of additional produce sourced by processors and the 16 MT of fonio exported, this result is lower than the target of 60 MT and 30 MT for the first year. The underdevelopment of the value chains at every level, from farmers' productivity to poor technology availability, has hindered the amounts the project can source and export. The processors' capacity is low, which has reduced the number of tasks the processors can carry out on their own. The competition between processors also impacted some coordination work.

Some of the work carried out produced disappointing results. For instance, the variety trials for ginger showed that the variety available in Burkina will not deliver required yields to successfully export. The kilichi value chain development work was abandoned, as market development proved to be a huge time investment and building the technical and financial capacity of *emboucheurs* also proved more challenging than anticipated. The results from the *emboucheurs'* is also disappointing in gender terms, because the project wasn't able to find enough women actively engaged in this activity.

To achieve the project's objectives in the second half of the project, the project will have to solve some important challenges. The ginger productivity in Burkina Faso is low compared to other important markets such as Nigeria and India. As a result, the ginger from Burkina Faso isn't cost competitive on the world market. The project has contracted ginger consultants to assess how to improve this situation, but the viability of exporting ginger from Burkina Faso is not guaranteed. Also for ginger, there is still the need to develop more equipment, i.e. equipment to cut ginger, to improve its processing. Moreover, the project struggled to find international clients for hibiscus.

Finally, the project's activities until September 2023 only cover 2 agricultural seasons, while the project was initially designed to cover 3 agricultural seasons. This will impact the project's ability to reach its year 3 targets in terms of volume, revenues and employment.

7.4 Efficiency

7.4.1 Highlights

BDM's is considered to be efficient, deploying its resources in an economic and timely way. The project managed to finalize its inception period on time, despite some delays at the start. The adaptive and participatory approach has successfully tackled unexpected challenges. Abandoning the *emboucheurs* value chain work in the North of the country allows the project to continue its *emboucheurs* activities without compromising on safety. Access to finance evolved from a generalised approach to a tailor-made one to respond to the needs of processors. Additional beneficiaries such as Timini, Afrique Verte and EZISAF were added to the project to leverage their experience and increase BDM's impact. New activities were also developed, such as the seed development activities with INERA, to ensure that the project achieves its intended results.

The project reported timely to EKN on planning, progress, finance and M&E, and the project partners were able to set up office quickly and conclude inception phase on time. BDM also strengthened its project management capabilities to ensure that the project is efficiently run. A project planning tool, as

well as regular consortium members' meetings, were launched to ensure smooth coordination between the project partners and different work packages.

The project also achieved most of its results at mid-term via utilization of 54% of the allocated budget. The project managed to leverage co-funding from a processor, showing the project's approach success in terms of efficiency.

Table 7 – Budget Expenditures vs. Allocation (on 31/03/2022)

	Budget Oct 20 - Sep 23	Expenditure Oct 20 - Mar 22	Variance	Utilization
Work package 1: Market and technological support				
Technical and economic feasibility study 5 shortlisted crops and kilichi	€ 71,398	€ 95,646		134%
Processing pilots	€ 39,648	€ 34,537		87%
Processing technology improvements	€ 178,947	€ 129,964		73%
Marketing support & export coaching	€ 115,895	€ 15,772		14%
<i>Sub-total</i>	€ 405,888	€ 275,920	€ 129,968	68%
Work package 2: Supply chain support				
Training of processors on processing of new crops	€ 53,119	€ 12,920		24%
Certification of processors	€ 37,847			0%
Capacity building of raw material suppliers	€ 45,674	€ 7,728		17%
Capacity building of emboucheurs	€ 90,834	€ 6,346		7%
Operationalizing farmer management information systems	€ 60,150	€ 37,782		63%
Advocacy on improving trade policy framework for agro-processing sector	€ 40,943	€ 3,250		8%
Improvement of working environment	€ 35,511			0%
<i>Sub-total</i>	€ 364,077	€ 68,026	€ 296,051	19%
Work package 3: Access to finance support				
Financial landscape study	€ 22,575	€ 21,960		97%
Finance acquisition for companies	€ 68,705	€ 23,889		35%
Business plan development and financial coaching of companies	€ 134,352	€ 14,782		11%
Financial product development and roll-out	€ 53,559	€ 27,244		51%
<i>Sub-total</i>	€ 279,191	€ 87,874	€ 191,317	31%
Work package 4: Agronomy support				
Selection of smallholder farmers	€ 15,082	€ 14,039		93%
Developing training material	€ 36,215	€ 23,144		64%
Training and extension support to smallholder farmers	€ 162,791	€ 102,086		63%
<i>Sub-total</i>	€ 214,088	€ 139,270	€ 74,819	65%
Work package 5: Project management, outreach and learning				
Project management	€ 304,490	€ 225,588		74%
M&E and communication	€ 167,217	€ 89,149		53%
Office running and equipment	€ 153,750	€ 139,406		91%
<i>Sub-total</i>	€ 625,456	€ 454,143	€ 171,313	73%
Grand-total	€ 1,888,700	€ 1,025,233	€ 863,468	54%

7.4.2 Challenges

A major challenges related to the project's efficiency are unexpected expenditures. For instance, the initial project budget did not take into account the need for yearly audits or a mid-term evaluation. Some budgetary lines were also underestimated in terms of the amount of work that need to be carried out, and the project overspent on feasibility studies, technology development and project management.

The current global supply chain constraints also lead to delays, specifically with delivering the newly developed machinery. BDM also experienced challenges with performance of some project staff in Bobo and an inefficient governance structure of the project office in Bobo during the initial year of the

project. Although these problems were solved, it increased the need for consortium members to closely coordinate the project in the field, which resulted in higher office running costs and travel expenses.

BDM also experienced a delay with with the financial audit of year 1 and the mid-term evaluation. After consultation with EKN, it is expected that these deliverables will be provided within the timelines.

In the second half of the project, the project will face some liquidity issues at the end of Year 2 because the expenses will be higher than anticipated.

7.5 Sustainability

7.5.1 Highlights

The project intervention will be sustainable in the medium term, because of its market-based approach and reliance on SMEs as changemakers, as well as its alignment with government and donor priorities.

The project is targeting experienced processors already exporting to international markets, which are financially sustainable. Their desire to diversify their processing, as well as their skills and experience, are added values to the project's sustainability. The project's targeting of experienced processors also increases the likelihood of replication, and again reinforcing the financial viability.

The support provided to processors in terms of the development and introduction of high-quality equipment is an important component, because it ensures technical sustainability. Additionally, the in-depth business cases done for the international buyers, processors, cooperatives, farmers and *emboucheurs* show that the project has high financial and social impact potential. Environmental sustainability is also assured by the training of farmers in CSA, as well as the work to be carried out in the certification of processors.

7.5.2 Challenges

The value chains for three selected crops are underdeveloped in Burkina Faso. Value chain development is challenging, and the project is working on solving the major bottlenecks. However, this process takes time and unexpected difficulties imply that the project might struggle to create a strong ecosystem that will be able to sustain itself. The project has not developed a scale-up plan or a phase-out plan, which could help in building a sustainable ecosystem.

7.6 Impact

7.6.1 Highlights

It is still early to assess the project's impact since most of the activities are still ongoing. Only closer to the project's end, or after the project, it will be possible to truly assess the project's impact. Nevertheless, the project has achieved most of its objectives in the first 1.5 year, as shown in section 7.3, including:

- 8 processors and 5 cooperatives are engaged
- Export of 16 MT of fonio
- 1,329 producers trained in GAP and CSA, including 389 women and 310 youths.
- 4 demo plots established

7.6.2 Challenges

Nevertheless, the project has underachieved in the amount of volume sourced and exported, which has led to lower increases in revenues for processors. The number of jobs that are created or improved by this project has also been lower than expected during its first half.

The main challenge to increasing the project's impact is to continue its activities for at least 2 more agricultural seasons. Currently, the project will only be able to support the processors for 1 season at the end of 2022 and beginning of 2023.

There are also considerable risks that are outside the project's control, such as increased costs of fertilizers and energy and supply chain disruptions, a further deteriorating security situation and additional negative impact from climate change that could hinder BDM's impact.

8 Recommendations

8.1 Technical recommendations

The technical recommendations are outlined below:

- It is crucial to re-evaluate the technical viability of the ginger value chain development, taking into consideration the significant challenges to improve yields. BDM should engage International ginger experts to assess the situation, including seed development. Based on their recommendations and challenges identified, the project needs to invest in improving yields if cost-effective or abandon the ginger value chain.
- Invest more time and budget in identifying international buyers for hibiscus. This includes reaching out to the companies in Burkina Faso already operating in this value chain (e.g. Ranch du Koba), participating in international trade shows (e.g. SIAL and BioFach), and carrying out market research of potential buyers in the West African region.
- Strengthen the collaboration with other entities, including key government ministries, and other projects and companies. For instance:
 - Key actions identified as a potential source of collaboration with the Ministry of Agriculture are to develop technical guides for farmers on the selected crops and training of Government extensionists on the selected crops. For ginger this needs to be closely coordinated with the PAPEA project, which is also targeting ginger.
 - The project also needs to engage and advocate with the Ministry of Industry and Ministry of Economics to improve the enabling environment. The project will approach these actors to organize meetings with them, as well as to invite them to relevant events organized by BDM. For instance, removing import duties for machinery or facilitating companies to assess investment support for financing the investments in new machinery. EKN expressed its willingness to support these activities.
 - Upscale synergies with CBI on composting, or the GIZ project on fertilizer usage, to support the work on improving yields.
 - Research collaboration with Dafani, as the company is entering in the ginger value chain.
- Develop a strategy to achieve the employment targets, including assessing how many jobs can be created and improved for each processor.
- The project also needs to investigate possible linkages with technical training institutes to support the processors in identifying and recruiting qualified candidates, particularly for the maintenance of the equipment.
- Prioritise the certification efforts to ensure that the processors are providing high-quality products to the markets. However, first, the project needs to assess the market requirements and demanded certifications. For instance, a potential buyer might be interested in candy ginger, so the project needs to understand the requirements for such a product.

8.2 Project management recommendations

The project management recommendations can be summarized in the following way:

- Apply for an extension of the project period by 6 months to allow for a third agricultural season to execute required activities and achieve desired impact. Additional budget will be required to cater for under-budgeted expenditure items and project extension running costs. Under-budgeted expenditures should include financial audit, mid-term review, additional equipment development

costs, travels costs and office running costs, but not include underestimated time commitments for project management and feasibility studies.

- The project should submit a liquidity request in June to avoid any liquidity issues at the end of Year 2.
- Finalise the financial report in October 2022 to guarantee that the financial auditing will be finalized by December 2022.
- Prepare a scale-up plan.
- Prepare a phase-out plan.
- Keep updating security protocols.