

IMPLEMENTATION PHASE 2 REPORT
YEAR 5 AND 6: MARCH 2018 – FEBRUARY 2020

DFID Market Development (MADE) for Northern Ghana Programme

NATHAN



SUBMITTED TO

Department for International Development, Ghana

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(Under DAI Wealth Creation Framework)

SUBMITTED: MARCH 2020

REVISED: APRIL 2020

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LIST OF ACRONYMS

ABC	Assessment and Business Case
BDA	Business Development Advisors
BDS	Business Development Service
CF	Conservation Farming
CSA	Climate-smart Agriculture
FEA	Farm Enterprise Advisor
GAP	Good Agricultural Practice
GCX	Ghana Commodity Exchange
GSA	Ghana Standards Authority
IFPRI	International Food Policy Research Institute
IITA	International Institute of Tropical Agriculture
MLS	Monitoring and Learning Specialist
MoFA	Ministry of Food and Agriculture
NSEZ	Northern Savannah Ecological Zone
SHF	Smallholder Farmer
TEDMAG	Technical Education Development for Modernising Agriculture in Ghana
ToT	Training of Trainers
VfM	Value for Money

SECTION 1. EXECUTIVE SUMMARY

The Market Development Programme for Northern Ghana (MADE) is a market systems development programme funded by the UK Government's Department for International Development (DFID) that has worked to catalyse changes in the agriculture sector in the Northern Savannah Ecological Zone (NSEZ). MADE has acted as a "market facilitator" to support and incentivise private sector actors to improve the functioning of markets for the benefit of smallholder farmers (SHFs). During the first four years of the programme, MADE increased incomes and yields of poor farmers and small rural enterprises effectively – far exceeding its targets.

In December 2017, MADE was granted a two-year, no-cost extension to deepen and widen the impacts of its market facilitation activities and to mainstream those impacts. One of the primary focus areas of the extension was the delivery of integrated packages or bundles of affordable inputs and services to smallholder farmers, which included certified seeds, fertilisers, and mechanisation and advisory services. The bundles were designated the "advanced model", and were built around a "set of rights" for smallholder farmers engaged in outreach schemes. Agribusinesses were tasked with supplying the right quality of inputs and services, in the right quantity, at the right price, in the right form, at the right time and in the right place. Central to all of the "advanced model" bundles was the deployment of farm enterprise advisors (FEAs) to ensure services and inputs provided were used in the right way. To build the necessary capacity to deliver against these requirements and to widen and deepen the impact of the programme, during Phase 2 MADE has:

- supported a broader range of partner businesses, including support enterprises, to share responsibilities and risks associated with the broader service delivery requirements;
- delivered strategic and targeted support to partner firms to ensure longer-term organic growth;
- worked to establish a functional network of farm enterprise advisors;
- engaged with partner firms to establish robust business workplans and strategies;
- promoted the use of innovative tools to improve the collection and use of information;
- encouraged firms to increase capital investment and expand into new markets; and
- promoted the building of model farms and demonstration plots to showcase the advantages of new irrigation and climate-smart technologies.

In addition, during phase 2 MADE has focused its efforts on mainstreaming the programme by:

- promoting improved stakeholder engagement;
- conducting independent assessments to see how partner firms were adopting and adapting key advanced model components, in order to reaffirm the business case for these interventions and highlight the capacity of market forces to drive sustainable development; and
- raising visibility by revamping the programme website, creating a social media presence, producing communications products such as success stories and snapshots, and disseminating programme results and learning through agribusiness fairs, fora and other events.

RESULTS ACHIEVED

Results of the programme as at the end of Y6 are encouraging. They not only indicate continued increases in yield and incomes for SHFs, but corresponding increases in turnover, revenue and overall growth for agribusinesses. There are also early indications of the effectiveness and sustainability of these approaches, including the establishment of commercial partnerships that have been initiated by agribusiness without support or facilitation from MADE. The growing uptake and interest in irrigation and climate-smart technologies, and the increased investments agribusinesses are making to expand into new markets and scale up their businesses also demonstrate their confidence in applying the advanced model.

Overall, land size under cultivation has more than doubled, yields have significantly increased, and businesses have increased their investments and have become more competitive.

The key achievements of the programme, as detailed in Sections 2 to 5, can be summarised as follows:

Agribusinesses extended their outreach to deliver to a wider SHF base: On a year-to-year basis, MADE has witnessed outreach growth in all of its partner firms. In Y6, MADE's 31 lead partner firms reached 85,939 SHFs, up 30% on the 65,868 SHFs from 32 partner firms achieved in Year 5. Much of this increase can be attributed to the partnerships with support enterprises, which in most cases contribute clients as well as additional services. Of the Y6 outreach, 41,559 SHFs were newly registered – a 30% increase from Y5. Not only did MADE's partners reach a greater number of farmers, they also registered more female farmers – with the level reaching 46% (up from 41% in Y5). In certain regions, the number of newly registered female farmers even surpassed that of male farmers (21,398 compared to 20,161). This is the first time that the programme has exceeded 50% participation of female farmers (see logframe Outcome Indicator 1a).

Agribusinesses applying the MADE model have reached many more SHFs than reported: The annualised figures reflect target outreach numbers agreed at the beginning of each year and verified as part of the milestone assessment exercise. The actual number of direct beneficiaries is thought to be much higher, since partner firms and support enterprises often exceed the outreach targets set at the beginning of each season as part of the work-planning exercise. The figures also fail to capture the SHFs reached by former MADE partner firms that have dropped out of the programme but are continuing to adopt key features of the "advance model". During Phase 3 a study of all firms that have received support from MADE over the life of the programme will be undertaken to capture the full extent of the direct beneficiary numbers.

Agribusinesses have made significant investments in the MADE model: To ensure the sustainability of the advanced model, MADE has continued to advocate for greater investments to be made by its partner firms to expand the inputs and services they are able to provide to SHFs. The amount of additional private sector investment leveraged from MADE's partner firms during phase 2 was £██████, surpassing their projected investments in years 5&6 by more than £██████ (see Output Indicator 4.3). Over the life of the programme, MADE partners have invested a total of £██████ in the delivery of improved inputs and services and in the expansion of their businesses

SHFs have experienced improved incomes: From a baseline of £████ per annum in year 3 when this indicator was introduced, SHFs have seen incomes rise by over 850% to £████ per annum by the end of Y6 (see Outcome Indicator 2). The rise in income increases was particularly high in Y5 following a good harvest. 66,830 SHFs have seen their incomes rise by more than £████ per annum during the life of the programme, of whom 35,769 were during phase 2 (see Outcome Indicator 1b). 26,506 of the 66,830 are women (40%).

SHFs experienced increased crop yields: Smallholder farmers have experienced year on year increases in yield as a result of the advanced model. Over the two years of the extension, SHFs have seen the greatest yield increases in maize (29.4%), followed by groundnut (19.7%) and soybean (15.1%) (see Figure 3). Female SHFs have had higher yield increases than their male counterparts – in particular for groundnuts and soybeans – and this has been achieved on significantly smaller plot sizes. 83% of MADE's female beneficiary farmers worked plots of less than 2.5 acres in Y6, compared to only 47% of male farmers (see Table 21). The total area under cultivation by MADE partner firm SHFs in Y6 was 165,970 acres (see Table 20).

Male SHFs showed greater average income increases, nearly double that of female SHFs. In spite of the fact that female SHFs overall secured higher yields than their male counterparts, in Y6 male farmers experienced greater income increases (£████ compared with £████, respectively). This can be

attributed to the types of crops cultivated and the fact that female farmers are normally limited to working on smaller plots of land, as compared with men (see Table 23).

Crop differences between female and male SHFs: Y6 results indicate that crops such as rice (66%) and maize (58%) are predominantly farmed by men. This also correlates to larger plot sizes, as both of these crops tend to be commercially farmed. In comparison, groundnuts are farmed predominantly by women (66%) – (see Figure 2). Sorghum and soybean are farmed by both sexes equally.

Companies have hired additional staff to meet increasing demand: In addition to the 160 new FEA posts that were filled during the Y6 pre-season period, a total of 1,455 jobs have been created as a result of the growth of partner businesses during the Phase 2 extension period. 56 of the lead firms and 15 support enterprises reported hiring more staff (including FEAs, BDAs and sales staff) to more effectively meet demands (see Table 24).

LESSONS LEARNED

Beyond the key findings and lessons learned through MADE's monitoring of its partner firms (milestone reports) and through mid-and end-season surveys, MADE also conducted a series of assessment and business case (ABC) studies during Y6 to document the impact of MADE's interventions and the sustainability of the market systems approach, backed by independent data and evidence. Through these business case studies, MADE aimed to make the case for adoption of key programme elements that would enable agricultural intensification in northern Ghana and demonstrate the capacity of the private sector to lead these efforts. Once completed, the programme also engaged in robust efforts to disseminate the findings of these studies to obtain greater buy-in and to influence policy makers.

The results from these verification reports, surveys and ABCs have highlighted a number of lessons that should serve to inform future programmes that adopt a market systems approach:

The advanced model offers a win-win for lead firms and their affiliated SHFs: SHFs have increasingly taken advantage of the integrated bundles of inputs and services offered through MADE's partner firms, as this has enabled them to secure higher yields and ultimately increase their income. These improvements in productivity have enabled an expansion in plot size, and with the extra revenue has encouraged SHFs to begin accessing expanded services such as mechanisation and climate-smart agricultural (CSA) practices offered through the larger bundles. This is evidenced by the increase in SHFs accessing medium bundles in Y6 compared to Y5, as well as the corresponding increase in yield for those SHFs who moved from basic to medium bundles.

Model farms and demonstration plots speed up technology transfer: During the final quarter of Y6, MADE piloted these innovative products and services on a number of model farms, with the aim of promoting the environmental and financial benefits. These demonstration plots have proved to be successful in providing partner firms and their affiliated SHFs with an opportunity to witness the benefits of these techniques. As a result, seven firms are now offering advisory services on conservation farming techniques such as minimum or zero tillage; five firms are providing drought resistant seed varieties; and five firms are offering mechanisation services such as planters, rippers etc. to their SHFs.

Lead firms are adapting the MADE model in various ways: The success of the advanced model is not only demonstrated by the extent to which MADE's partner firms have adopted it, but also through the myriad ways in which they have adapted the model to better suit their business needs. For example, engaging lead farmers to mobilise SHFs at key times, so that BDAs/FEAs can improve service delivery by increasing contact time and delivering inputs, services and technical guidance to multiple SHFs at once. This has led to improved relationships and recovery rates, and lower transaction costs. Other firms have changed their BDA/FEA remuneration structure to commission rather than fee-based, while others have expanded their aggregation services and have begun mandatory weighing when purchasing crops and establishing community aggregation centres run by lead farmers.

FEAs are the main agents of change, and drive growth: Some agribusinesses have estimated that between 25% -75% of their growth can be attributed to the introduction of FEA advisory services. FEAs have enabled agribusinesses to more effectively deliver integrated packages of inputs and services to their affiliated SHFs, to provide guidance on the proper utilisation of those bundles and identify and to address issues as they arise. FEAs have served as the 'face' of the agribusiness and have enabled greater trust between the parties. This has resulted in greater levels of recovery, higher quality produce, and increased yields, which in turn has led to increased profits for farmers and increased revenues for agribusinesses.

Commercial (B2B) partnerships offer scope for expanding services and for sharing risk: Although MADE has promoted the development of stronger B2B links across the value chain, it has been the agribusinesses themselves that have recognised the advantages of working in partnership. The decision to work with support enterprises to secure selection for MADE in Y5 has led to a dramatic increase in B2B linkages on both a formal and informal basis in Y6. The commercial partnerships assessment and business case reported 129 instances of associations that are aimed at building capacity and expanding business opportunities.

Women represent a good investment opportunity as both valuable employees and clients for agribusinesses: The business case for additional gender mainstreaming and inclusivity has been successfully demonstrated through the gender assessment and business case conducted in Y6. It showed that the engagement of females in the agricultural sector – whether as farmers or FEAs – is economically beneficial to all parties. Repayment rates for female SHFs is between 95-99%, compared with 80-89% for male SHFs. Women they have consistently embraced good agricultural practices (GAPs), which has resulted in higher quality produce and higher yields. Farmers currently working with female FEAs have indicated that women FEAs have a stronger understanding of GAPs, are able to communicate more effectively and are more relatable than their male FEA counterparts. Female FEAs have also begun to challenge long-standing stereotypes and perceptions about the role and capabilities of women as farmers and as household earners.

MOVING FORWARD

During the two-year, no-cost extension period, MADE succeeded in deepening and widening the impacts of the programme through promotion of the advanced model and by raising the productivity, profitability and competitiveness of its partner agribusinesses. It also succeeded in mainstreaming those impacts through a more effective and targeted communication and influencing campaign. The quickened pace of uptake of the new business models, captured in the series of assessment and business case studies undertaken in year 6, clearly showed evidence of growing transformational impact but also highlighted that the sustainability of the initiatives was tentative and potentially at risk.

In February 2020, MADE was awarded a final no-cost extension until the end of November 2020, designed to authenticate the success of the programme and to ensure the sustainability of these innovative approaches beyond the life of the programme. This third and final phase will provide MADE with the opportunity to continue working in a limited way, and for a limited period of time, to address some outstanding gaps in capacity and understanding that still remain.

During Phase 3, MADE will:

- provide technical guidance to its partners on their Y7 business plans, to ensure that these are designed in a way that enables continuation of key elements of the advanced model;
- provide discrete support for the development and delivery of customised regional FEA training courses, using a refined course curriculum built around the experiences in Y6;
- build the capacity of selected partners to follow higher growth paths through the development of customised road maps which will serve as action plans to address deficiencies identified during the benchmarking exercise;

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- work with Image-AD to commercialise the data management platform M-Access, by supporting the launch of the application and continuing to monitor its use and application; and
- conduct a pilot study to assess the opportunities for realising a value-premium price for aflatoxin treated groundnuts and products.

Lastly, and as the programme shifts into its final phase of implementation, it will seek to capture and disseminate additional learning by assessing the extent and nature of the adoption and adaptation of the advanced model by all of the partner firms that MADE has worked with over the life of the programme. This assessment of approximately 120 agribusinesses will seek to identify which aspects of the model have worked, which aspects have not worked, and why these aspects have either been applied or abandoned. It will also consider the growth trajectories of these businesses and enable a more robust understanding of the operational characteristics, strategic positioning and conditions that promote the successful growth of businesses.

MADE will also seek to promote the adoption of the market systems approach among a broader array of actors, by organising a high-level forum for government stakeholders, development actors and public and private sector partners. The event will showcase the successes of the MADE programme in catalysing market changes in northern Ghana – as demonstrated primarily through the advanced model. The forum will be structured around key aspects of the model – such as commercial partnerships, conservation farming, gender inclusivity and FEA advisory services – and will highlight findings that were captured through the ABC studies conducted in Phase 2.

SECTION 2. THE PURPOSE OF A SECOND PHASE

The Market Development for Northern Ghana (MADE) programme, funded by the UK Government's Department for International Development (DFID), was launched to strengthen market systems and private sector capacities in order to stimulate positive, pro-poor transformations in the challenging agricultural sector of northern Ghana.

PHASE 1 BACKGROUND

During the early years of implementation, the programme focused on identifying small-scale enterprises operating in the key first and last mile space, and supporting them to adopt innovative business models to help strengthen their capacities to deliver a range of essential inputs and services to smallholder farmers (SHFs). The critical lessons learned during this initial phase helped inform efforts to extend the reach of these small-scale enterprises, to satisfy the needs of a larger number of SHFs across a wider geography. This was achieved by a year-on-year partner selection process that favoured small-scale enterprises with ambition to grow their microbusinesses and achieve scale. SHFs benefited by seeing their incomes rise, as more land was brought into production and yields improved.

DECISION TO EXTEND TO PHASE 2

Despite meeting, and in some cases exceeding, the targets set out in the business case and recording “excellent value for money” by delivering results well within budget, constraints to growth and the continuing thinness of the market in northern Ghana raised questions over the sustainability of the programme's market systems approach. In the lead-up to the extension, programme managers acknowledged that high-performing adopters of new business models remained only a small proportion of the market actors operating in northern Ghana. Few rural enterprises had the desire to ‘go-it-alone’ and those that had the ambition often lacked management skills and had limited access to working capital and investment finance. Extending the programme into a second phase would allow MADE to expand the number and types of partners it supports; focus on the delivery of much-needed strategic support to enhance the uptake of technical innovations and improved agricultural practices; and ensure more sustainable, long-term benefits to farmers and agribusinesses.

The decision was therefore made to extend the MADE programme from March 2018 to February 2020, with success to be measured against the aims defined for Phase 2: **deepening and widening impacts** – encouraging agribusiness partners to adopt the programme's advanced business model; and **mainstreaming impacts** – securing support for the market changes facilitated by MADE, through strategic communication campaigns targeting the private and public sectors and development partners. The impacts of MADE during this two-year second extension would be judged against a revised set of key logframe outcome and output indicators.

A brief overview of the main activities for Phase 2, designed to achieve these impacts, is as follows:

KEY ACTIVITIES FOR PHASE 2

Supporting a broader range of partner firms

For Phase 2, MADE planned to widen its partner selection process to accept bids from business syndicates comprising lead and support enterprises working together under formalised or informal agreements. By sharing responsibilities and risks, these syndicates would be able to widen and extend their business reach, offer smallholder farmers a more inclusive range of services and input supplies, and enable farming communities to shift from subsistence to semi-commercial levels of production.

Delivering strategic, tailored support to partner firms

In an effort to support long-term organic growth, MADE planned to support partner firms to be more strategic in their thinking, improve their performance and raise their competitiveness. Planned activities

would include offering partners the opportunity to share experiences at networking events and participate in a benchmarking exercise to compare operational performance and identify shortfalls and constraints. Businesses would also be provided with diagnostic reports covering key performance elements and offered support to develop plans to generate future growth and investment.

Establishing a network of farm enterprise advisors

MADE realised that as agribusinesses extended their reach, more individualised support for farmers was needed, to help them improve their farming practices and secure optimal results from the advanced bundles of inputs and services being provided.

To manage the ever-growing number of SHFs and ensure the supply of the right quality of inputs and services, in the right quantity, at the right price, in the right form, at the right time, in the right place and applied in the right way (referred to as the 'seven SHF rights'), agribusinesses needed to have agents in the field to offer advice and look after the interests of the company. The emergence of the farm enterprise advisory service as a key element of the "advanced model" became critical in helping companies select the best farmers and monitor their performance to predict production yields and help satisfy buyer demands. Finding people with the right skillset to perform that function has proved difficult for many agribusinesses. In Phase 2 MADE planned to deliver a series of intensive training courses for farm enterprise advisors (FEAs), focusing on farm business management, good agricultural practice, social inclusion and environmental protection. FEAs would also be well placed to help agribusinesses.

Establishing model farms and demonstration plots

To support the role of FEAs and to catalyse the introduction of new irrigation and climate-smart technologies, a number of model farms and demonstration plots were planned in selected locations across the northern region, to highlight best practices and encourage closer cooperation between equipment manufacturers and the wider farming community. This was aimed at achieving even higher yield gains and improved productivity, which the programme needs in order to advance its business model and to progress some of the larger agribusinesses towards "all-year-round" agriculture.

Promoting stakeholder engagement

MADE recognised the need to broaden the programme's engagement with key stakeholder groups, and in particular, to improve how it identifies, documents and shares lessons learned so that it can better inform and influence the perceptions of policy makers. MADE also realised that development partners needed to be better informed about the programme. So rather than simply communicate its achievements, the focus for Phase 2 would be to highlight successful activities and share lessons learned, to obtain better buy-in from government, development partners and other stakeholders.

Another aspect of this work for Phase 2 was to align farm advisory services and public extension services more closely by working with the Ministry of Food and Agriculture's extension directorate to develop a revised curriculum focused more on industry needs. Finally, MADE decided that the programme should invite development partners and key government representatives to quarterly 'pause and reflect' meetings, to improve awareness of MADE achievements and allow for face-to-face communication, in order to build consensus around future directions.

Establishing robust business strategies and better workplans

A series of internal assessments from Phase 1, covering team performance and operational procedures, revealed the need for more robust and timely work plans. Businesses and most farmers tend to grow a range of commodities to suit market needs on a shifting basis over time. In Phase 2, MADE aimed to shift agribusiness workplans away from alignment around specific commodities and market value chains to a more business-led approach. In another move the programme also decided to initiate partner selections in advance of the new season, to help define the scope of work earlier and also to avoid planning activities encroaching into the planting season.

Using better tools to improve technical management

MADE also recognised the need to strengthen its own internal technical and operational management in Phase 2, through the introduction of new tools and processes – a response to previous inconsistencies in submitting reports and managing the implementation of activities. The new tools and practices selected included: i) collaborative annual planning workshops; ii) activity-based planning; iii) clearer responsibility designation; iii) calendars for reporting DFID deliverables; and iv) quarterly ‘pause and reflect’ workshops. Each tool and service would be implemented with a process for feedback, so that the management team would be able to discuss their effectiveness and monitor team performance regularly.

Realigning the MADE team structure

Additional efforts to strengthen the programme’s technical management in Phase 2 also included a realignment of team structure and head office support. A decision was made to move away from commodity specialism towards a more discipline-focused structure, allowing the Tamale-based team to absorb cross-cutting activities such as gender and monitoring into its market development responsibilities. The programme would also appoint a dedicated operations manager to take the role of deputy team leader, and would strengthen its HQ support through the appointment of both dedicated technical specialists, to take forward digitisation and benchmarking initiatives, and a learning and information team, to handle the mainstreaming and improved visibility component.

Improving reporting against key indicators

The programme identified the need to be able to better understand economic benefits, and in significantly more depth, beyond a simple sales/turnover calculation; for example, by determining the average income increase per smallholder farmer; and the number of smallholder farmers who see income increases above £█. The programme aimed to improve reporting in Phase 2 to better capture quantitative and qualitative details by introducing a number of new logframe outcome and output indicators. To ensure that the cost-effectiveness of the programme would be more clearly tracked, it was decided that additional Value for Money indicators would be used in evaluation reports, including management costs per facilitation, facilitation costs per beneficiary, and the amount of private sector investment leveraged.

Reaffirming the business case

To help substantiate the value of the market systems approach and the capacity of the private sector to lead agricultural development in northern Ghana, the programme identified the need to undertake a series of independent assessments and business case studies (ABCs) in Phase 2, focusing on key advanced model elements. These studies would look at the extent of adoption and the wider roll-out potential of the components and would promote the case for private sector-led development of agriculture in the region.

SECTION 3. PROGRESS TOWARDS DEEPENING AND WIDENING

During the no-cost extension phase, MADE has worked to deepen and widen impacts by supporting its agribusiness partners to effectively adopt and deliver on an advanced business model. This model was informed by robust design and testing during the first four years of the programme and includes integrated packages (bundles) of inputs and services for smallholder farmers. Through proper application of this model, MADE has aimed to improve the business productivity, profitability and competitiveness of its partner firms and in turn improve the yields and incomes of an ever-increasing number of smallholder farmers.

RESULT 1: IMPROVED BUSINESS PRODUCTIVITY, PROFITABILITY AND COMPETITIVENESS

Adoption and adaptation of the advanced model

Selection of programme partners

The MADE programme laid the groundwork for the extension period during the first quarter of Y5, by finalising the selection of partners for the remainder of the programme. Building on lessons from year 4, MADE identified the need to work with firms that were more commercially viable, ambitious and showed signs of being able to operate at scale. Through a robust, multi-stage process, MADE selected a total of 55 firms (32 lead firms and 23 support enterprises) that demonstrated the capacity, interest and resources to be able to invest in and deliver integrated packages of products and services to smallholder farmers. MADE facilitated the formalisation of commercial partnerships between lead firms and support enterprises, issued two-year memoranda of understanding and signed one-year grant contracts with the lead firms, setting out the nature of programme support to be provided and the obligations of the firms in terms of service delivery and reporting.

By the fourth quarter of year 5, MADE's partner firms had all submitted their final milestone reports. The programme determined that they had satisfactorily delivered on their partnership agreement requirements and had achieved the expected results. Even previously underperforming partners were able to achieve the targeted results. This can be attributed to MADE's robust monitoring efforts and its ongoing guidance and support for firms to put in place corrective measures to address gaps that had been identified throughout the year. Of all 32 lead firms, only one was unable to meet the requirements of the partnership agreement.

Y6 commenced with an analysis of the partner firms which had successfully delivered on all four milestones in their year 5 partnership agreements. Numerous criteria were considered, including SHF outreach as compared to targets, actual compared to forecast investments, FEA performance, and growth potential, among others. Overall, MADE gave careful consideration to existing partners who demonstrated the capacity and willingness to extend their outreach and would enable MADE to deepen its impact during the final year of the extension period. In addition, MADE evaluated 11 new agribusinesses that had expressed an interest in joining the programme.

During Y6, 43 firms were evaluated and 31 lead firms were selected, of which 24 were existing partners from year 5, plus seven new firms. In addition, a number of lead firms responded to the call for expressions of interest by crowding-in support enterprises to enable them to share risk and deliver bundled services to their SHF clients. As a result, 31 support enterprises were also brought onto the programme. This brought the total number of partners to 62, which was the highest number of partners since the programme began.

Development of workplans and support agreements

Once selected, lead firms were taken through a dedicated work planning exercise to set outreach targets and to determine costs of production, anticipated yields and forecast commodity volumes. The outreach targets were used to determine the numbers of FEAs to receive MADE support. In year 5,

monetary support, in the form of 40% of total operating costs, was based on one FEA per 200 SHFs. In year 6, operating costs support was scaled back, and based on one FEA per 260 SHFs. Levels of partner firm investment and MADE support for FEA service provision in year 6 are shown in Table 1.

Table 1: Year 6 level of FEA investment and support

TARGETS	UNIT	TOTAL ¹
Target No. of Smallholder Farmers (Outreach)		
No. of FEAs		
No. of FEA Managers		
Total FEA Operatives		
Total Cost of FEA Service Provision	GHS	
Total Partner Investment in FEA	GHS	
FEA Operational and Supervisory Support		
Milestone 1. Pre-Season Activities	GHS	
Milestone 2. - Season Beginning Activities	GHS	
Milestone 3. - Mid Season Activities	GHS	
Milestone 4. - End Season Activities	GHS	
TOTAL MADE Operational/Supervisory Support	GHS	
MADE Support as % total FEA Component	%	
MADE Other Support to FEA Component		
Farm Business Management Training	GHS	
Extension Training (Damongo)	GHS	
Extension Cascade	GHS	
Sub-total FEA Other	GHS	
MADE Other Programme Support		
Empretec Training	GHS	
M-Access	GHS	
Benchmarking	GHS	
Climate-smart Agriculture Demonstration	GHS	
Sub-total Other Programme	GHS	
TOTAL MADE SUPPORT FEA COMPONENT	GHS	
GRAND TOTAL MADE SUPPORT	GHS	
Made FEA Support per Beneficiary (SHF Outreach Target)	GHS	
TOTAL INVESTMENT BUDGET	GHS	
BUDGET less MADE Contribution	GHS	
FEA Cost as % Total Budget	%	
MADE Support as % Total Budget	%	

Improved delivery of season beginning, mid-season and end season inputs and services

Throughout Y5 and Y6, MADE's partner firms delivered the following inputs and services as part of the MADE advanced model:

- Field day trainings on weed control management practices
- Field day trainings on irrigation, mechanisation and climate-smart agricultural practices
- Aggregation activities
- Mechanisation services for season beginning (i.e. ploughing, harrowing, bounding, planting/seeding, etc.)
- Agricultural extension services (through deployment of farm enterprise advisors)
- Supply of fertiliser and pesticides
- Field day trainings on fertiliser application
- Supervision of the timely control of weeds

¹ Women in brackets

- Support to SHFs to manage incidences of pests and diseases on their farms
- Monitoring and supervision of fertiliser application
- Support to SHFs to update data on their crops

The delivery of these integrated packages was largely made possible through the crowding-in of support enterprises offering complementary inputs and services beyond those offered by the lead firms. As a result of these alliances, SHFs have been able to access higher-level bundles – including components such as climate-resilient seeds and mechanisation services, among others. A greater number of SHFs are receiving medium and premium bundles rather than basic bundles, compared to Y5. In addition, and as a result of ongoing feedback and guidance from MADE to its partner firms, agribusinesses have more effectively delivered on the ‘seven SHF rights’. For example, there have been demonstrable improvements in delivery timelines, which have enabled farmers to receive inputs at the right time in the farming season – which can be largely attributed to the presence of FEAs on the ground. It has enabled partners and their affiliated SHFs to cope more effectively with drought and pest issues. Overall, the benefits of these partnerships have resulted in improved on- and off-farm productivity, and corresponding increases in yields, incomes and land size being cultivated by SHFs.

While MADE intended to encourage the adoption of a generic advanced model across all of its partner firms, the diversity of these firms has interestingly resulted in different interpretations of the model. Through MADE’s support, these businesses have evolved into a pioneering group of enterprises interpreting and delivering the MADE advanced model in their own ways – using a variety of business strategies. Although the predominant model remains the smallholder outgrower scheme, some businesses have moved to a nucleus outgrower arrangement, using their own land for certified seed production and as a demonstration (model) facility to be used for training lead farmers and farm enterprise advisors. There are also examples of agribusinesses operating contract grower operations, with land owned by the firm leased out to better-performing smallholder growers under semi-commercial production arrangements, and FEAs acting as unit farm managers. Less common are examples of integrated, composite and split service models from former input dealers who have expanded their offerings to include specialist services (often from multiple sources), including access to market. The FEAs under service model arrangements are often paid on a strict commission basis.

Beyond being able to offer a more inclusive range of services and supplies, these agribusinesses have also been able to extend their outreach and deliver to a wider SHF base. By the end of Y6, the 62 partner firms had achieved an outreach of 85,939 SHFs (46% females), of whom 41,559 were newly reached SHFs. This represents a 30% increase from Y5, during which the 55 partner firms achieved an outreach of 66,531 SHFs. In addition, Y6 was particularly encouraging in terms of investments in inputs and services by partner firms. By Q4, they had surpassed their projected investments by £██████ (see Results Section)

Another significant development as a result of implementation of the advanced model has been the increase in farmer incomes. Smallholder farmers achieved an average income increase of £████ in the 2019-20 season, which is nearly four times the income they were achieving prior to using integrated inputs and services through the advanced model (the 2014-15 baseline was £████ per annum). Improved yields and expansion of plot size have been the main factors. As a consequence, many smallholders have begun to pay a portion of cash up-front for inputs and services, rather than having to receive the items on credit with enforced in-kind repayments back to the agribusinesses. By paying directly for these inputs, they have been able to reduce the volumes of produce they supply to the agribusinesses, and have earned additional income by selling the remaining quantities of crops to other end-markets or by retaining a portion of the supply until prices appreciate. This arrangement has also enabled agribusinesses to expand their outreach, by offering inputs and services on credit to new SHFs. The percentage of crop value paid back by farmers to meet input and service credit in Y6 ranged from 14% for rice and groundnuts to as high as 37% for maize.

Highlighting quality standards and improving product quality

MADE has continued its efforts from Phase I by helping partner firms to not only increase the volumes of produce they are able to sell in out-markets, but also to improve the quality, in an effort to meet the requirements of major buyers such as Samba Foods, Premium Foods and Nestle Ghana. Being able to sell to these buyers at the quality and volume required will result in potentially increased incomes for agribusinesses and SHFs alike. During the first four years of the programme, MADE primarily worked on raising awareness of grading systems. Starting in Y5, MADE intensified its promotion of the use of Aflasafe to produce aflatoxin-free groundnuts and maize, and worked to obtain the buy-in of its partners to include these products in the premium bundle.

To further this initiative, MADE established a formal partnership with the International Institute of Tropical Agriculture (IITA) and the Ghana Commodity Exchange (GCX) to test the use of Aflasafe on partner firm demonstration plots, build the capacity of selected agribusinesses to apply the product, and connect them to potential output markets offering value premiums. In Y5 Q2, an initial training was provided to 83 participants (12 agribusiness owners and 71 field staff).

In Y5 Q3, in conjunction with IITA and Macrofertil Ghana Limited, MADE facilitated testing on five more partner farms, and supported food security training of FEAs from a further fourteen agribusinesses involved in sorghum, maize and groundnut production. The results from the demonstration farms revealed significant differences in aflatoxin levels between those treated with Aflasafe and those that were not treated. There were also differences between produce stored under different conditions prior to testing. Crops from the treated fields and held under good conditions had average aflatoxin levels of 1.4 parts per billion (ppb). By comparison crops from non-treated fields held under good storage conditions had average levels of 8.47 ppb. Under poor storage conditions, the aflatoxin levels dramatically increased, with crops from treated fields showing an average of 6.2ppb and crops from non-treated fields an average of 54.6ppb. All tests were conducted on produce held for a maximum of 10 days prior to testing. The affect of longer storage was not covered in this study.

After short periods of storage (less than 10 days) all crops held under good conditions (both treated and untreated) met the safe aflatoxin level of 10ppm, set by the Ghana Standards Authority (GSA). However, the lack of good storage facilities and the delays in shipping produce from the north to the south of the country means that only treated and freshly harvested produce can satisfy the stringent requirements of many end users. The use of Aflasafe offers an opportunity to interest large off takers like Nestle Ghana, which recently made it standard practice to source only from farms using Aflasafe. For produce not destined to the markets in the south and overseas, improved quality of Aflasafe products from MADE partner firms sold on the local market will result in corresponding improvements in food safety and health for northern Ghanaians.

At the beginning of Y6, MADE supported 13 partner firms that had participated in the previous year's demonstrations to include Aflasafe in their bundles of inputs and services to SHFs. As at the end of Q2, these partners had distributed 12,620 kg of Aflasafe to 2,762 SHFs, which was almost 60% below the planned roll-out.. These results reinforced MADE's understanding that agribusinesses are unwilling to increase their costs of production when there is no apparent market for aflatoxin free product and without the opportunity for recovering a reasonable return on investment. Additional efforts must be made to effectively brand and market "safe" products and identify end markets that are prepared to pay premium prices to suppliers. A study of the potential market for "food-safe" products is planned during Phase 3.

To further showcase the efficacy of Aflasafe on groundnuts, in Y6 MADE supported eight of its partner firms to establish demonstration farms. The programme conducted field days for a total of 2,091 SHFs (including 627 females) on the proper application of Aflasafe, such as when to apply the material, how to apply the material to attain an even distribution, and how to determine whether the application has been effective. These partners were also supported to adhere to Aflasafe application and management protocols throughout the period, for the maize, sorghum and groundnuts that had been treated with Aflasafe.

In Y6 Q4, MADE worked with these partners to develop projections for volumes of produce to be aggregated from the farms that had applied Aflasafe. In the coming months, MADE will collate data on the crops that have been aggregated from these farms, and will engage with Ghana Commodity Exchange (GCX) to identify appropriate output markets. The programme will also continue to assess different options for improving the branding and marketing of groundnuts and other products that have been treated with Aflasafe and harvested in accordance with good agronomic practices, in an effort to secure greater returns on investment. This will also be informed by the market study on traceability and certification branding to be conducted during Phase 3.

Deployment of innovative products and services

Promote adoption of FEA services and improve service delivery

Following the successful introduction of farm enterprise advisors (FEAs) and business development advisors (BDAs) in Y4, in response to high demand from SHFs, MADE's partner firms subsequently expanded the FEA/BDA network. At the beginning of Y6, the firms planned to recruit a total of 326 FEAs/BDAs (290 males and 36 females), along with 47 FEA/BDA managers (44 males and 3 females).

Actual numbers for Y6 were down slightly on those numbers, with 315 FEAs/BDAs (276 males and 39 females), and 39 FEA/BDA managers (35 males and 4 females). FEAs and BDAs continued to fulfil critical functions, such as providing advice to SHFs on good agricultural practices and different agricultural products, assisting with land use and management, coordinating the draw-down of mechanisation services, enhancing on-farm productivity and profitability, and furthering the outreach of MADE's agribusiness partners.

Interest in the use of FEAs/BDAs has continued to grow as the evidence of their impact on SHFs and businesses alike has accumulated. For example, a number of partners have noted significant improvements in in-kind recovery and extra purchases. Increased contact between FEAs/BDAs and SHFs has resulted in an increase in the volume of produce that is aggregated during harvest, and this has resulted in corresponding increases in income for SHFs and increases in revenue for agribusinesses. For some businesses, revenue has increased by more than 20%.

Initial observations from the FEA/BDA model show that the effectiveness of FEAs and BDAs is strongly linked to the amount of contact time they have with SHFs. In order to increase this time and increase efficiency, MADE has worked with its partner firms to adopt an SHF outreach strategy that groups SHFs into clusters. All farmers in an outgrower scheme that work in the same area have been encouraged to form a cluster so that FEAs/BDAs can meet with the cluster rather than with individual farmers. Lead farmers are normally appointed to coordinate the SHF cluster. This has enabled FEAs/BDAs to deliver inputs and services and provide technical support to several SHFs at the same time, while also enabling SHFs to benefit from peer to peer learning and reducing transaction costs for the agribusinesses providing these extension services.

Feedback from this outreach strategy has been largely successful. As FEAs/BDAs have increased their contact time with SHFs, seventy percent of the lead firms reported that distribution of inputs and services, SHF mobilisation and delivery of advisory services have improved. Furthermore, the increased presence of FEAs/BDAs has improved visibility for the agribusinesses, and solidified trust and working relationships.

To further improve the capacity and effectiveness of FEAs and BDAs, MADE decided to conduct a number of training courses in Y6. These included a training of trainers (ToT) session, step-down trainings, farm business management training, a farm machinery and equipment operation training and a post-harvest training. MADE started with the ToT and conducted a procurement process at the end of Y5 to identify a qualified service provider to design and deliver it. [REDACTED] was selected as the preferred provider. [REDACTED] conducted a rapid needs assessment to identify the most relevant topics for the training of the agribusiness FEAs and BDAs. These included topics such as

gender sensitisation, climate-smart agriculture, effective engagement with SHFs, and safe use and disposal of agro-chemicals.

The ToT was delivered in Y6 Q1 to a total of 96 FEAs/BDAs (92 males and 4 females). The trainers were certified by the college to conduct subsequent step-down training to other FEAs. During Y6 Q2, MADE, with the support of its partner firms (29 lead firms and 31 support enterprises), delivered step-down training to 435 FEAs (including 44 females). Of these, 349 were directly supported through the MADE programme, while the remaining 86 were hired by MADE partner firms to provide services to SHFs not covered in MADE's target outreach.

The feedback from training participants was overwhelmingly positive. Participants expressed an interest in improving their knowledge in other topic areas, as well as receiving refresher courses on an annual basis. Partner firms also committed to providing resources for other training opportunities in the future, and expressed a desire to receive training support for their farm machinery and equipment operators, to enable them to carry out routine maintenance and servicing properly, to improve the performance and longevity of the equipment and more effectively deliver services to affiliated SHFs.

██████████ was selected to design and conduct training for farm machinery operators. During Y6 Q3, they led the training for operators from MADE's partner firms and conducted a second training for FEAs on farm business management. The farm machinery and equipment operations training provided practical hands-on instruction in the use, maintenance and servicing of various types of machinery and equipment for both pre-season and end of season land preparation. The farm business management training provided FEAs/BDAs with an understanding of how to approach farming as a business, and how to meet market demands and standards. The trainings were conducted in three separate sessions, over the course of five and three days respectively. A total of 100 FEAs and farm machinery operators participated in each course.

In addition to the ToTs and step-down trainings conducted by ██████████, representatives from 25 partner firms participated in a three-day ToT course conducted by the ██████████ ██████████ ██████████ project. The training provided participants with an opportunity to improve their skills in SHF engagement, in order to support SHFs to improve their profits and overall productivity. MADE also worked with ██████████ to encourage MoFA district directorate offices to invite MADE partners to step-down trainings at district level. Twenty-five FEAs from eight MADE partner firms attended the post-harvest step-down trainings.

While the widespread adoption of FEAs has been a notable success of the programme, there are also limitations which may impact the ability of firms to continue with this approach. First and foremost, there is a shortage of qualified and trained individuals to assume these positions. For example, at the end of Y5, out of a total of 350 FEAs who were nominated for MADE support, only 20% held the necessary educational and work qualifications. The sustainability of this intervention will necessitate additional investment from agribusinesses in training and operational costs to deploy FEAs to the field.

Support agribusinesses to deliver mechanisation services

From its first four years of implementation, MADE recognised and sought to mitigate a critical gap in northern Ghana in the quality and availability of mechanisation services. In Y5 Q2, it began discussions with a mechanisation service provider, which formed the basis for a cost-benefit analysis to highlight the commercial returns for agribusinesses and SHFs involved in rice and maize cultivation. MADE subsequently validated the analysis with other stakeholders and quantified the needs of SHFs. In Q4, using the data that had been collected, MADE identified suitable service providers with the required equipment, and facilitated the delivery of this equipment to the firms. As a result, 27 of the lead partner firms were able to offer harvesting services to their SHFs (including machinery and equipment such as combine harvesters, threshers and shellers). A total of 26,313 SHFs (including 40% women) received harvesting and post-harvesting services. This represented a value of £██████████ in cash or in-kind payment arrangements.

In Y6 of the programme, MADE continued to support its partner firms to access the appropriate pre-season and end of season mechanisation services. The programme also secured the buy-in of eight of its lead firms to establish model farms on a cost-share basis with MADE, and by Q2 had put formal agreements in place specifying this co-investment arrangement. MADE agreed to invest 62% of the total cost (£██████████) while the partner firms agreed to fund the remaining 38% (£██████████). The eight firms conducted 18 field days showcasing different mechanisation approaches such as ploughing, harrowing, levelling, rotation, mechanised transplanting of seedlings, direct seeding, and bonding for conservation of water. A total of 2,184 participants (including 829 females) attended the field days; of these 1,313 were SHFs (564 females). The firms also engaged in activities to inform their affiliated SHFs about the increased returns that may result from the use of appropriate mechanisation services during the right time in the farming season.

MADE continued to support the firms to conduct additional farmer training sessions in Q3, which included three field days on mechanisation and five on climate-smart agricultural practices. In total, 371 SHFs (198 females) affiliated with MADE attended the demos, in addition to 152 (69 females) non-MADE-affiliated SHFs. Two additional field days were held in Q4. Data collected on the model farms indicate that the yields substantially exceeded those of the control fields in the areas adjacent to the model farms.

During the Y6 Q4, MADE's partner firms engaged in a variety of harvesting and aggregation activities, including: drying of aggregated produce, winnowing, cleaning, sorting, grading, weighing and re-bagging of aggregated produce, in-kind recovery and/or buy-back/extra purchases, and transporting produce to output markets and designated warehouses. In addition, MADE has brokered business partnerships between its partner firms and mechanisation service providers. Eighteen partner firms have taken advantage of this opportunity to provide appropriate mechanisation services to their affiliated SHFs, and in some cases, have procured the machinery and equipment to ensure on-time delivery of these services for future seasons. During the 2019/2020 business season, a total of 13 tractors, 4 combine harvesters and 26 threshers were purchased.

Support agribusinesses to promote irrigation and water management

In the second and third quarters of Y5, MADE conducted a cost-benefit analysis to determine the potential benefits of investing in on-farm water management and irrigation kits. It also identified 12 potential suppliers and had follow-up discussions to get a better sense of the types of kits, prices, durability, maintenance and replacement costs of various systems. MADE shared this information with interested agribusinesses, and also used it to refine the cost-benefit analysis.

From this analysis, MADE determined that the commercial incentives are greatest for irrigation of vegetables, particularly onions and tomatoes. MADE surveyed its partners, aggregators and off-takers operating in the value chain to gauge their interest in irrigation and, in parallel, issued a call for expressions of interest to 10 equipment suppliers to present information for a one-acre drip-irrigation model farm. The options were reviewed by MADE and their interested partner firms in Q4.

MADE also held preliminary discussions and visited the facilities of ██████████, which operate commercially irrigated farms and are looking to increase the number of SHFs who are cultivating on their farms. To promote the value of investing in commercially viable irrigation schemes, MADE organised a learning tour to IWAD's irrigated farming hub for 23 of its partner firms during Y6 Q1. From the tour, there were a number of key lessons learned, notably that irrigation with an in-grower business model is more profitable, drip irrigation is widely seen as the most efficient and profitable method for commercial production of onions, and commercial partnerships with key actors play a key role in the long-term viability of an irrigation scheme, among others.

In parallel to these awareness-raising efforts on the value of irrigation schemes, the programme launched a public tender to identify a firm to assess the partners' irrigation systems. ██████████ Firm was selected and successfully completed an evaluation of the irrigation systems of 13 partner firms in

Y6 Q2. From this analysis, they produced a summary of the overall findings; the key issues identified in the report and addressed through the technical assistance provided were as follows.

- Poor design and inappropriate sizing of main system components in all systems reviewed,
- Poor system performance,
- Lack of access to irrigation service with some partners having to travel to Accra to secure parts,
- Lack of filtration units in the drip irrigation systems causing clogging and disruption to supply,
- Considerable need for improvisation (which affects effectiveness) to keep systems operating, and
- Only three sites had adequate fencing despite signs of cattle destruction during the dry season.

The report identified specific recommendations for each firm of the 13 firms to improve their existing systems, including the required technical support to address those gaps. They also selected seven partners for the establishment of irrigation model farms and participated in the evaluation and selection of irrigation supply companies that would co-invest with these partner firms.

The procurement process was finalised in Y6 Q3 and two irrigation supply companies, [REDACTED] and [REDACTED], were selected to provide technical assistance to the seven partner firms on appropriate irrigation assembly, installation, maintenance and servicing. Different mixes of irrigation kits that are both affordable and user-friendly to SHFs were selected for the demo farms.

Co-investment agreements were signed under which the two supplier companies are covering the cost of the irrigation kits, MADE is partly contributing to labour and travel costs for [REDACTED] and [REDACTED] technical experts, and the beneficiary partner firms will cover the cost of land, water, fences, poly-tanks, metal stands, labour and assorted agro-inputs. As of the end of Q3, the model farm sites had been identified, cleared and fenced and nurseries established. Throughout Q4, the technical experts from the supplier companies have worked closely with each of the partner firms to encourage greater uptake of the technologies, to provide training on operations and maintenance and perform troubleshooting on any issues that arose. The installation and operationalisation of irrigation kits on all seven demonstration farms was completed by the end of Q4 and all units commissioned. Demonstrations will begin in Phase 3 of the programme.

Adoption of environmentally sound and socially inclusive business practices

Promote environmentally sound and climate-smart agricultural practices

In the Y5 Q2, the programme worked with its partner firms and other actors to document existing climate-smart agricultural practices that would be most suitable to implement in the NSEZ to mitigate the negative impacts of climate change. To this effect, MADE revisited a report it had commissioned in 2016 from the International Water Management Institute (IWMI), and also documented other CSA practices that have been observed. Practices that were identified to improve climate-resilient agricultural systems and improve productivity and profitability included: integrated pest management; improved drought-resistant seed varieties; soil moisture conservation strategies (i.e. mulching, crop rotation, intercropping with legumes etc.); and rainwater harvesting. MADE not only shared the document with its partner firms, but also began promoting the use of such practices to its partners in Y6 – particularly those practices that were affordable and readily accessible to SHFs.

MADE also promoted CSA practices through the advanced model by encouraging its input dealers to provide climate-resilient seeds and its partner firms to increase their investments in CSA practices. MADE supported firms in better understanding how climate-smart techniques not only help mitigate the effects of climate change, but also reduce on-farm costs, enhance crop performance, improve the overall quality of harvested produce and enhance the return on investment for agribusinesses and SHFs. By the end of Y5, 36,787 SHFs had invested in CSA practices, representing 55% of the total outreach reported by MADE's partner firms.

As of Y5 Q3, 11 of MADE's input suppliers had begun offering improved onion and vegetable seeds that are pest- and drought-resistant and tolerant to high temperatures, which makes them suitable for dry season farming. In addition, FEAs have continued to advise farmers on good agricultural practices

to mitigate the negative impacts of climate change. The training that FEAs received from [REDACTED] helped raise awareness of the use of CSA to improve soil productivity, how to properly handle and dispose of agrochemicals, and engaging in more sustainable and productive farming practices.

In addition, during MADE's monitoring visits to the lead partners, the market development specialists provided guidance on the benefits of various practices that were recommended in the IWMI report. The market development team verified that some of these techniques, including mulching, integrated pest management and organic manuring, had been put into practice by certain lead firms and their affiliated SHFs.

Following the dissemination of CSA best practices with its partner firms, several firms expressed interest in piloting some of these techniques, and by Y6 Q2, seven lead firms had signed amended grant agreements to co-invest in demonstration farms with MADE. The programme agreed to a 52% investment of the total cost (representing £[REDACTED]), while the partner firms agreed to co-invest the other 48%. The seven demonstration farms were set up to model three types of interventions (CSA, mechanisation and water management) and field days were held. The efficacy of the CSA interventions was noted during the market development team's monitoring visits to the sites, including increased propagation resulting in a reduction in the cost of weedicides, soil improvements resulting in reduced erosion, and minimal effects from droughts as compared with the control fields, which were significantly affected.

In Q3 and Q4, seven additional farmer training sessions were held on the model farms. The participants particularly appreciated the maize model farms that showcased legume intercropping and minimal land tillage. In the coming months, during the final phase of the programme, MADE intends to evaluate the lessons learned from these field demonstrations, to encourage partner firms and their affiliated SHFs to scale-up profitable practices.

Promote adoption of gender mainstreaming and socially inclusive practices

In an effort to promote gender mainstreaming and socially inclusive practices, MADE conducted a robust gender assessment in Y6 Q1, not only to assess the impacts of its own efforts to-date, but to better understand the constraints to women's effective participation in the agricultural sector, and identify potential solutions to these barriers. Over the course of several weeks, the assessment team conducted 25 key informant interviews and 29 focus group discussions with MADE agribusinesses, FEAs and SHFs. Supplementary interviews were held with other key actors, such as [REDACTED], the [REDACTED] project, the [REDACTED] project, among others.

The assessment revealed that women are effective at farming – often producing higher yields and demonstrating higher recovery rates than men. A number of female farmers have also started to engage in commercial farming, largely as a result of the buy-back schemes through the MADE advanced model. This has not only had significant impacts on their ability to contribute to their household expenses but has also positively impacted the way they view themselves and the way that others perceive them. In spite of these positive social and economic benefits for both the female SHFs and the agribusinesses they work with, they continue to be limited by the traditional patriarchal system in which they operate. While there is greater acceptance of women participating in economic activities, women are still expected to prioritise household responsibilities.

The assessment also outlined short-term and long-term recommendations for how MADE and other market systems programmes can more effectively engage with women and promote their participation in the agricultural sector. Some short-term recommendations for MADE's final year of implementation were as follows: encourage sharing of lessons learned among agribusinesses, analyse and share findings on the economic benefits of working with women, provide gender sensitisation trainings, and establish fora for female FEAs, among others.

Immediately following the assessment, the lead consultants conducted gender sensitisation trainings for MADE staff and the business development service provider, to improve their awareness and capacity to implement socially inclusive practices. The training also provided an opportunity for the consultants to validate the findings from the study, discuss key lessons learned and discuss potential follow-on activities.

MADE also increased its efforts to put into practice some of the recommendations from the gender assessment. For example, the programme sponsored and participated in the UN International Day of Rural Women (IDRW), which showcased successes and lessons learned. The event was attended by 86 individuals from 15 of MADE's partner firms, plus 8 female FEAs and 37 SHFs. Notably, 11 of MADE's nominees received certificates of achievement for their promotion of women in agriculture. MADE also produced two success stories on gender in Y6 Q3 which highlighted the benefits of recruiting female FEAs.

Enhancement of business skills and tools

Enhance business management practices

In Y5, following the selection of new partner firms, MADE began working with its lead firms to build their capacity to establish and manage supply chains and coordinate delivery of goods and services to SHFs under the advanced model, with the help of their support enterprises. More broadly, these capacity-building efforts consisted of identifying existing institutional gaps that are impeding productivity and growth, and improving their business management practices and tools.

To this effect, MADE decided to conduct a benchmarking assessment of its partners to identify these gaps and measure their performance against other non-MADE businesses that had achieved acceptable standards and were considered to be competitive and high performing. Throughout Y5 Q3 and Q4, MADE conducted a competitive tendering process to identify a service provider offering benchmarking tools. SCOPEInsight was selected, as their tool was identified to be the most appropriate option for the partner firms.

Three national consultancy firms were contracted to lead the assessment: MDF, Open Ghana and Tradeline Consult. They led selection and training of assessors from business development service providers, who completed the SCOPEInsight training and were certified to conduct the assessments.

A total of 53 firms participated in the assessment: all 32 MADE lead firm partners and 21 non-MADE affiliated firms. They were evaluated across eight dimensions: internal management, operations, sustainability, supply, market, financial management, external environment and enablers. The assessment concluded in Y6 Q2, and the final assessment report was submitted to MADE in Q3.

It had initially been anticipated that the assessment would be completed earlier. However, the individual assessment reports submitted by ScopeInsight highlighted limitations in the design of the tool, notably that it was not flexible enough to account for variations between different types of businesses or to assess their performance accordingly. This was brought to the attention of ScopeInsight, who responded positively with a series of working sessions, after which the tool was adapted to enable a more comprehensive and accurate assessment of business performance across all firms.

Using the adapted tool, now considered to be 'fit-for-purpose', ScopeInsight produced revised customised reports for each firm, and scored them on a scale of 1 to 5 for each of the dimensions. With this scoring system, 76% of the firms were categorised as a professional business. On the basis of the revised reports, in Q3 the business development service providers then conducted a debriefing exercise with each business to discuss the findings of the report, including the strengths and weaknesses identified, and potential solutions to address those gaps. From this exercise, the businesses were able to re-assess their operations, and determine how to mitigate challenges they are facing.

The business development service providers also assessed the firms' interest in participating in a process to develop roadmaps that will outline short-term business strategies over the next year and a

half to grow their businesses, identify potential solutions to mitigate challenges and gaps identified in the benchmarking exercises, and outline a guide for implementing these improvements.

Firms that expressed an interest were evaluated by MADE to assess their suitability to participate in the roadmap process on the basis of several criteria, including management buy-in, coherent vision for the business, understanding need, ability to prioritise issues, and strengthening impact of SHFs. MADE identified 10 initial firms for developing roadmaps, and selected two business development service providers, Empretec and Tradeline Consult, to create them. During the assessment exercise, a number of firms already demonstrated that they see the value-addition in paying for business development service providers to grow their businesses.

Introduce improved data management systems and tools

In addition to its efforts to enhance its partners' business management practices, in Y5 MADE also started working to improve their business tools and management information systems, providing them with templates to track investments and mechanisation services. The investment template enabled firms to track data on operations and management costs, investment areas and projections on return on investment (RoI). This tool enabled the firms to more effectively track their investments, assess the performance of each market and take informed decisions to increase productivity and profitability of their business. MADE worked with partners on the verification and validation of their investment data and action plans for the 2018/2019 season. It also helped them identify and address gaps and create plans that could be more easily operationalised and tracked against specific outputs or deliverables. The tool for tracking mechanisation services enabled partners to assess the services required by SHFs for season beginning, mid- and end of season activities. With this information, the agribusinesses were able to more effectively plan, procure and supply these services to SHFs at the right time for on-farm operations. The programme also utilised these data to facilitate linkages between agribusinesses and dealers that provide mechanisation services.

While these tools and the development of detailed partner agreements laid the groundwork for more effective engagement and more measurable results, by Y5 Q3 it became clear that there was a significant gap between the expectations laid out in the partner agreements and the capacity of the agribusinesses to deliver. The poor quality and late submission of these reports highlighted that the majority of MADE's partners had poor data management systems and inaccurate data collection efforts. Key data gaps were also identified, such as duplicated SHF records, partial or missing data for SHF outreach for specific markets, and/or missing data on inputs and services that were provided to those SHFs. In response to these findings, MADE increased its efforts to improve its partners' business management practices. The MADE monitoring and learning specialist reviewed the existing systems utilised by all partner firms and proceeded to streamline the data collection tools to a more manageable number of indicators, and to generally make the tools more accessible and easier to use, and hence decrease the level of effort needed to complete reporting for future milestone reports.

During Y5 Q3, MADE consulted 23 partners to assess their use of farmer passbooks and farm input purchase and use books (FIPUBs). MADE had distributed 63,000 passbooks and 4,500 FIPUBs in Y4, for the purpose of recording transactions between agribusinesses and SHFs and to increase transparency and accountability. While partners had distributed 71% of the passbooks and FIPUBs to their SHF clients, use of the books was low. All partner firms highlighted the fact that the format of the books was not user-friendly for FEAs or SHFs. Others noted that illiteracy of farmers or lack of training for FEAs on proper use of the books also lessened their usefulness, and that the agribusinesses were unable to use the data for strategic decisions, since the data is recorded and kept by the farmers.

Following this feedback, MADE decided to conduct a robust survey to better understand the data needs, gaps and technology access of its partners and their client SHFs. The survey was led by the Nathan Associates technology and innovation lead. It targeted 20 partners, 16 SHFs and 5 financial institutions. A number of data management challenges were identified through the survey, including:

- Difficulty in keeping transaction records

- Difficulty transferring data from paper records to Excel spreadsheets (or other databases)
- Lack of access to farmers' data (if they are using passbooks or other paper records)
- Lack of an effective inventory management system, and inconsistencies between transaction records and inventory records
- Discrepancies between transaction records of farmers and those of agri-businesses
- Difficulty in effectively using the collected data for decision-making purposes by the lead firms
- Difficulty accessing finance due to lack of organized financial records.

It was largely recognised by the lead firm managers interviewed that these issues hamper the growth of both the businesses and their SHF clients. To this effect, the owners placed high value on improving their ability to collect and more effectively manage data. From this survey, MADE recommended the development of a digital data tool. A concept note was developed for a database that would enable MADE's partners to address the challenges, and MADE conducted a procurement process to identify a service provider that would be able to design and commercially deliver such a tool.

This eventually resulted in the development and introduction of an online web-based application called M-Access, to enable partners to collect and manage data on their affiliated SHFs and business operations. In the first quarter of Y6, MADE contracted the service provider, Image-AD, to develop this system. The tool was piloted and subsequently rolled out to lead firms and support enterprises in Y6 Q 2. Fifty-six of the 62 partner firms participated in training by Image-AD on using the application. Training was also provided to 337 FEAs and focused on practical exercises for using the application to update records and transactions of SHFs in the field.

Improved access to finance

In order to effectively connect MADE's agribusiness partners with financing opportunities, a review of the working capital requirements of each of the lead partners selected for the 2018-2019 farming season was undertaken. This enabled MADE to gain a better understanding of the financing needs of each firm and to determine the amount of co-investment required from MADE.

In Y5 Q3, this was followed by a full survey to determine the levels of finance needed for partner firms to expand and strengthen their operations. Data was collected in five categories: inputs, equipment, aggregation, operations and infrastructure. From this assessment, 18 of the firms were able to identify specific areas of their businesses where additional financing could be utilised. The total financing needs of all 18 firms was GHS [REDACTED] (£[REDACTED]). The other 13 firms identified a broad need for financing but could not determine specific areas where it could be invested. Two other firms noted that they did not require any additional finances, since they already had strong liquidity. The majority of firms that indicated the need for additional financial resources were aggregators, who expressed a need to expand their operations to ensure scale.

Following completion of the financial needs assessment, MADE contacted 13 financial institutions to assess the financial products on offer and the requirements for issuing this financing. Nine of the thirteen institutions had finance products that were identified as suitable for MADE's agribusiness partners. These nine are: [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED] and [REDACTED]. Through the process of assessment, the financial institutions were also able to learn more about MADE and its lead partners, and as a result of this interaction expressed interest in being introduced to the lead firms to explore the possibility of a commercial relationship. Representatives from five financial institutions participated in the business network platform in December 2018 to present their products to participants. Following the forum, MADE collated and shared information on the available products and services to all their partner firms.

In Y6 Q1, [REDACTED] conducted an entrepreneurship training for 47 business owners, and introduced MADE's partner firms to [REDACTED] Bank, who agreed to waive certain requirements such as financial statements and collateral. At the Y6 Q3 partners review meeting, a presentation was given detailing the

financial products that [REDACTED] offers and the requirements to quality for credit. Interested firms will be assessed by [REDACTED] based on their cashflows.

Aside from accessing financing through a banking institution, many partners have capitalised on commercial partnerships to leverage access to goods and services without having to invest in new product lines. While MADE initially facilitated partnerships between lead partners and support enterprises, other support enterprises have been crowded-in at the behest of the lead firms, which indicates that firms see the commercial value in having a consortium of partners to spread risk, enable procurement of an expanded array of services and inputs without needing outside financing, and allow scale-up delivery of the advanced model.

SECTION 4. PROGRESS TOWARDS MAINSTREAMING IMPACTS

MADE has operated in the challenging environment of northern Ghana over a period of six years, and in that time has built a strong understanding of the constraints and opportunities facing the agricultural sector. It has worked with agribusinesses to demonstrate how the adoption of advanced business models operating within a market systems approach can be used to scale up operations and build successful business-to-farmer and business-to-business relationships. Considerable progress has been made in bringing together small, isolated rural enterprises and remote and ill-supplied rural farming communities into more integrated smallholder outreach entities that can work closely together for the mutual interest of both parties. The level of success of the programme can be judged through the results it has achieved. Yields across all the major commodities have increased, land area under cultivation has more than doubled, and private sector investment has risen sharply. Businesses have become more competitive and profitable, while smallholder farmers have become more resilient and seen substantial increases in income.

Despite all this success, and interest in the MADE approach within the industry, the level of dissemination to a wider audience of politicians, government departments and development workers was disappointing, and was questioned at successive reviews during Phase 1 of the programme. To more effectively mainstream these impacts and ensure the long-term sustainability of its interventions, in Y5 and Y6 MADE enhanced its efforts to document best practices and to disseminate this learning widely, in order to raise its visibility and showcase the successes of the programme.

Reaffirming the business case and documentation of best practices

During the final year of implementation, MADE undertook a series of assessment and business case studies to document the impact of MADE's interventions and the sustainability of the market systems approach, backed by independent data and evidence. These business case studies were conducted on cross-cutting themes such as gender and conservation farming, as well as key features of the advanced model such as FEA advisory services and commercial partnerships. The aim of the studies was to show the business case for adopting practices that would build a productive and resilient smallholder base for agricultural intensification in northern Ghana, and to demonstrate the capacity of the private sector to lead its development. Through active dissemination of the findings of the studies, it was hoped to influence government and development partner thinking on future policies. By demonstrating the commercial case for adopting the advanced model, it was hoped to reach out to a wider geography and attract more interest across the sector.

The case for gender inclusivity

The first of the assessment and business case studies that MADE supported was on gender inclusivity. The assessment was carried out by a team made up of an independent gender consultant, the UK-based MADE programme manager and three local enumerators. The team was supported by MADE staff in Tamale. Over the course of several weeks, the assessment team conducted a total of 69 key informant interviews and focus group discussions across the Upper East, Upper West and Northern regions and in Accra. Participants included business owners, FEAs/BDAs and SHFs from 24 partner firms. It also included public and private sector stakeholders, including the Ministry of Food and Agriculture (MoFA) and the Women in Agricultural Development Directorate.

The assessment made the case for increased investment in women as both valuable employees and clients for agribusinesses. It also developed a set of recommendations for agribusinesses interested in recruiting more female FEAs and/or increasing their female SHF client base, while considering challenges and opportunities.

For example, hiring more women as FEAs can be highly beneficial to both the businesses and women for several reasons:

- **Women are viewed as competent and effective at their jobs:** Agribusinesses who employ women have noted that they provide excellent services, are able to improve outreach to female SHFs, and bring in equal or higher revenues than male FEAs.
- **Female FEAs are trustworthy and reliable:** They demonstrate honesty and proper use of the resources that are provided to them by the agribusinesses, as compared with some male FEAs who use the resources for their own personal benefits.
- **Both male and female SHFs value working with female FEAs:** Many smallholder farmers who have worked with female FEAs noted that they perform as well, if not better, than male FEAs. Additionally, many female SHFs preferred working with female SHFs because they were found to have better communication and social skills than men. They were more supportive than male FEAs and could more easily relate to the female farmers.
- **Female FEAs are good role models for community members:** The use of female FEAs has started to change community members' perceptions of the capabilities and role of women – and has reinforced the fact that women can be farmers. It has also helped male farmers see the value in having their wives become farmers, and in sharing some household responsibilities so their wives have time to work.

Engaging with women as SHFs can also be very beneficial to agribusinesses, since:

- **Recovery rates among female SHFs are higher than male SHFs:** Many firms that have been tracking this data noted that repayment rates for women are between 95-99%, while for men it is between 80-89%.
- **Women SHFs adopt good agricultural practices (GAPs) and are able to provide high-quality produce and achieve high yields:** Women farmers consistently practice what they learn from FEAs and demonstration plots, and implement all GAPs, which results in higher quality produce. For in-kind repayment to agribusinesses, male farmers often sell the higher quality produce to other markets, and repay the firms with lower-quality produce, whereas women return the first harvest to the agribusiness, at a higher quality.
- **Men provide women with more and better land, and start helping with household chores as women become more successful in economic activities:** As many female SHFs increase their income from farming activities, husbands have expressed willingness to provide more land and assist with household responsibilities so women can spend more time on their farms.
- **Female SHFs express interest in expanding, which is likely to increase profits to agribusinesses:** Many female farmers lack the resources to invest in services and inputs. However, as a result of the buy-back option through the MADE advanced model, women have been able to access mechanisation services, improved seeds, fertilisers and other inputs in a timely manner, which has resulted in higher yields. As a result, many female SHFs have indicated their ambitions to grow their farms and expand into new crops, which is likely to bring increased profits to the agribusinesses.

These findings have demonstrated the enormous potential of women FEAs and farmers, and the good investment value that this represents to agribusinesses. It is hoped that with this evidence, more agribusinesses will recruit female FEAs and expand their outreach to include more women SHFs.

The case for FEA advisory services

The gender assessment and business case study was followed by an assessment of the commercial viability of the farm enterprise advisory service, to identify critical success factors and opportunities to promote its wider adoption. FEAs are a key pillar of the advanced model and serve as a critical linkage between smallholder farmers and the wider market. By using FEAs, agribusinesses are able to achieve greater control over the quality and consistency of supply. In the long term, this may significantly contribute to the commercialisation of agriculture in northern Ghana.

FEAs offer expanded services beyond those provided by government extension agents, such as land use planning and preparation, providing guidance on good agricultural practices (including climate-smart agricultural techniques), enhancing on-farm productivity and profitability, and serving as the liaison between SHFs and agribusinesses. Support is offered to SHFs during their pre-, mid- and end of season activities. As of Y6, MADE had an FEA to farmer ratio of 1:260.

The FEA business case study strongly supported the use of FEA services. It showed that companies adopting the services had been able to secure:

- **Consistent business growth:** Agribusinesses have experienced consistent year-on-year growth, and while this can be attributed to a number of factors, such as access to finance, ability to leverage commercial partnerships and other reasons, FEA services undoubtedly play a key role in this. Some agribusinesses estimate that 25-75% of this growth can be attributed to the introduction of FEA services.
- **Improved recovery rates:** Since the introduction of FEAs, agribusinesses have seen a dramatic increase in the percentage of crops that are recovered as in-kind payment from SHFs for the inputs and services that were provided on credit.
- **Improved risk management:** New farmers are screened by FEAs before they can begin receiving inputs and services from agribusinesses. Once approved, FEAs continue to monitor farmers' performance throughout the farming season and to put in place appropriate mitigation measures for any issues that are identified.
- **Improved yield, quality and farmer productivity:** FEAs provide ongoing guidance on GAPs, and continual monitoring of how and when the inputs and services are applied. This results in higher quality produce and improved SHF productivity, which in turn leads to higher yields for agribusinesses to recover. This also enables greater security of supply and increased revenue for agribusinesses.

There is enormous demand from SHFs for these services, which presents a key investment opportunity for agribusinesses – whether through scaling up their services for existing SHFs, increasing their outreach and/or expanding their area of operations. However, some key challenges remain, such as the shortage of qualified individuals to fulfil these functions. Some recommendations to address this issue include:

- formalising incentives for FEAs,
- offering more competitive pay,
- building the capacity of FEAs through selective training, and
- recruiting a greater number of female FEAs, who are more trusted within the rural communities

In addition, private sector actors such as agricultural colleges have a role to play in expanding the cadre of qualified individuals. If these critical success factors are taken into consideration, the capacity of FEAs will grow, and agribusinesses will be able to scale up these services to meet increasing demand and enable more robust pathways to growth.

The case for commercial partnerships

During Y6 Q4, MADE completed its fourth business case on commercial partnerships. The assessment was led by two consultants from [REDACTED], supported by two local consultants in Tamale. Twenty-five of MADE's partner firms were interviewed for the study, in addition to five other stakeholders ([REDACTED], [REDACTED], [REDACTED] and [REDACTED]).

The rationale for encouraging B2B partnerships is to enable agribusinesses to provide a wider range of higher quality services to greater numbers of SHFs and to contribute to the delivery of MADE's 'seven SHF rights'. This improved service delivery strengthens business-to-farmer relationships, increases recoveries for aggregators, and leads to revenue growth for all value chain players. Through the

advanced model, MADE has facilitated commercial linkages between its partner firms and other agribusinesses, and this approach has been widely adopted. The benefits of B2B include:

- Improved access to higher quality inputs and services
- Access to finance and release of working capital through sharing of risk
- Identification of new markets and revenue streams
- Knowledge and resource sharing

The study also looked at the benefits accruing from improved business-to-farmer relationships associated with the smallholder outgrower model, including receipt of credit, improved crop recovery rates, improved access to markets and access to crop insurance to address the issues of climate change and production failures.

The assessment and business case study indicated that systemic change has begun to occur in the market systems in northern Ghana, as actors have adopted and adapted the use of commercial partnerships introduced by MADE. These encouraging findings reinforce the idea that the model should continue to be expanded; however, in order to do so, additional work needs to be done to build relationships with new end markets, as there is an over-reliance on single buyers. There is also a need to improve access to financial services to enable agribusinesses to invest in machinery and equipment, and in value-added processing, and to provide a more secure market for SHFs.

Raising Awareness over Climate Smart Practices

The case for conservation farming

Through the promotion of the advanced model, FEAs have promoted good agricultural practices – most notably climate-smart agricultural techniques – to enable farmers to mitigate the effects of climate change and promote improvements in yields and productivity. Proper application of these techniques is particularly critical for agricultural production in the harsh climate of northern Ghana, where farmers are reliant on one annual rain-fed growing season and are susceptible to an increasing variability in rainfall events. Under these conditions, a key issue is effective land management and moisture retention.

MADE commissioned an assessment and business case to assess the potential of conservation farming (CF) as a measure to ensure sustainable agricultural production and increase farmer resilience to climate change. Conservation farming promotes timely planting, crop rotation and land management practices that protect soil from degradation and erosion. In the context of northern Ghana, this involves disturbing the soil as little as possible, keeping the soil covered as much as possible, and mixing and rotating crops.

Minimum tillage is used to maintain the integrity of the soil. In this case, the farmer does not plough the entire field, but only the soil where the seeds and inputs will be placed. To maintain a permanent soil cover, crop residue is left in the soil after harvest to add to the organic carbon content and reduce erosion. Lastly, crops are rotated to prevent pests and disease, and intercropping of legumes is also introduced to improve nitrogen levels in the soil.

These practices complement, and are complemented by, other GAPs employed under the advanced model, including use of certified seeds and agrochemicals, and planting in rows. Intercropping and minimal tillage could easily be practiced alongside these techniques. However, an impediment to the effective adoption of these practices is the limited understanding of conservation farming by both private and public sector actors, as well as the lack of awareness of the environmental and commercial benefits that can accrue from this approach. An estimated 38% of carbon emissions due to agriculture practice come from land preparation and disturbance of the soil. A further 12% come from manufacture and use of fertilisers and the burning of crop residues after harvest. Practising minimum soil disturbance and greater accuracy in the application of agrochemicals would have an immediate and significant impact on reducing carbon dioxide emissions.

In spite of the challenges, there are indications that traditional land management practices are being replaced by new ideas, and that industry leaders are driving this change by adopting and adapting

models that improve profitability, competitiveness and growth. Awareness-raising efforts and evidence-based studies that demonstrate the value of conservation farming and return on investment will be critical to promoting the adoption of conservation farming by private sector actors.

Raising visibility and showcasing success

During the no-cost extension period, MADE worked to mainstream its impacts through a robust communication and influencing campaign. MADE's approach to increasing awareness, showcasing successes and advocating adoption of the market systems approach has focused on several components, including:

- Production of visual, digital and print communications products
- Participation in conferences, meetings and other events
- Creation of an online presence through the programme's website and social media sites

To support the roll-out of this campaign, MADE appointed a communications specialist onto the local team at the end of Y5, and also contracted Scriptoria, a UK-based communications and knowledge management firm, to augment the MADE team in Y6 Q2.

MADE has significantly increased its production of communications products. During Y5, it updated and disseminated the MADE brochure and "snapshot" leaflets on rice and groundnuts, which highlighted the programme's approaches and results in these crops. It also developed three success stories, highlighting the successes and lessons learned from partner firms that have adopted the innovative business models supported through the programme. In Y6, MADE produced a video showcasing the successes of the market systems approach, a two-page flyer, three lessons learned documents and ten additional success stories highlighting successes identified during the assessment and business case studies. MADE has continued to distribute existing and new communication products at events, meetings and other fora.

These products have been widely distributed through the MADE website, the National Farmers Day exhibition, the Business Network Platform (BNP) Forum, a pre-harvest event organised by the USAID-funded ADVANCE project, an annual farmers' day fair in Tamale and through quarterly regional partner meetings to review progress against milestone targets. As well as spreading awareness of the programme and its successes, MADE has used these events as an opportunity to showcase the work of its partner firms and their affiliated FEAs and SHFs, and to create linkages with other agribusinesses offering commercially viable products and services that could benefit the lead firms and their clients.

In Y6, MADE further expanded its visibility by participating in several fairs, fora and other agribusiness events. In Q1, MADE and with six of its partner firms attended the Upper West Regional Agribusiness Fair organised by the Market Oriented Agriculture Programme in collaboration with MoFA. The event was attended by more than 170 stakeholders. MADE also attended the Pre-Season Agribusiness Networking and Exhibition Forum in Tamale organised by the National Seed Trade Association of Ghana, which provided a platform for more than 300 industry actors to share ideas and explore market opportunities. MADE invested in booths at both fairs, where they disseminated MADE brochures and snapshots and spoke with visitors about the innovative business models being offered by the programme and the impacts that have been realised.

In Y6 Q2, MADE participated in – and sponsored five female-owned partner firms to attend – the Women in Food and Agriculture Leadership Forum and Expo in Ho, organised by the Agrihouse Foundation. The forum showcased the contribution of women to the agricultural sector in areas such as poverty reduction, food security, employment generation and economic growth. Four of MADE's partner firms had exhibition booths with products from their SHF clients, including maize, sorghum, rice and groundnuts.

MADE and four of its partner firms also participated in the 9th Pre-Harvest Agribusiness Conference and Exhibition in Tamale in Q3 that was organised by Agrihouse Foundation in collaboration with MoFA. The theme of the event was: "*Market Accessibility: The Structured and Sustainability Pathway*". Over

800 participants and 43 exhibitors attended the event, representing a diverse group of actors including agribusinesses, government agencies, development partners, research institutions and financial institutions. MADE had a booth at the event to promote the programme's visibility, and also participated in several panel discussions. In addition, it supported two of its partner firms, [REDACTED] and [REDACTED], to showcase their products and services at MADE's booth.

In the same quarter, MADE also attended the 2019 UN International Day of Rural Women (IDRW), with 77 individuals affiliated with or directly supported by MADE (including 15 partner firms, 8 FEAs, 37 SHFs, 15 students and tutors from [REDACTED]). Recognition certificates were awarded to 11 MADE nominees for their role in improving the role of women in agriculture. Articles in three newspapers (the Graphic Business, the Goldstreet Business newspaper, and the Business and Financial Times) after the event also helped to raise MADE's visibility.

Beyond the dissemination of communications products, MADE has sought to raise awareness of its innovative models by representing the programme at key stakeholder meetings and events, including the Agricultural Sector Working Group and Ghana Beyond Aid; and by meeting with key actors including the Ministry of Food and Agriculture, the Environmental Protection Agency, the Food and Drugs Authority, and the Plant Protection and Regulatory Services Directorate of MoFA (PPRSD). Through both formal and informal engagements with decision makers, development partners and other private and public sector actors, MADE has worked to increase awareness of the programme and influence these actors to adopt the market systems approach.

MADE has further amplified its awareness-raising efforts and sharing of lessons learned through the use of social media such as Facebook and Twitter. Starting in Y6 Q3, the communications team began posting one tweet a day. From September 2019 to February 2020, MADE has been able to gain 29 new followers, and has also had more than 27,000 impressions from its tweets. This is the result of improved quality of content and photos, increased frequency of posting, and mentions and hashtags. MADE has also started posting more frequently on its Facebook page, particularly after participating in agriculture events or after it has produced a new communications product, such as a business case or success story, and has linked viewers to these documents on its website to also increase traffic to the site. MADE's Facebook page currently has 292 followers.

During the same quarter, Scriptoria revamped the programme website to streamline the content, improve user accessibility of the site and present the data from MADE in a more compelling way. The MADE team will be working with Scriptoria in the coming months to finalise the partner resource centre, which will showcase the profile of each of MADE's current and former partners.

MADE's successes, as documented in its assessment and business cases, "snapshots" and success stories, among others, have given it the necessary credibility to effectively engage with actors to promote further adoption of these approaches and crowd-in other market players. In addition, MADE's communications and influencing strategy has helped to address common misconceptions about investment risks and potential returns on investment in the agricultural sector, as well as the notion that female farmers are less effective and more risk adverse than male farmers. Through the various assessments that MADE has conducted which provide evidence of the effective adoption and implementation of GAP practices by women, and which have enabled them to obtain higher yields and income gains than their male counterparts, MADE is able to challenge long-standing gender stereotypes that create barriers to women's effective economic participation.

SECTION 5. PHASE 2 RESULTS

A number of new logframe indicators were introduced or transformed during the Phase 2 extension. These include **Outcome Indicators – 1a**: Number of smallholder farmers and small-scale enterprises in MADE target markets experiencing positive income change (women in brackets) and **1b**: Number of SHFs who experience income increases over £80 per annum (women in brackets); and Outcome **Indicator – 2**: Average income (£) increase per SHF experiencing positive income change (cumulative); and Output Indicator 4 that was transformed following the cancellation of the VfM evaluation, into the following three elements:

4.1: Management cost per facilitation (intervention fund) £ spent; **4.2** - Facilitation (intervention fund) cost per beneficiary (cumulative); and **4.3**: Amount of additional private sector investment leveraged (cumulative).

Table 2: Phase 2 Registered SHFs with MADE partners

REGISTERED MADE SHFs	YEAR 5			YEAR 6		
	TOTAL	FEMALE	AS %	TOTAL	FEMALE	AS %
All	66,351	25,368	38	85,939	39,377	46
New	36,183	13,791	38	41,559	21,398	51

Logframe Results

Table 3: MADE Logframe Results

RESULTS AND INDICATOR STATEMENTS	BASE-LINE ²	Y5 CUMULATIVE		Y6 CUMULATIVE			VALIDATION, JUSTIFICATION, EVIDENCE
		TARGET ³	RESULT ⁴	TARGET ⁵	RESULT ⁶	Female (%)	
Outcome Indicator 1a Number of smallholder farmers and small-scale entrepreneurs in MADE target markets experiencing positive income change (women in brackets)	48,220 (21,073)						Y5 result: ██████████ Y6 result: ██████████ 74% of the farmers in the 2018-19 crop survey reported increases in income. Partners and FEAs responding to key informant interviews in 2019-20 season confirmed similar levels of income growth. The indicator result is determined by applying this % to the number of SHFs experiencing increased yield (outcome 3)
Outcome Indicator 1b Number of SHFs who experience income increase over £80 (women in brackets)	31,061 (11,739)						Y5 result: ██████████ Y6 result: ██████████ Of the key informant interviews conducted at the end of the 2018-19 and 2019-20 seasons, 75% of SHFs reported income increases of over £██████. The indicator result is calculated by applying this percentage to the 74% of SHFs experiencing increased income (see Outcome Indicator 1a) – which itself is determined from the number reporting increased yields (Outcome Indicator 3)
Outcome Indicator 2 Average income (£) increase per SHF experiencing positive income change (cumulative)	£434						Y5 result: ██████████ Y6 result: ██████████ Income increases per SHF with positive income change averaged at £██████ for all crops in 2018-19 and £██████ in 2019-20. The cumulative indicator result is determined by subtracting the 2015 baseline value of £128 from each of Years 5&6 and adding to the income figure at the end of Phase 1.
Outcome Indicator 3 Number of poor farmers and small-scale entrepreneurs who, respectively, experience higher sales and higher turnover (volume of production) as a result of new or improved models introduced through facilitation by MADE (women in brackets) (cumulative)	48,164 (21,059)						Y5 result: ██████████ Y6 result: ██████████ 2018/19 crop season survey results show that 82% (79%) of surveyed farmers achieved positive increase in yield compared to 2017/18 season yield performance. In the 2019-20 survey this percentage annual improvement increased to 85% (80%). These %s when applied to the total number of new SHFs brought into the programme in each of years 5&6, determines the end of Phase 2 cumulative result

² Year 1-4 cumulative results³ Baseline plus Year 5 target⁴ Baseline plus Year 5 results⁵ Year 5 and Year 6 target⁶ Year 5 and Year 6 results

Outcome Indicator 4 Number of instances of progress towards systemic change (see MADE's definition of systemic change) (cumulative)	17	18	32	32	46	na	Y5 result: 15, Y6 result 14 Data for this indicator was sourced from field reports from the MDS and key informant interviews with lead firms and support enterprises. Following desk review and triangulation by the MDMs and MLS, a total of 15 instances of systemic change (8 adapt, 4 expand, 3 response) were certified for inclusion in Y5. And a further 14 in Y6.
Output Indicator 1.1 Number of market actors facilitated by MADE changing their business practices and/or forming new partnerships in markets facilitated by MADE (support enterprises in brackets) (cumulative)	68	75 (9)	77 (11)	77 (11)	82 (32)		Y5 result: 9 (11), Y6 result 5 (21) MADE signed contracts with 33 lead firms in Y5 and 31 in Y6 to implement the advanced model. Of these 31 lead firms, 14 were firms engaged for the first time by MADE. To enhance their ability to successfully implement the advanced model, these 31 lead firms engaged a combined total of 56 firms as support enterprises (20 of which was facilitated by MADE to contribute directly to their outreach numbers, the other 36 firms were engaged directly by the lead firms to supporting them with other services). Of these 56, 32 had no previous working relationship with MADE.
Output Indicator 1.2 Number of poor farmers who use new or improved inputs as a result of facilitation by MADE (women in brackets) (cumulative)	53,495 (23,388)						Y5 result: ██████████, Y6 result ██████████ The result of new SHFs receiving improved inputs (mainly seed, herbicide, NPK, urea, inoculant, TSP, SA, pesticide, organic manure) and mechanized services (ploughing, harrowing, harvesting and shelling/threshing) from agribusiness partners is subject to multiple layers of validation In Y5 new SHFs reached amounted to ██████████ in Y6 ██████████
Output Indicator 1.3 Number of poor farmers supported by MADE to cope with the effects of climate change (women in brackets) (cumulative) ICF Indicator	47,784 (19,831)						Y5 result: ██████████, Y6 result ██████████ Support to climate change adaptation/mitigation based on Y5 and Y6 implementation covers the provision of improved seeds, inoculant and organic manure to SHFs and exposure to demonstrations through the model farms. 58% (64%) of new SHFs were deemed to have received climate change support based on milestone reports and % verification from the annual survey. These percentages were applied to new SHF entrants each year to obtain the indicator result.
Output Indicator 2.1 Number of SHFs accessing financial, credit, and/or business services through MADE support. (women in brackets) (cumulative)	35,809 (16,175)						Y5 result: ██████████, Y6 result ██████████ This indicator determines the number of new SHFs receiving input credit based on information gathered from partner milestone reports and end of year surveys. In year 5 this was determined as ██████████ and in Y6 as ██████████. A validation percentage of 55% (56% for female SHFs) is then applied to obtain the indicator result
Output Indicator 2.2 Number of new or improved services or products being provided to smallholder farmers or small-scale entrepreneurs as a direct result of MADE's facilitation (cumulative)	31						Y5 result: 3 Year 6 result 24 Specific services rendered by MADE partner firms and scored in this result include identification of viable support enterprises, provision of draft MoU templates, structuring of partnership agreements, relationship building. A total of 56 commercial partnership arrangements between lead firms and support enterprises were facilitated in Years 5&6 MADE partners were also introduced to various Business Network Platforms for

							improved access to new markets, new pest and aflatoxin control systems, technology, finance and capacity building opportunities.
Output Indicator 2.3 Percentage of surveyed market actors (who do not receive facilitation through MADE) who report positive perceptions of relevant business models supported by MADE (cumulative)	84%	85%	88%	90%	83%	na	Y5 result: 92%, Year 6 result 90% From a pool of 62 non-MADE supported agribusinesses in years 5&6, 20% were selected purposively and interviewed to determine their perception towards MADE's "advanced model". 10 the firms expressed knowledge/usefulness of the advanced model and have implemented some of the components albeit with adaptations. Only 2 firms admitted to not knowing about the model,
Output Indicator 3.1 Number of changes in regulation, policy and informal market rules brought about as a result of the programme (cumulative)	17	20	22	24	28	na	Y5 result: 5; Y6 result 6 Five additional changes in informal market rules were achieved in Y5 and a further 6 in Y6. These include the: increased use of binding formal agreements between MADE lead firms and their support enterprises; issue of performance-based contracts to FEAs; promotion of strategic commercial partnerships among agribusinesses; introduction of more responsive SHF selection criteria; introduction of inputs and services bundling and delivery to partner agribusinesses and improved use of GCX warehousing by agribusinesses and SHFs alike.
Output Indicator 3.2 Level of satisfaction of surveyed market actors with key aspects of commercial relationships facilitated by MADE (cumulative)	High	High	High	High	High	na	Y5 result: High Year 6 result High To measure level of satisfaction of surveyed market actors with key aspects of the MADE programme. A 5-point Likert Scale was used to identify and rank agribusiness firms' perception using 4 rating levels: unsatisfied, neutral, satisfied and very satisfied. 40 firms in Y5 and 20 in Y6 were included in the analysis. Results showed a combined average rating score of 23 points (Lead firms - 24 points, non-MADE supported enterprises - 22 points).
Output Indicator 4.1 Management cost per facilitation (intervention fund) £ spent	£0.17	██████	██████	██████	██████	na	For methodology see Vfm annex
Output Indicator 4.2 Facilitation (intervention fund) cost per beneficiary (cumulative)	£62.13	██████	██████	██████	██████	na	For methodology – see Vfm annex
Output Indicator 4.3 Amount of additional private sector investment leveraged (cumulative)	£16.2m	██████	██████	██████	██████	na	Y5 result: ████████ Year 6 result ████████ A total of £██████ was leveraged as additional investment from 33 lead firms engaged in Y5 with an additional £██████ from 31 lead firms in Y6.

Smallholder farmer numbers and geographical distribution

A total of 85,939 farmers received inputs and services supplied by MADE partner firms under their supported SHF schemes in Y6, up 30% on Y5 numbers. This comprised 44,380 smallholder farmers already registered in Y5 plus an additional 41,559 new entrant smallholder farmers (see logframe indicator Outcome 1a). The programme achieved its greatest extended reach in Upper West, with nearly a third of the total new beneficiary farmers located in this area. The areas with the next greatest intake of new farmers were Northern (24%) and Upper East (20%) – see Table 2, below. Total number of poor farmers and small-scale entrepreneurs who respectively experience higher sales and higher income as a result of MADE interventions now stands at 108,694 (47,191), up 60,530 (26,132) on the end of the Phase 1 baseline figure of 48,164 (see Outcome Indicator 1.3)

Actual numbers of direct beneficiaries are believed to be even higher. The logframe results report the verified number of targeted smallholder farmers agreed during the work planning exercises each year and for which partners receive MADE FEA operational financial support. These figures do not include farmers, over and above those target numbers, receiving complementary inputs and services from MADE partner firms. An additional 49,200 SHFs were reported in Y6, of whom 32,384 were receiving supplies managed through FEA service provision – a unique feature of the MADE advanced model (see Table 3 below). There was likely to be similar under-reporting in Y5. The cumulative total of SHFs benefiting directly from MADE partner firms over the life of the programme might well exceed 120,000.

During Y6, the partner firms increased the level of female farmers registered under their SHF schemes to 46%, up from 41% in Y5. Over a quarter of the total women farmers registered were with firms operating in the Upper West region. Taken together, Upper West and Upper East accounted for over 56% of the total women farmers benefiting from MADE. The region recording the lowest proportion of women farmers was Bono East. The situation with respect to new entrants was even more marked, with 21,398 (51%) female farmers registered in Y6 compared to only 20,161 male farmers. This is the first time that the programme has reported a figure for female farmer participation of greater than 50% - a considerable achievement given the initial target was set at only 25%.

Table 4: New entrant direct target smallholder farmers reached in Year 6⁷

REGION	Y6 DIRECT TARGET NEW BENEFICIARIES			Y6 DIRECT NON-TARGETED	Y6 TOTAL DIRECT
	FEMALE FARMERS	MALE FARMERS	TOTAL FARMERS		
New	21,398	20,161	41,559	42,900	84,459
Bono East	1,092	1,927	3,019		
North East Region	1,037	1,762	2,799		
Northern Region	4,014	5,592	9,606		
OTI Region	221	181	402		
Savannah	283	436	719		
Upper East	4,058	4,011	8,069		
Upper West Region	10,693	6,252	16,945		
Old	17,979	26,401	44,380	0	44,380
Bono East	2,061	3,645	5,706		
North East Region	1,406	2,955	4,361		
Northern Region	4,835	6,308	11,143		
OTI Region	927	1,175	2,102		
Savannah	348	703	1,051		
Upper East	3,934	5,455	9,389		
Upper West Region	4,468	6,160	10,628		
TOTAL	39,377	46,562	85,939	42,900	128,839

⁷ Numbers collected from the Partner Milestone reports, and verified through surveys

Table 5: New entrant direct non-target smallholder farmers reached in Year 6⁸

ADDITIONAL DIRECT SHFS REACHED	INPUTS	MECHANISATION SERVICES	ADVISORY AND GAP SERVICES	MARKET ACCESS	TOTAL
Number	44,808	20,012	32,384	23,066	49,200
%	91%	41%	66%	47%	100%

Area under cultivation and plot sizes

During registration for the 2019-2020 season, the agribusinesses recorded planned acreage of land under cultivation for each of the main crops, and assigned plot areas to each of the target smallholder farmers receiving inputs and services under the advanced model. The planned total acreage for Y6 is given in Table 20. Only targeted direct reach SHFs were included in this survey.

Table 6: Acreage under cultivation in Year 6⁹

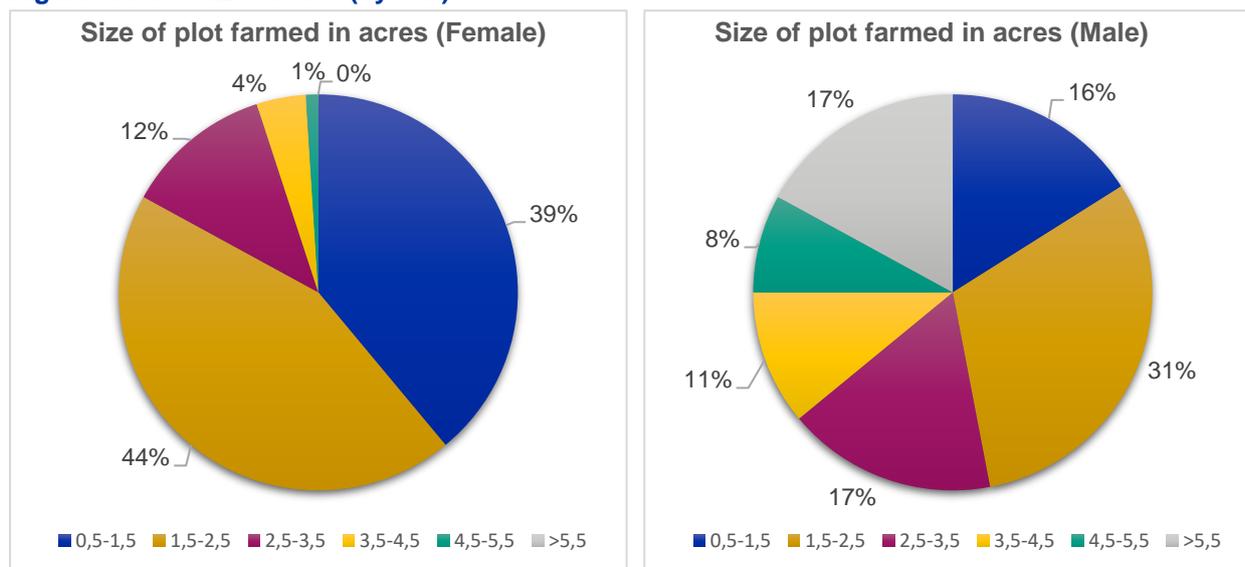
CROP	FEMALE FARMERS	MALE FARMERS	TOTAL FARMERS
Maize	37,774	39,477	68,503
Rice	12,582	21,124	3,3711
Groundnut	13,521	13,282	25,982
Sorghum	5,210	2,487	7,735
Soybean	15,240	17,101	28,228
Onion	137	403	540
Tomato	144	387	531
Cabbage	140	372	512
Chilli Peppers	69	159	228
TOTAL ACRES	84,816	94,792	165,970

The actual plot sizes of the main farmed crops reported during the subsequent year-end survey varied considerably from the registration details collected in the milestone reports. Survey data showed a much greater variation among the farmers, with women consistently cultivating smaller plots of land, across all value chains. Eighty-three percent of women farmed plots of 2.5 acres or less, with almost half of these operating on plots of 1.5 acres or less. The largest plot farmed by a woman was 5.5 acres. In comparison, less than half the male farmers farmed plots of 2.5 acres or less, with only 16% operating on plots of 1.5 acres or less. Almost one fifth of men (17%) farmed on plots larger than 5.5 acres, with 4.5% of men reporting to farm plots larger than 10 acres.

⁸ Numbers collected from the Partner Milestone reports, and verified through surveys

⁹ Numbers collected from the Partner Milestone reports

Figure 7: Pilot size of SHS (by sex)



This restricted access to land has had an impact on the income gains realised by women compared to men, even where women achieve greater yields.

Targeted crops

Most of the smallholder schemes operated by MADE partner firms involve the production of five main crops: maize, soybean, sorghum, rice and groundnuts, with a small but growing number of firms using their outgrowers to produce onions and vegetables during the off-season. While all of these crops were farmed by both sexes, rice (66%) and maize (58%) were predominantly farmed by men, sorghum and soybean were more equally distributed between the sexes, while groundnuts were farmed predominantly by women (66%). (See Figure)

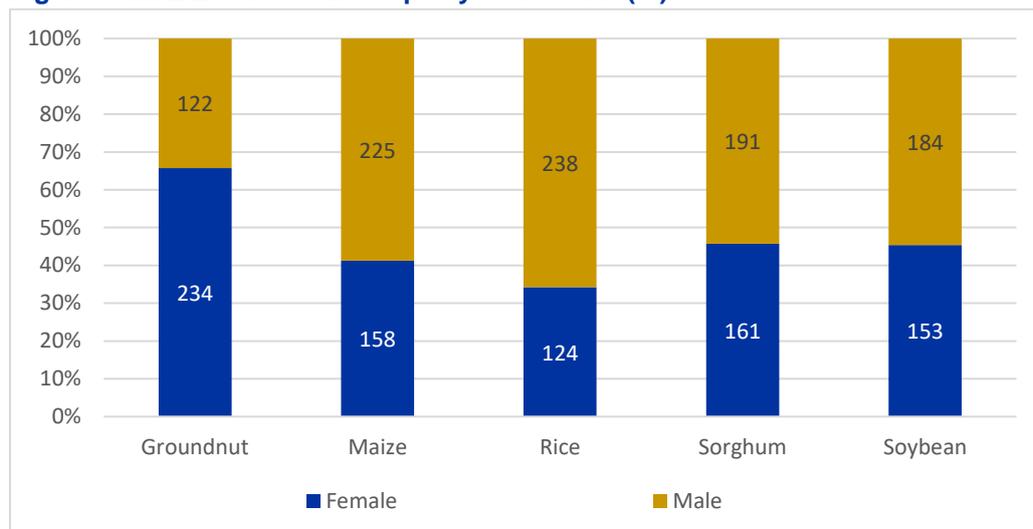
Rice and maize were reported to be the most commercially farmed of the five crops, with larger tracts of land being dedicated to these. Fewer women, with limited access to larger sized plots, farm these crops commercially.

Table 8: Acres of main crop cultivated - plot size of SHF by crop, by sex (%)

ACRES	RICE	MAIZE	SOYBEAN	SORGHUM	GROUNDNUT
Female	34,3%	41,3%	45,4%	45,7%	65,7%
0,5-5,5	100,0%	98,7%	100,0%	99,4%	100,0%
5,5-10,5		0,6%			
10,5-15,5		0,6%		0,6%	

ACRES	RICE	MAIZE	SOYBEAN	SORGHUM	GROUNDNUT
Male	65,7%	58,7%	54,6%	54,3%	34,3%
0,5-5,5	81,5%	69,3%	87,0%	88,0%	95,9%
5,5-10,5	11,8%	23,1%	8,7%	10,5%	4,1%
10,5-15,5	3,8%	4,9%	2,7%	1,6%	
15,5-20,5	1,3%	1,3%	1,1%		
20,5-25,5	0,4%	0,4%	0,5%		
25,5-30,5	0,8%	0,9%			

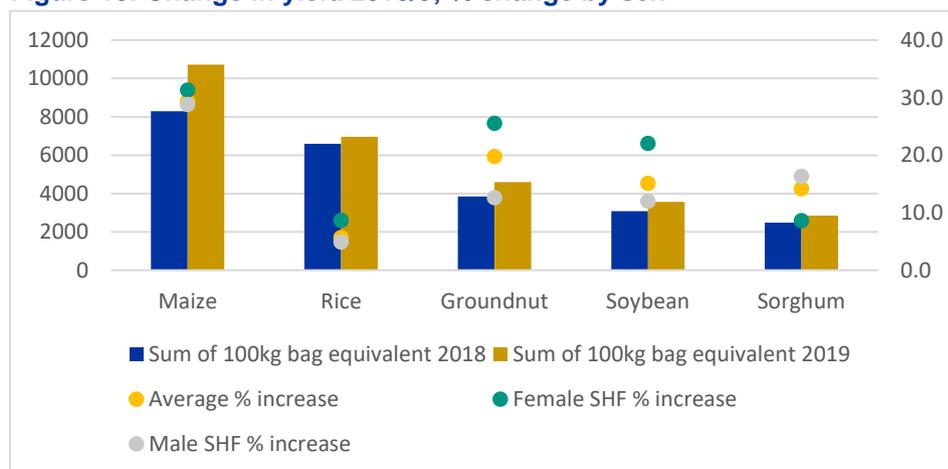
Figure 9: MADE's five main crops by sex of SHF (%)



Yields and productivity

By accessing inputs, advice and services from lead firms and their respective support enterprises, smallholder farmers experienced increases in yield between the 2018-19 and 2019-20 harvests. The largest increase in percentage terms was for maize, followed by groundnuts and soybean, (Figure). Women SHFs experienced higher yield increases than their male counterparts in maize, rice, groundnuts and soybeans.

Figure 10: Change in yield 2018/9; % change by sex



Changes in yield have been achieved through the provision of high-quality inputs, advice and services to smallholder farmers through the advanced model. Ploughing (80%) and threshing/shelling (42%) are the mechanisation services in highest demand.¹⁰

Source of services received

There is no strong evidence from the questionnaire survey that these services are being provided directly or exclusively by the MADE lead firms or support enterprises (see Table 6). However, access to mechanisation services has increased in Y6, suggesting that lead firms are drawing down services from specialist providers and encouraging farmers to pay for those services at source rather than as

¹⁰ Despite high uptake of ploughing services by beneficiary farmers, a common refrain from SHF focus group discussions was that there were insufficient ploughing services on offer by the lead firms. A number of focus group discussions reported that their FEAs should be able to offer ploughing services, indicating that there was either a breakdown in communication regarding the services offered, or that in spite of this service being offered, there was still an unmet demand.

part of the bundle offered under credit terms. Only 3% of SHFs interviewed reported access to mechanised harvesting supplied directly by lead firms in the 2019-20 harvest. Although this was up 1% from the previous year, it still represents a major constraint and an aspect of the advanced model that still needs further attention. Only rice farmers reported harvesting their crop by mechanisation, and only 12% of rice farmers. This is unchanged from the previous year. Only 9% of SHFs report receiving post-harvest support from the lead firms and their support enterprises, with over 80% reporting their use of another service provider.

Table 11: SHF source of mechanisation services by crop, based on interviews

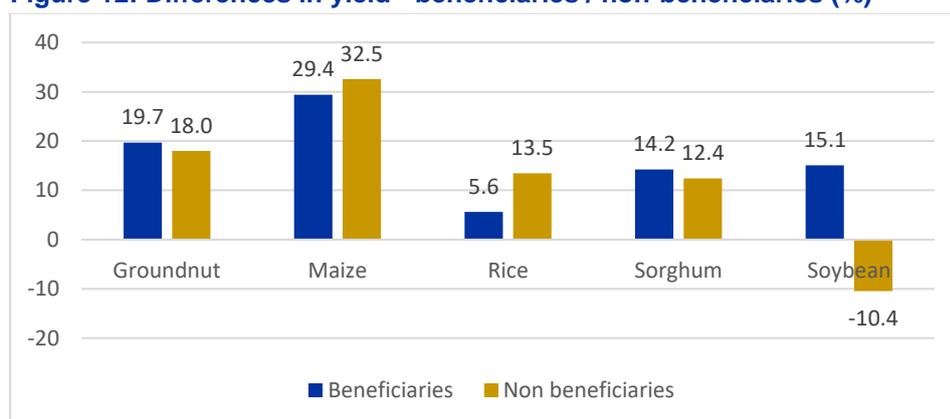
SERIVCES OFFERED	RICE	MAIZE	SOYBEAN	SORGHUM	GROUNDNUT	TOTAL
Lead firm	0.60%	2.70%	40.40%	0.90%	0.50%	9.10%
Service provider	21.70%	30.70%	12.90%	12.60%	3.20%	81.10%
Own personal equipment	2.00%	0.20%	1.80%	0.60%	0.80%	5.50%
Unknown	0.20%	0.60%	0.70%	2.50%	0.20%	4.30%
TOTAL %	24.56%	34.28%	19.81%	16.61%	4.74%	100.00%

In almost all cases, SHFs were provided with inputs and services in exchange for a share of their harvest. The 2019 mid-year survey revealed that only 32% of the farmers who paid for land preparation, paid in cash. The remainder hired ploughing services with an expectation to pay for the services in-kind, after harvest.

While the actual percentage of harvest paid out for inputs (to the service or credit provider) would have differed from farmer to farmer, on average maize farmers paid more for their inputs than other farmers. Female maize farmers paid between 20% and 25% of their increased yield for their inputs, while their male counterparts paid 40% of their yield for the same. The high price of improved maize and rice seed varieties and fertilisers were the main reason for the elevated production cost.

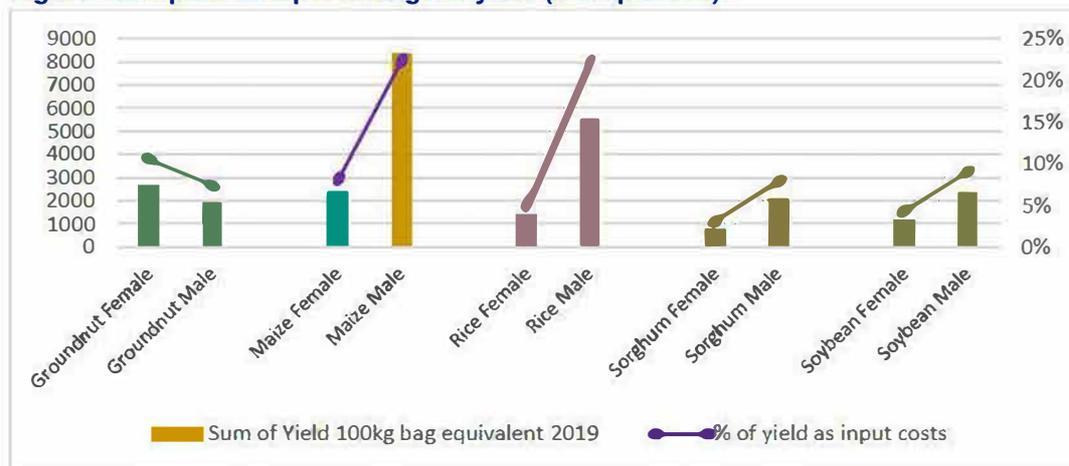
In comparing beneficiaries and non-beneficiaries, the former group showed substantial increases in soybean yields over the non-beneficiaries. The beneficiaries showed marginal increases in yield in groundnuts and sorghum over non beneficiaries, and a marginal comparative yield decrease in maize, with a more substantial comparative decrease in rice. (Figure). The discrepancy in the case of rice might be explained by the predominant production system being used by the farmers interviewed. Lowland rice production practiced by most of MADE's partner firms produces substantially lower yields than flooded rice fields, which are appearing in the north eastern region as a result of large-scale dam and irrigation schemes.

Figure 12: Differences in yield - beneficiaries / non-beneficiaries (%)



Female beneficiary farmers generally reported paying less for inputs than their male counterparts (with the exception of female groundnut farmers) and yet experienced higher relative yields in all crops. This comes as no surprise since the average plot size for female farmers is only half that of the average male farmer.

Figure 13: Inputs as a percentage of yield (x crop & sex)



Income Gains

Based on the sample of 1,790 farmers, we can assume that all farmers reached by MADE experienced a positive income change. Income change was four times the targeted £[redacted] per farmer. This is in spite of sorghum farmers experiencing a small reduction in yield in the last harvest (See Figure 5). The average income increase for female farmers was roughly half that of male farmers, reflecting the smaller farm plot sizes. This is in spite of male farmers securing lower overall yields across all commodities compared to their female counterparts (See Figure).

Table 14: Yield and income per crop

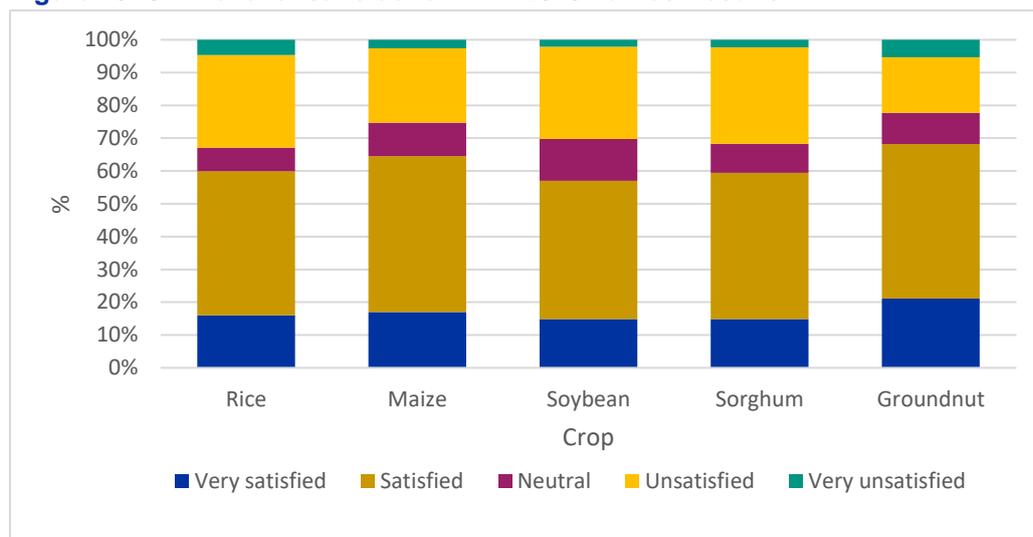
VALUE CHAIN	TOTAL YIELD (x 100 KG)	TOTAL COSTS (x 100 KG)	NET BAGS	SELLING PRICE (GHS/ 100 KG)	GROSS INCOME (GHS)	INCOME (£)	INCOME (£) PER FARMER
Groundnut	4,597.40	679.00	3,918.40	225			
Female	2,651.80	350.50	2,301.30	225			
Male	10945.60	328.50	1,617.10	225			
Maize	10,724.30	4,045.50	6,678.80	100			
Female	2,358.00	557.50	1,800.50	100			
Male	8,366.30	3,488.00	4,878.30	100			
Rice	6,964.20	997.00	5,967.20	140			
Female	1,427.60	300.00	1,127.60	140			
Male	5,536.60	697.00	4,839.60	140			
Sorghum	2,839.80	451.30	2388.6	150			
Female	749.60	79.30	670.40	150			
Male	2,090.20	372.00	1,718.20	150			
Soybean	3,555.60	648.70	2,906.90	220			
Female	1,178.60	236.90	941.70	220			
Male	2,377.00	411.80	1,965.20	220		69,731.51	
					Average Income (£) / Female SHF		
					Average Income (£) / Male SHF		
					Average Income (£) / All SHFs		

In calculating income change, the total volume of yield for each crop was determined. A large majority of the farmers received some or all of their inputs and services on credit terms, with payment made in bags of produce at time of harvest. Pay-back levels were typically between 14% and 18%, except in the case of maize where reported repayments amounted to 37% of total production. The prevailing local market price determined the equivalent value in bags. The weight of in-kind credit repayment was subtracted from the total weight of production to determine net yield. The value of the net yield was calculated using the same prevailing local market price. An exchange rate of 6.25 (see logframe definitions) was used to convert Ghanaian cedis into pounds sterling.

Levels of satisfaction

SHFs reported higher levels of satisfaction with their 2019 harvests in comparison to their 2018 harvests, with over 50% of farmers for each value chain reporting that they were either satisfied or very satisfied with their yields (See Figure). This is in spite of the fact that many regions experienced drought conditions for several weeks after the first onset of rains. The late rains which delayed harvesting in some areas might have been a compensating factor.

Figure 15: SHF level of satisfaction with 2019 harvest results



Jobs Created

In addition to the 160 new FEA positions filled at the start of Y6, a total of 1,455 new jobs have been created by MADE’s partner firms during Phase 2. Almost 50% of those are in the Northern region. See Table 24.

Table 16: Number of new jobs created

REGION	NUMBERS OF NEW POSTS FILLED		
	MALE	FEMALE	TOTAL
Brong-Ahafo	68	19	87
Northern	645	72	716
Upper East	270	46	317
Upper West	283	31	314
Volta	19	2	21
TOTAL	1,285	170	1,455

SECTION 6. KEY LESSONS LEARNED FROM THE SURVEYS

Over the course of Phase 2, MADE has supported a group of lead firms and support enterprises that have demonstrated a willingness to adopt key elements of the advanced model. Support has focused on the strengthening and operationalisation of the farm enterprise advisory service, as well as introducing new technologies and providing business development services. The growth in commercial B2B partnerships to enable lead firms to satisfy the criteria necessary to receive MADE support has led to the emergence of an ever-growing number of commercial partnerships – which are brought into the programme and benefit from it, but are not direct recipients of grant funds.

As part of its planned exit strategy, MADE introduced a scaling back of financial support to lead firms in respect of their FEA services. The operational support provided through the programme – accounting for 29% of the total cost of maintaining the field presence of FEAs in Y5 (see Section 3, Table 1) – was historically spread evenly across the year (pre-season, seasonal beginning, mid-season and post-harvest activities). This arrangement was amended in Y6, leading to a step-by-step reduction in support, with only 10% of the FEA operational cost being borne by MADE in Q4.

The mid-year and end-of-year surveys were designed to verify the extent of inputs and services being provided by MADE partner firms (lead and support enterprises) under the grant arrangements and to capture the perceptions of how effectively the firms were operating and the impact of the programme on farmer yields and incomes. The selection of firms captured by the surveys took into account the geographical spread of the businesses, the scales of operation and the types of commodities produced and marketed. The results obtained from these surveys have helped to capture information necessary to support the milestone report findings and complete the logframe results. The Y6 survey findings have also exposed key lessons learned from Phase 2 that can be used to shape future programmes. An sample of those lessons is presented below.

Lead firms report a variety of benefits from working with MADE

All lead firms reported an increase in client (SHF) numbers, turnover and profitability during Y6, attributed to the following, in no particular order:

- Increased scale in terms of the provision of input supplies
- Increased scale in terms of the aggregation of harvest
- Improved and increased offering of mechanised services
- A more efficient and targeted distribution of inputs
- Increased demand for input-related advice
- Expansion into new regions and in some cases offering new products and services
- Better data management

All of these input and service offerings serve to increase SHF yield and therefore in turn increase a company's aggregated volumes and profit.

In many cases, lead firms reported striking increases in outreach. One LF reported that:

“The business has increased its scale of production. Before, the business was working with just a little below 1,000 SHFs and now the business works with over 5,000 SHFs.”

Lead Firm, Upper West

LFs report secondary benefits towards improved client-company relationships

As a secondary benefit, some companies report that improvements in yields have helped build the level of trust between the SHF and the company. One lead firm reported that:

“SHFs are adopting GAPs, using input and services at the right time and the right way, increasing their yield and are therefore more willing [...] to sell back more to the business.”

Lead Firm, Upper West

In fact, SHFs in general have expressed high levels of satisfaction with their lead firms and support enterprises. See figures 7 and 8 below.

Figure 17: SHF level of satisfaction with lead firms

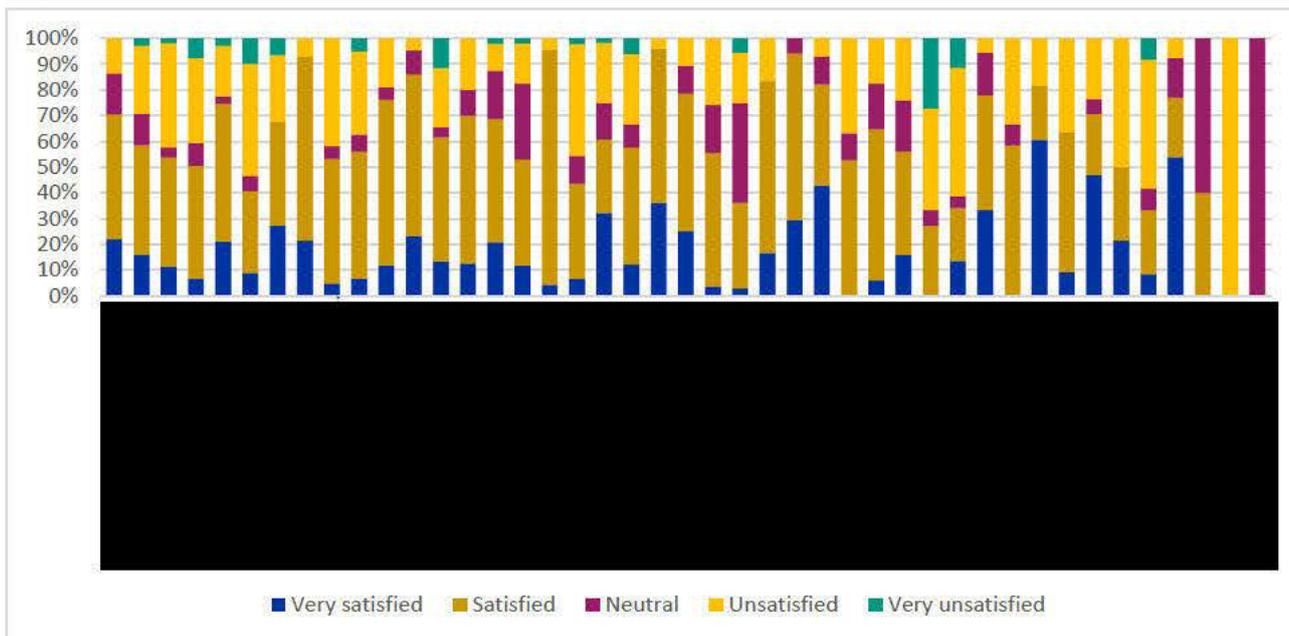
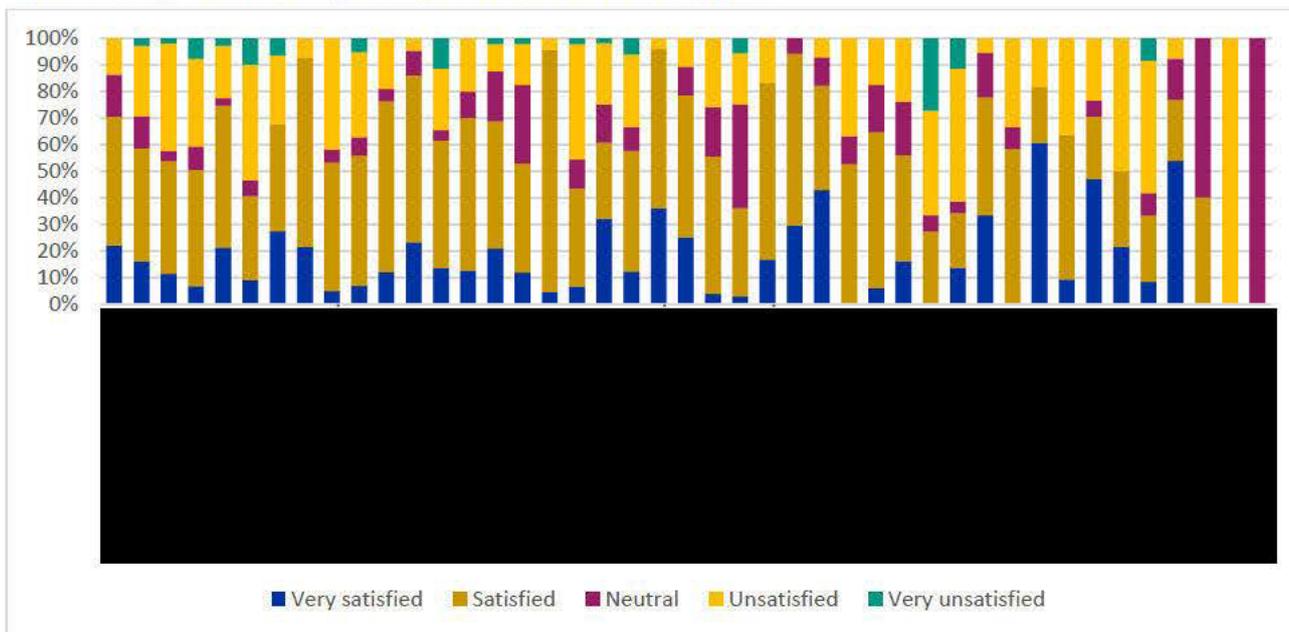


Figure 18: SHF level of satisfaction with support enterprises



Partner firms reported that better data management also means that companies have improved their monitoring of SHF production and improved their on-the-ground training of farm enterprise advisors (FEAs).

LFs attribute many of these benefits to working with the MADE programme

A number of lead firms directly attribute this improvement in efficiency and improved business relationships to MADE and the advanced model it introduced. One company stated that:

“Working with MADE has grown the business. The FEAs ... expanded to new geography and increased produce stock through high recovery rates and extra purchases [sic].”

Lead Firm, Oti

There is additional anecdotal evidence that non-beneficiaries would like the services offered to the beneficiaries, but report that there is no one to offer the same services to them. There is also anecdotal

evidence that SHFs linked to MADE-supported businesses are requesting more services from their service providers, indicating a latent demand to expand the bundle of services even further.

Lead firms deliver the Advanced Model to meet the demands of smallholder farmers

Over 80% (25/31) of the lead firms offer inputs (including seeds) to SHFs. These inputs include the following:

- Seeds (14 companies)
- Fertiliser (12 companies)
- Herbicides (7 companies)
- Pesticides (5 companies)
- Equipment and protective gear for spray service providers (1 company)

Of the companies offering multiple inputs, some reported that they provided the minimum required by the SHFs. Others reported that SHFs asked for integrated inputs and this allowed the company to provide a variety of inputs to the same client base for increased credit. Some companies reported experimenting with the market, while one company reported that it increased its input offering as a result of:

“Increased confidence after seeing what the MADE model could offer.”

Agribusiness, Upper East

Lead firms need to better meet the demands for some services required by smallholder farmers

All of the SHFs reported that they use the available inputs offered by LFs to varying degrees, with fertiliser and seeds in highest demand, followed by a lesser demand for herbicides and pesticides. This demand is therefore well-met by the availability of inputs from companies.

In contrast, there is a slight mismatch between the service-related offerings by the partner firms and the demands of the SHFs. For example, there is a high level of demand for, and use of, threshing services – but this service is only offered directly by two companies. Furthermore, only 23 partner firms report that they offer aggregation services, but in-kind payment by yield is reported by SHFs as the most popular method of paying for inputs. The responses from SHFs do not take into account the services organised by lead firms but delivered by support enterprises.

It is likely that the discrepancy between the demand and offer of these services reflects an error in reporting from the partner firms, who do in fact offer this service but did not report on it. Further surveys and interviews must therefore be more explicit in asking lead firms to report on different types of services.

Lead firms are beginning to offer climate-related support

In the face of increasing variability in temperature and rainfall, a number of new alternative practices or services are being offered by firms to assist their SHF clients to better cope with climate change. Seven partner firms now offer advice on climate-smart land preparation, such as minimum or zero tillage and the use of organic compost. Five companies offer early maturing seeds that are more amenable to growing seasons cut short by drought. Three firms have invested in climate-smart equipment (rippers, planters, etc.) and are offering these services to SHFs. All of these practices have the potential to maintain or increase the yields of SHFs facing changing climatic conditions.

Support enterprises provide additional support between lead firms and smallholder farmers

Lead partner firms work with a number of support enterprises, which act like agents of the lead firm in the field. Support enterprises offer a range of services such as GAP advice, capacity building and aggregation services, many of which complement the services offered by lead firms.

Formal agreements ensure that lead firms and support enterprises work together well

Informal rules, which were the norm when the programme first began, are gradually being replaced with the introduction of formal contracts between parties. The relationship between the lead firms and the support enterprise were, in all cases surveyed, governed by a formal agreement which details the areas of

responsibility and performance for each of the parties. The majority of lead firms reported either satisfaction or high levels of satisfaction with the performance of their support enterprise partners.

Anecdotal evidence suggests that support enterprises can provide timely support to lead firms to allow for additional flexibility during busier times in the agricultural year. In one case, a northern support enterprise assisted a lead firm by providing much-needed ploughing services to lead firm SHFs. The lead firm was pleased at how the support enterprise “supported us to provide tractor services to our SHFs and so about 90% of our farmers got their farms ploughed on time.”

Only three lead firms reported issues with their support enterprise. One lead firm in Upper West reported dissatisfaction with the performance of one of their support enterprises, stating that they felt that the contract did not work for either party and that there would be no working relationship moving forward. Two other cases of neutral expressions of satisfaction, with no clear rationale other than stating the relationship between the two parties was functioning.

Support enterprises also work closely with other field agents

Support enterprises in turn work with farm enterprise advisors (FEAs) and business development advisors (BDAs) as agents to deliver their products and services. All support enterprises report being either satisfied or very satisfied with their FEAs and BDAs, with just one exception. One support enterprise in the Upper West reports that FEAs were not complying with the contract and were not recovering inputs from SHFs. This matter appears to be resolved, with the SHF now receiving support from better-qualified FEAs.

Progress towards systemic change

Systemic change is a function of both scale and sustainability, and there are several indicators of the model introducing components that will lead to systemic change. While sustainability is mentioned in the paragraphs above, there are several indicators of this model achieving scale. One important indicator is the report from lead firms that in the last year, using the MADE model, they have serviced 49,200 farmers over and above the SHFs reported to MADE. (See Table 25 below).

Table 19: Smallholder farmers reached by lead firms and supporting enterprises above MADE targets

ADDITIONAL SHF REACHED	INPUTS	MECHANISATION	GAP & ADVICE	MARKET ACCESS	TOTAL
Number	44,808	20,012	32,384	23,066	49,200
Percentage (%)	91	41	66	47	100

Lead firms across regions have invested their own funds in business growth

A total of GHS [REDACTED] has been invested by all the firms in expanding and growing their businesses. Production costs account for 37% of this figure. Breaking this down further, over 80% of this investment has come from lead firms, with the balance from support enterprises. (See Table 26 below).

Table 20: Investments

PRODUCTION COSTS	INPUT COSTS	INVESTMENT IN OTHER	TOTAL (GHS)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Companies have implemented changes

Aside from investing their own resources in expanding their markets and reaching new clients, partner firms have also begun to implement a number of changes in the way in which they apply the advanced model and conduct operations. At least eight different types of practices have been recorded as being implemented by partner firms in the past 12 months. Several lead firms have reported applying the lessons in business expansion from MADE to other crops, including vegetables, cassava, mango and shea, as well as into livestock farming. Support enterprises are beginning to implement aspects of the model on their own initiatives. While

this number is small (17 mentions of replication), it is an early indication of changing behaviour by support enterprises to take on more responsibility.

Several lead firms reported tweaking the current model to better suit their circumstances. For the BDA and FEA roles, some lead firms have changed the remuneration structure of BDAs so that they are commission-based rather than fee-based. Other lead firms have trained BDAs to act as lead farmers and also trained lead farmers to become FEAs.

Additional changes have been made to activities involving SHFs. Some lead firms have begun mandatory weighing when purchasing crops. A number of firms have set up community-based aggregation centres, often under the guidance of their lead farmers. In addition, demonstration farms have been established in many areas and have proved to be a popular means of promoting GAPs and selling inputs.

Finally, there are reported changes within the types and conditions of services offered by lead firms. Several firms have described an increase in loan and credit facilities with a reduction in prevailing interest rates (although two respondents mentioned that interest rates have increased). There have also been reports of changes to formal rules such as subsidies, with mixed reports of impact – in some cases an increase in subsidies has led to an increase in bureaucratic processes.

Companies have hired additional staff to keep up with demand

There are 56 instances of lead firms and 15 instances of support enterprises hiring more staff (sales staff, BDAs and FEAs) to meet their business demands. In some cases, lead firms have also reallocated staff to provide more support where it is needed. These observations suggest that companies benefit from their business plans of expanding to new areas while applying the MADE model. The total number of new staff hired to accompany business growth in Y5 is given in Table 27. In addition, 160 new FEAs were recruited in Y6, of whom 138 are male and 22 female.

Table 21: Additional staff hired to accompany business growth

REGION	MALE	FEMALE	TOTAL
Brong-Ahafo	68	19	87
Northern	645	72	716
Upper East	270	46	317
Upper West	283	31	314
Volta	19	2	21
TOTAL	1,285	170	1,455

Generally, the survey results suggest that the MADE model is working well, with lead partner firms and support enterprises mostly reporting high levels of satisfaction with the model, and their roles and responsibilities. In most cases, it appears that the relationship will continue past the programme lifespan, which demonstrates its likely sustainability. One support enterprise reported that:

“I was in business before this MADE thing, but... we are one now. I’m thinking of a possibility of ... merging these businesses into one big company. I see our partnership much bigger than I thought [sic].”

Support Enterprise, Bono East

SECTION 7. ADAPTIVE MANAGEMENT APPROACH

This section shows how MADE's staffing structure has evolved over the two-year period to better respond to the changing technical needs of the programme and improve the delivery of programme objectives and results. The section also considers how improvements in management processes, such as the introduction of quarterly 'pause and reflect' sessions, activity-based budgeting and structured reporting calendars, have led to a more flexible and adaptive management approach and enabled more responsive modifications in the scope of the programme.

TEAM STRUCTURE

The MADE staffing structure was radically changed at the beginning of Phase 2 and has continued to evolve in response to the delivery needs of the programme. In addition, Nathan Associates' London-based team has had to respond decisively to unexpected staff departures by stepping in and backstopping key areas of technical and operational work. Adapting to the programme needs has not always been easy, and many team members struggled to modify their way of operating. However, the majority of team members have been resilient and have learned how to utilise their transferable skills to fit the different required functions. Overall, the MADE team has been able to adapt its management functions and tailor its support role in a way that most effectively accompanies the programme needs.

When the business plan for Phase 2 was approved in July 2018, MADE had just undergone an internal in-depth "programme and individual performance review" to document strengths and weaknesses and consider what had worked and what could have been done better during Phase 1. The review highlighted that the programme team had done well in adapting to changes in scope and had a solid understanding of the market systems approach. However, documentation of progress was systematically delayed and of low-quality. The team also felt siloed from decision-making, and while the programme design and delivery were generally good, the processes used were convoluted and not properly structured.

The internal review concluded that roles, responsibilities and authorities needed to be re-defined and that a senior management team structure needed to be established as a platform for sharing ideas and experience, and to speed up planning and implementation. The review recommended monthly management team meetings covering interventions and activities. When the new programme manager joined the team in August 2018, she also introduced quarterly pause and reflect meetings to help determine and track annual implementation work plans and to review achievements against logframe indications and deliverable targets. These regular strategy meetings also highlighted the benefit of closer engagement with DFID and the role they can play in regular in-year monitoring of programme performance to bring about necessary shifts in management focus and intervention balance. The meetings also served to improve interaction with other development partner programmes.

Team leadership

Overall, the team leadership has undergone significant changes throughout the two years of Phase 2. This was a result of programme needs, but also in response to individual circumstances changing unexpectedly. The team leader was retained at the commencement of Phase 2 with overall responsibility for the delivery of the MADE programme, but with a radically changed scope of work. In response to the need to raise the profile of the programme and improve engagement with key stakeholders, it was agreed that he would be accountable for the development and delivery of the communications strategy and spend most of his time in Accra. A deputy team leader was to be appointed to ensure the smooth and effective delivery of field-based activities run out of the Tamale office.

Soon after the launch of Phase 2, the team leader resigned for health reasons and the nominated deputy team leader was invited to take on the role. After a short period in charge, it became obvious that the deputy team leader was unable to satisfy the requirements of the programme, and he resigned in September 2018. Given the short-period of time left of the programme and the added value of a team leader in its final year, Nathan Associates proposed elevating the roles and level of effort of the programme manager and chief technical advisor to take on the additional responsibility and represent MADE at key events. Around this time, the new deputy team leader was given additional responsibility for ensuring operational integrity and given an elevated

role of supervising the full Tamale-based team. When the new deputy team leader herself resigned in October 2019, she was replaced by a programme coordinator to coordinate the final four months of programme activities and support the close-out of Phase 2.

While the changes and team member transitions were not always smooth, the programme director worked in close collaboration with the full team to ensure that this did not have an impact on implementation or lead to slow-down on approvals. Whenever there was a gap in team members in senior leadership, either the project manager or the chief technical advisor stepped in by being in Tamale to provide continuation to the team and ensure that delivery continued on schedule. The three members of the London-based management team also held one-on-one meetings with each team member to gauge their response to the staffing changes: thus, effectively responding to human resource needs.

As the programme has changed, the market development team, specifically, has had to learn to adapt their *modus operandi* to meet the needs of the activities in the programme. While the team has demonstrated a new ability to take on elevated roles, the changes in functions that have occurred in the past two years required adjustments that were not always easy for all the team members involved.

Following the performance review, the decision to break down the silo structure allowed for a radical restructuring of the market development team at the launch of Phase 2. The two senior market development specialists were reassigned as market development managers, with responsibility for leading separate teams of market development specialists, each assigned to deliver against defined elements of the results framework. Market development team responsibilities expanded from partner selection, engagement and delivery of workplans to the management of cross-cutting areas such as monitoring and evaluation and gender inclusivity. At the commencement of Phase 2, the market development team comprised seven market development specialists managed by the two market development managers.

The shift in roles from direct implementation to management required a significant amount of oversight and support from the London team, and this became more noticeable as the programme entered its final year with a downsizing of the MD team and the appointment of short-term consultants. Many of the activities experienced initial delays while the two market management managers gained the confidence necessary to take on a more analytical and strategic approach and some of the specialist areas of support to partner firms, such as FEA and business development training and the introduction of innovative technologies required a much greater hands-on role from the technical specialists at the London office than originally envisaged. However, despite the early delays, these changes to team composition and structure have allowed the successful completion of all planned activities during phase 2 within budget and on schedule.

IMPROVED PROCESSING FOR REPORTING

Introduction to work planning workshop

During Y5 Q2, the business plan for the implementation of the programme's no-cost extension was submitted to and accepted by DFID. Once this was agreed upon, programme manager and chief technical advisor conducted an in-depth work planning session in the Tamale office for all the in-country staff. This resulted in the following:

- Revised results framework for the extension, based on the business plan
- Workplan for Y5, with clear roles and responsibilities for each task
- Revised quarterly report template, based on activities
- Reporting calendar with set dates and responsibilities for the quarterly reporting process

This participatory session allowed buy-in from all members of staff and served as an induction session for the new team leader. This was a crucial point for the team, as it clarified expectations and provided a clear structure that they would follow throughout Phase 2. Prior to this work planning process, a lot of the reporting was focused on the team leader; however, during this meeting the team agreed to take more ownership of their activities, which included writing their respective sections for DFID reporting purposes.

Introduction of ‘Pause and Reflect’

The act of ‘pausing and reflecting’ on a regular basis has helped the team identify what is working and what needs adapting. This has also given the programme time and opportunity to consider the impact of changes in the operating context and environment. This notion of holding regular strategic review meetings stemmed from the gap left after the steering committee meetings were cancelled at the end of Phase 1 (the 2018 annual review recommended a substantial review and DFID formally cancelled the SC format and asked MADE to introduce a new structure). The MADE Pause and Reflect was adopted from a similar practice used in USAID programmes under their “Collaborative Learning and Adaptive” framework. It has helped significantly to improve management processes under MADE.

The first ‘pause and reflect’ meeting followed the Y5 work planning session held in November 2018. It was a four-day session involving the full MADE team, chief programme advisor and an HQ private sector expert, and facilitated by the programme manager. The event allowed a full review of progress achieved in the implementation of Y5 Q3 activities, the tracking of lessons and achievements, an opportunity to make amendments where appropriate and necessary, and a review of the extension phase logframe targets. During the workshop, the team revised the work plan and logframe and highlighted key learnings to be integrated into the Y5 Q3 report.

The next ‘pause and reflect’ session was held in February 2019, facilitated by the UK-based programme director, the chief programme advisor and the programme manager. For the first time, MADE’s senior responsible officer participated in this meeting. He contributed to the review of programme interventions for Y5 and provided strategic inputs into the planning of interventions for Y6. The inputs and comments received provided the required guidance for formulating the Y6 workplan.

While ‘pause and reflect’ is not a concept invented by MADE, the programme adopted and adapted it to fit its needs and reporting requirements. The meeting became a way to review progress in a more holistic way and allowed for key strategic thinking on each activity. In addition, these meetings meant that DFID was able to have an open and more transparent dialogue with the implementing team, which allowed for faster changes and appreciation of opportunities and constraints. The team gained confidence in presenting their activities on a quarterly basis and began to feel at ease disclosing their challenges with both DFID and the London-based management team. ‘pause and reflect’ became a tool of escalation for the MADE programme, as well as a platform for team thinking to resolve barriers each team member might be facing with his/her activity.

Introduction of activity-based budgeting system

Based on the results of a rigorous planning exercise and an identified gap in financial management, the programme introduced a new system for budgeting and tracking expenditures by each activity. Responsibilities for delivering each activity were assigned to activity managers, who were also responsible for expenditures assigned to their activity.

This was an area that saw some improvement throughout Phase 2. However, it remains the largest problem area under MADE. Team members had difficulty taking financial ownership, and the transition from a very siloed team, where operations and technical management did not often come together, led to difficulties in ownership over budgetary expenditure. The team struggled heavily with this area of work.

Nonetheless, having an activity-based budget allowed for clearer reporting to DFID, permitted a greater appreciation for delays in spending, and provided numerical support for analysing progress in delivering key areas of work. Having this new process also allowed the management team to be able to more effectively query the correct activity manager when issues and varies would arise, which was not possible under the sector-specific budgeting system previously adopted under Phase 1.

Introduction to reporting calendar

Prior to Phase 2, MADE did not have an agreed reporting structure. As a result, reporting to DFID was systematically delayed, and would be subject to the team’s availability to draft the report. Many times, the approval of these reports would also be dragged out for months, which impacted implementation of key activities.

The new management team for MADE Phase 2 introduced a sounder reporting structure, which allowed for more effective programme delivery. Once the work products in the Y5 work plan were approved, the team began to put together clearer reporting calendars, which involved submitting to DFID within 15 days of the end of each quarter. As the 'pause and reflect' meetings progressed, the team began to hold these meetings strategically the week before the quarter ended. This enabled all team members to agree on the main lessons to report on for each activity, and to capture progress to date as a team. This learning process from the 'pause and reflect' sessions allowed for reports to improve steadily as the programme delivery progressed.

SECTION 8. RISK ASSESSMENT

This section outlines the key risks and impact probabilities faced by the programme during Phase 2 and considers the measures taken to mitigate those risks.

The main risks to the programme identified in the business case stemmed from uncertainties over the political and economic environment and the fact that the market systems (or M4P) approach adopted for MADE was relatively new in Ghana at the time. Poor response by market actors to increased market opportunities was the only risk area identified as having high impact, and none of the risks identified were considered to have a high risk of probability. The potential high impact market response risk was to be mitigated during the inception phase through market analysis and the adoption of a dynamic and flexible approach, allowing for adaptation to expand into growth areas and exit from under-performing ones.

Conflict in the region, a weak underpinning investment climate, climate change and proliferation of NGO activity in the region potentially undermining the market systems approach were all rated as medium impact.

Table 22: Business Case Risk Matrix – Start of Programme

RISK DESCRIPTION	IMPACT and PROBABILITY	MITIGATION MEASURES
Conflict and instability in the region undermine programme implementation	Medium Low	Conflict in northern Ghana is in isolated areas. The programme will not focus on the few areas with significant conflict risk
The underpinning investment climate in the region does not improve, with government interfering in markets, weak policy and regulation, and poor coordination of DPs and activities	Medium Medium	DFID has engaged government in the design, and strategic partnership with SADA should help to mitigate this risk. GoG's private sector strategy, which DFID also plans to support, focuses on enabling the private sector rather than the government acting directly, which may help to bolster support for this programme's approach
Poor response by market actors to increased market opportunities	High Low	Inception phase will establish in detail market weaknesses and opportunities. M4P inherently dynamic and flexible approach, allowing for adaptation to expand into growth areas and exit from under-performing ones
Climate change through extreme events e.g. (floods, droughts and storms) disrupts agricultural production and supply chain logistics in selected product markets	Medium Medium	Will work closely with other programmes addressing disaster mitigation, and coordinate with other programmes such as AgDevCo and SADA to ensure risks to infrastructure and logistics are understood and addressed
Environmental degradation threatens increased yields and productivity	Low Medium	Emphasis in M4P facilitation will be on sustainable farming practices, increasing farmers' ability to build resilience and adapt to changing conditions. Expertise to address this will be criterion in ToRs for managers
Strengthening women's economic role conflicts with cultural norms and expectations	Low Medium	Will work with SADA to sensitise chiefs and religious leaders on the benefits of an enhanced role for women in market activity
Proliferation of NGO activity in the region undermines incentives to take advantage of well-functioning service markets	Medium Low	NGOs (and donors) are active in the region but are increasingly seeking sustainable, market-based solutions. Their interventions are often geographically specific, while the M4P approach will have broader market impacts. Part of the early work of the coordinator will be to engage NGOs and others on effective approaches.

During the early years of implementation, it was recognised that agronomic practices in the region were largely traditional and risk aversion was high. The market showed minimal levels of transformation and structural definition and management skills required to develop business strategies were low and farmers' knowledge and access to information was extremely limited. The overall thinness of the markets, the low yields and uncertainty over production volumes restricted opportunities for investment and business growth. These factors represented a high risk to the programme. Efforts to raise productivity through piece-meal interventions at SHF level were judged to have been largely unsuccessful, despite the presence of a large number of development partner programmes and NGOs operating in the region.

It was also recognised that where the incentives were right, the private sector would work with and make available goods and services to farmers in a commercially viable and sustainable way, and that SHFs would

make the necessary investment to adopt improved agricultural practices if the reward (e.g. yield/sales increases) was clear and tangible.

It was also observed that prudent co-investment with the private sector can reduce risk aversion and promote innovation, while differentiation and economy of scale opportunities would provide the scope for targeted interventions to address supply-side constraints and quality demand issues.

By Y4, the approach to programme delivery had changed to address these issues, and took the form of annual partner selection and business planning sessions. Firms were selected on the basis of ability and willingness to take forward interventions, leading to the greatest impact on business growth and smallholder outcomes, as measured through the logframe results.

The justification and scope of a two-year, no cost extension of MADE commencing in March 2018 was to allow MADE to deepen and widen the impacts of its market facilitation in agricultural markets in Northern Ghana and mainstream those impacts. Specifically, by launching an integrated package of products and services to be offered by 35 of the best-performing MADE partners, scaling up the use of MADE’s integrated package of products and services and crowding-in other agribusiness and SHFs to adopt the models and services facilitated and promoted by MADE.

To mainstream the impacts, MADE undertook to raise the visibility of the key approaches, improve the level of engagement with public sector institutions and, through a concerted communications strategy, disseminate lessons learnt.

By the beginning of Phase 2 the Risk Matrix template for MADE had substantially changed, extending across 20 descriptors of “original” risk, including four severe gross risks and one severe residual risk after mitigation. All four severe gross risks were external context-related, reflecting the political and economic environment and the growing spectre of climate change. Table 29 below provides a summary of the risk matrix approved in the Y5 Q1 report.

Table 23: Business Case Risk Matrix – Start of Phase 2

RISK DESCRIPTION	GROSS RISK	RESIDUAL RISK	KEY MITIGATION MEASURES
Change in GoG attitudes towards private sector-led inclusive growth	Severe	Major	Assessment of risks and strategies specifically targeted at the PFJ programme
Capacity and willingness of GoG to support market development	Severe	Major	Generating and deploying evidence of the impact of the market systems approach
The impact of the donor and GoG landscape on the markets and businesses that MADE works with	Severe	Moderate	Promote complementary and harmonious private and public sector value chain development efforts
Adverse effects of climate change, weather and disease. Rainfall varies throughout the north, generating a risk of floods and droughts plus negative impact of interventions on environment	Severe	Severe	Promotion of climate-smart interventions. Increase awareness of impact of poor farming practices and excessive use of agrochemicals on health and welfare of farming communities
Social tensions create difficulty or inability to meet targeted 15% of MADE benefits reaching women	Major	Moderate	Mainstream gender and highlight role of women farmers
Programme is overworked and understaffed to manage scaling up	Minor	Minor	Clearly defined roles and accountability for all team members
Breaching of terms and conditions of the support	Minor	Minor	Rigorous on-going management

The overall risk environment in which the programme operates has changed little over the course of Phase 2, but some external context elements are subtly changing.

External Context Risk

The Government’s flagship Planting for Food and Jobs programme (PFJ) has come on-line and is making its impact felt across the region. After a slow start in the 2017-18 season, the fertiliser and seed subsidy element

of PFJ is now reaching a large number of smallholder farmers in northern Ghana. Although figures have not been officially published, evidence gathered during the three assessment and business case exercises suggest that well over 240,000 farmers in the region are now receiving subsidised inputs. This compares with around 80,000 receiving advanced model inputs and services from agribusinesses supported by MADE. On the positive side, the PFJ is engaging with value chain operators to assist with the delivery of input supplies. However, the Government's emphasis on supporting farmer groups plus the enticement of subsidised goods has led to a small number of smallholder farmers leaving partner-run outgrower schemes and going it alone. The Government has also begun fulfilling its pledge to increase the number of agricultural extension workers operating at field level. Although well below forecast, the increase in numbers of new graduates recruited to manage the SHF registration process has resulted in some partner firms being unable to attract qualified extension workers into their farm enterprise advisory service scheme. Demand for qualified staff far exceeds supply, with many graduates opting for a career in government, with guaranteed monthly pay cheques, rather than the uncertainty of joining the private sector with payment based on performance and results.

The PFJ programme is only funded to 2020, and questions are being raised as to its affordability. The aims of the programme are not dissimilar to those of MADE but the mechanism for achieving the results might eventually undermine private sector efforts to establish effective smallholder outgrower models if it deepens its penetration and is seen as an alternative to a market systems approach.

The likely adverse impact of climate change and disruption to rainfall patterns is still regarded as a severe risk to agricultural development in northern Ghana. MADE has launched several initiatives in the areas of mechanisation and irrigation to encourage partner firms to support the introduction of climate-smart technologies and address the issues of soil erosion. A study to raise the case for the adoption of conservation farming practices was undertaken in Y6 Q3 to raise awareness of the issues and to make the case for introducing conservation farming as a key element of the advanced model.

Delivery Risk

Despite the gender-specific barriers identified as a major risk, sex-disaggregated data shows the programme is delivering significant benefits to female farmers, who represent nearly half the beneficiaries, a significant increase on the 15% target set in the business case. In Y6 Q2 a study was undertaken to make the wider business case for gender inclusion and the results of this study will be used to highlight the advantages for partner firms of selectively targeting women for recruitment as farm enterprise advisors and lead farmers and for inclusion in outgrower schemes. MADE had planned to support an apprenticeship programme for female students from select agricultural colleges, but this initiative has had to be deferred because of difficulties aligning college timetables with the needs of firms through the agricultural season.

Safeguarding Risks

Three safeguarding risks were added to the matrix during Phase 2 to recognise some of the potential risks associated with the intensification of agricultural production on the environment and food safety. The safe application and use of agrochemicals is a key topic of the farm business management course offered to farm enterprise advisors under the MADE-supported initiative. MADE has also supported the testing of Aflasafe to reduce the levels of aflatoxin in maize and groundnuts, which as a result of climate change and late post-harvest rains is becoming a health risk to farming communities where safe storage is not available.

The growth in the use of digital data management platforms to register farmers for outgrower schemes and to record purchase and sales transactions has also raised issues about how this information is used and whether it can be sold on for commercial gain. Safeguarding commercially sensitive information will become more important as partner firms embrace improved production technologies and improve the monitoring of smallholder performance.

Operational Risk

Operational risks were subsumed under delivery risks in Y6 to reflect the stage reached by the programme. Although still recorded as a potential major risk, the programme has been able to cope with the scaling back of the local team during the extension phase and hold onto its key team members either in substantive management roles or recruited as short-term consultants to deliver discrete activities. The programme adopted

a disciplined quarterly 'pause and reflect' process during the whole of Phase 2, which has allowed HQ management and the client to closely monitor the delivery of the programme's interventions and introduce mid-phase corrections as necessary.

Fiduciary Risk

MADE has operated a rigorous partner selection and due diligence process throughout the six years of implementation, to ensure partner firms are in a position to deliver the range of inputs and services specified in the grant contracts issued each year. Financial support to the firms is provided on the basis of agreed milestone payments against specified deliverables, and these milestone deliverables are verified before payments are released. As noted above during phase 2, MADE signed two-year memoranda of understanding to encourage longer-term planning by agribusinesses, but continued to operate on the annual grant contract and milestone delivery basis.