

WWF-Milestone 5: Fourth progress report and 2nd Round of learning and review sessions and prioritization of practices for new entrants, as well as learning and implementation support

EXECUTIVE SUMMARY

During this period, village-based learning groups in KZN (11) and EC (7) respectively, have continued with their prioritized CRA learning and implementation processes. The field cropping (Conservation Agriculture) reviews and planning for the planting season were undertaken and planting has commenced in all areas. With respect to vegetable production, 70 micro-tunnels have been installed in KZN (59) and EC (11), an agroecological gardening training has been undertaken. Bucket drip kits have been installed in 42 of the 70 tunnels so far and is ongoing. 18 Participants from Bergville finalized their winter fodder supplementation experimentation process. The household poultry production units (100 participants) have been supported throughout: farmers are now providing monies for further orders of birds and feed.

Monthly farmers market stalls have been undertaken for 9 villages in Bergville and Ozwathini, involving 30 participants. An overall income of R43 650,50 has been realized between end May and November 2021, an average of around R3 968,00 per market. Further marketing options exploration has continued, although monthly market stalls in the EC and SKZN have not come off the ground. The social unrest in KZN has negatively affected the marketing process and alternatives are being sought.

Stakeholder engagement in the period has included being part of the SANBI Okhahlama Catchment Indaba, being a panellist for an Agroecology seminar on governance, submission of an abstract to the South African Mountains Conference, continuation with the Research for Climate Justice process and co-hosting a webinar on CbCCA hosted by the Centre of Sustainable Transitions (Stellenbosch) among others. MDF has also provided collaborative input and training in agroecology and Conservation Agriculture to CREATE (PMB) working with physically challenged beneficiaries and to ERS (Matatiele) to induct the eco-champs there into climate resilient agriculture implementation, respectively.

1 NARRATIVE REPORT

PROJECT DETAILS

Project No and Title	GT06177_ID315_ Climate Resilient Agriculture in mixed smallholder farming systems allows for sustainable food and nutrition security and local incomes for the rural poor in the lower Drakensberg foothills of KZN and the Eastern Cape.
Date of approval	6 th October 2020
Start and end date	1 st October 2020-30 th September 2022
Project value	R3 000 000
Contractor's name	Mahlathini Development Foundation
Project objectives	Increased productivity and resilience in the mixed smallholder farming system through implementation of a basket of Climate Resilient Agriculture practices: <ol style="list-style-type: none"> 1. Work with existing CCA learning groups to scale up production in the short term within the confines of the COVID-19 pandemic 2. Support a range of intensified food production activities; vegetable production, field cropping and livestock integration 3. Improve social agency for value chain support (VSLAs', bulk buying, local farmer centres and local marketing initiatives)

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Project outcomes	<p><i>Outcome 1 - Food and nutrition security at household level for poor, rural homesteads with enough farming income to sustainably maintain farming activities in the short term</i></p> <ol style="list-style-type: none"> Activity 1 - Learning group review and planning sessions to prioritize each participant's most appropriate basket of CRA practices to be implemented, within the present confined of the COVID-19 pandemic and climate change Activity 2 - Prioritize a basket of appropriate adaptive practices for the individuals and groups involved within different thematic categories: Crops, livestock, water, soil and natural resources Activity 3 - Provide learning and implementation support for the CRA* practices using a Participatory Innovation Development (PID) approach <p><i>Outcome 2 - Development of social agency for community led local economic development and social safety net Improvement of the natural resource base</i></p> <ol style="list-style-type: none"> Activity 1 - Build social and economic capital within each of the learning groups using approaches such as Village savings and loans associations (VSLAs), farmer centres, small business development and local marketing initiatives Activity 2 - Set up a participatory monitoring and evaluation (PM&E) system for monitoring and assessing the impact of the CSA practices on livelihoods and resilience. Activity 3 - Use an iterative approach of farmer level experimentation and social learning to build local adaptation and innovation capacity
Reporting period	October 2020- 30 August 2022
Significant approved changes	None
Changes in capacity to deliver outcomes	None

2 PROGRESS PER OBJECTIVE AND OUTCOME

The last three months have been focused primarily on the installation of micro tunnels and drip kits, learning on agroecological gardening practices including for example mixed cropping and mulching, continuation with the poultry production aspects, winter fodder supplementation and reviews and replanning for the 2nd round of CA implementation in field cropping (11 villages in KZN and 7 in EC).

We have continued with local marketing processes, mostly with organic produce market tables at central points, such as pension days, hospitals and taxi ranks.

Table 1: Progress against specific outcomes and activities for the period September-December 2021

Outcome	Activities	Progress (Milestone 4)
Livelihood security at household level	1. Learning group review and planning sessions	KZN: Ezibomvini, Stulwane, Vimbukhalo, Eqeleni, Madzikane, Gobizembe, Mayizekanye, Ozwathini, Spring Valley, Ngongonini, Plainhill EC: Rashule Nkai, Mzongwana (Lufefeni, Mngeni, Pamlaville) Annual review sessions to assess progress and plan the 2021/22 planting season in progress. Planning sessions held for CA implementation in 16 villages.
	2. Prioritized baskets of appropriate practises	Gardening: Tunnels, drip irrigation, mixed cropping, herbs and multi-purpose crops Livestock integration: Winter fodder supplementation and baling of hay. Initiation of micro poultry enterprises (broilers and layers). Use of cut grass for composting of poultry and livestock manure.
	3. Learning and implementation support	Conservation Agriculture: <ul style="list-style-type: none"> ✓ Seasonal reviews, learning inputs on mycotoxins, soil health and water productivity ✓ Planning of CA experimentation for 2nd round of implementation

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		<ul style="list-style-type: none"> ✓ Procurement and initiation of planting for 16 villages <p>Livestock integration:</p> <ul style="list-style-type: none"> ✓ Fodder supplementation experimentation and monitoring (18 participants) <p>Gardening:</p> <ul style="list-style-type: none"> ✓ Tunnel construction training KZN and EC-, 70 tunnels ✓ Drip kit construction learning workshops for each village where tunnels have been constructed
Social agency for LED and social safety nets	1. VSLAs, business development, farmer centres	<ul style="list-style-type: none"> ✓ Monthly farmers market stalls for 98 villages from Bergville and Ozwathini: September-December 2021 ✓ 26 VSLA's in KZN; monthly mentoring and share out meetings. Set up new VSLA in Ozwathini ✓ Continuation with bulk loan fund: Set up two – one in Ngongonini and one in Bergville.
	2. PM&E system and monitoring	<ul style="list-style-type: none"> ✓ Seasonal reviews for CA ✓ Local marketing income monitoring
	3. Iterative PID approach for improved adaptation and innovation	<ul style="list-style-type: none"> ✓ CA experimentation planning for all areas ;198 participants, based on learnings from the review sessions. ✓ Participatory team evaluation of progress for 1st year of implementation to plan the next steps.

1. Progress overview.

CRA support for different activities is seasonal. During this period (September-December 2021) the following activities have been undertaken:

- The Conservation Agriculture (field cropping) activities has been planned for the 2nd round for 238 participants across KZN and EC.
- Support for micro poultry enterprises have continued and a total of 61 participants have been supported with broilers and 47 with layers. This activity is extremely popular, as a quick win production strategy for income generation and demand has far outstripped our ability to support smallholders. Participants have continued with their production units and have paid for their own inputs, after the initial support
- Gardening (vegetable production) is traditionally a winter activity and 70 participants have been supported with micro-tunnels and drip irrigation kits. Small learning workshops in organic vegetable production have been held in all the villages where tunnels have been installed
- Livestock integration activities supported consisted of monitoring the winter fodder supplementation process for the 19 participating farmers in Bergville (LS33, Premix 450 and protein blocks).
- Monthly market stalls have continued for Ozwathini and Bergville.

The table below provides an overview of the number of participants for all activities to date.

Table 2: Overview of participants in the WWF-GT project for all activities undertaken: December 2021

		CA				Tunnels				Broilers		Layers		Fodder supplementation	
No per annum (135x2)		Proposed	Actual 2020/21	Actual 2021/22	Field cropping ha's	Proposed	Actual 2020/21	Drip kits 2020/21	Gardening ha's	Proposed	Actual 2020/21	Proposed	Actual 2020/21	Proposed	Actual 2020/21
Total	298	135	172	235	43	100	70		1,75	50	61	18	47	100	19
KZN	55 (250)		112	198			59				52		37		
	Bergville		73	85			41	32			38		21		19
	Midlands		24	54			8	8			8		9		
	SKZN		15	59			10				6		7		

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EC	80 (48)		60	37	0,4		11				9		10		
	Mzongwana		48	15			0						1		
	Rashule		10	10			3						3		
	Nkau		2	12			7				9		4		
	Mafube						1						2		

The proposed number of participants for the programme is 135 per annum (55 from KZN and 80 from EC), thus 270 in total over the 2 years of implementation. At present there are 298 participants in the programme, 250 from KZN and 48 from the EC. In KZN the learning groups are well developed and are expanding every year as more participants come on board. In the EC, the learning groups are new and despite participants coming in numbers to the introduction and learning sessions, much fewer have undertaken the actual implementation. It is unlikely in the time that remains that the number of participants in the EC will increase significantly. Building of active members in learning groups is a slow and ongoing process. In addition, the communities in the EC have a longstanding habit of refusing to implement if they are not provided with financial support and labour. This is a throwback from the Government implementation processes in the region such as the Massive Food Production programme where inputs were provided and land preparation was done by the Government.

In terms of expenditure, the budget allocations and use for the various activities is summarized in the small table below

Table 3: Summary of expenditure on CRA activities: November 2021

Cost break-down	Nov-21	Remainder	Budget (2021 and 2022)
Poultry	R184 770,22	-R48 250,22	R80 000,00
Tunnels (70)	R313 295,20	R117 354,80	R430 650,00
Seedlings, marketing etc	R20 843,14	R41827,43	R94 500,00
CA (2 seasons)	R99 227,02	R487,98	R127 715,00
Fodder supp	R4 502,39	R18 497,61	R23 000,00
	R622 637,97	R129 917,50	R755 865,00

For all the activities (poultry, seedlings, CA and fodder supplementation) farmers were supported with a proportion of the start up inputs and have contributed to their own inputs thereafter. MDF is still assisting in procurement and delivery. Due to the combined effects of COVID-19 and the social unrest, many agricultural inputs are in short supply and are not easy to get hold of. This includes day old chicks, point of lay hens, maize seed, fertilizer and seedlings.

2. Fodder supplementation monitoring Narrative report

Four fodder supplementation workshops outlining the livestock nutrition and feeding were held in Stulwane, Eqeleni, Ezibomvini and Vimbukhalo respectively in early July 2021 and the 4 different supplements (LS33, Protein Block, Premix 450 and Master 20) were delivered to participants by the beginning of August. The idea was to feed these supplements with the veld hay bales that participants cut and stored.

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The farmers were carefully advised to choose thin, old and lactating cows, as they would be in most need of supplementation to both survive the winter months and maintain and build body weight. Each participant also chose one healthy cow which would not be fed, but would serve as a positive control /benchmark.



Figure 1: Above Left and Centre: Two of Danger Buthelezi's (Stulwane) cows chosen for supplementation and Above Right: His control cow.

Each farmer had a monitoring form, completed daily, with information regarding supplementation and the body condition score of his/her cows.

Figure 2: Right: Dlezakhe Holngwane's (Stulwane) record keeping for supplementation and body condition scores.

Participant Name	Cow ID	Supplementation Frequency	Body Condition Score (1-5)	Weight (kg)	Health Status
Dlezakhe Holngwane	1	3-4 times/week	2.5	350	Good
	2	3-4 times/week	2.5	350	Good
	3	3-4 times/week	2.5	350	Good
	4	3-4 times/week	2.5	350	Good
	5	3-4 times/week	2.5	350	Good
	6	3-4 times/week	2.5	350	Good
	7	3-4 times/week	2.5	350	Good
	8	3-4 times/week	2.5	350	Good
	9	3-4 times/week	2.5	350	Good
	10	3-4 times/week	2.5	350	Good

Results were compiled for 18 of the 19 participants across Vimbukhalo, Stulwane, Ezibomvini and Eqeleni. Most of the participants provided supplementation 3-4 times per week, some less (once every 2-3 weeks), as cattle were in the mountains in the winter grazing areas and needed to be brought home to the kraals to be provided with the supplements. This was a bit of an unforeseen complication, as participants were meant to feed their cows on a daily basis. Nonetheless, some increase in body condition scoring was noticed over the 8-9 weeks of supplementation. Farmers noted that most of the cows they chose to feed would not have survived the winter without the supplementation. The table below outlines the results of the 18 participants

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Table 4: Supplementation body conditions score results for 18 participants in Bergville.

Village	Name & surname	Type of supplements	Treated Cows	Body Condition Score								
				Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	
Eqeleni	Thulile Zikode	Not Supplemented	Control Cow	2	3	3	3	3				
			Cow 1	2	2	2	2	2				
			Cow 2	1	2	3	3	3				
			Cow 3	1	1	2	2	2				
	Sthabiso Manyathi	Not Supplemented	Control Cow	3	3	3	3	1	1	1	1	
			Cow 1	2	2	2	2	2	3	3	3	
			Cow 2									
			Cow 3									
	Lungile Dladla	Not Supplemented	Control Cow	3			3					3
			Cow 1	1			1					2
			Cow 2	2			2					2
			Cow 3	2			2					3
	Thulani Dlamini	Not Supplemented	Control Cow	2	3	3	3	3				
			Cow 1	1	1	1	1	1				
			Cow 2	2	2	2	2	2				
			Cow 3	2	2	2	2	2				
Stulwane	Nothile Zondi	Not Supplemented	Control Cow	3	3	3	3	3	3	3	3	3
			Cow 1	2	2	2	2	2	3	3	3	
			Cow 2	2	2	2	2	2	2	3	3	
			Cow 3	2	2	2	2	2	2	2	2	
	Dombolo Buthelezi	Not Supplemented	Control Cow	3	3	3						
			Cow 1	2	2	2						
			Cow 2	2	2	2						
			Cow 3	2	2	2						
	Danger Buthelezi	Not Supplemented	Control Cow	3	3	3	3	3	4			
			Cow 1	1	1	1	2	2	2			
			Cow 2	2	2	2	2	3	3			
			Cow 3	2	2	2	2	2	3			
	Dlezakhe Hlongwane	Not Supplemented	Control Cow	3	3	3	3	3	3	3	3	3
			Cow 1	2	2	2	3	3	3	3	3	
			Cow 2	2	2	2	3	3	3	3	3	
			Cow 3	2	2	2	2	2	2	2	2	
Ntombi Dlamini	Not Supplemented	Control Cow	3	3	3	3	3	3	3	3	3	
		Cow 1	2	2	2	2	3	3				
		Cow 2	1	1	1	1	1	2	2	2		
		Cow 3	1	1	1	1	1	1	2	2		
Sabelo Mbhele	Not Supplemented	Control Cow	3	3	3	3	3	3	3	3	3	
		Cow 1	1		1		2		2			
		Cow 2	2		2		2		3			
		Cow 3	3		3		4		4			
Thokozile Hlophe	Not Supplemented	Control Cow	3	3	3	3	3	3	3	3		
		Cow 1	1		1		1		1			
Khethabahlé Miya	Not Supplemented	Control Cow	3	3	3	3	3	3	3	3		
		Cow 1	1	1	1	1	1					
Vimbukhalo	Zibonele Sithole	Not Supplemented	Control Cow	3	3	3	3	3	3	4	4	
			Cow 1	1	1	1	1	1	1	1	1	
	Nomusa Zikode	Not Supplemented	Control Cow	3	3	3	3	3				
			Cow 1	1	1	1	1	1				
			Cow 2	1	1	1	1	1				
			Cow 3	2	2	2	2	2				
	Khosane Hlongwane	Not Supplemented	Control Cow	3	3	3	3	3	3	3	3	
			Cow 1	1	1	1	1	1	1	2	2	
			Cow 2	2	2	2	2	2	3	3	3	
			Cow 3	2	2	2	2	2	2	3	3	
	Buyisiwe Ndaba	Not Supplemented	Control Goat	4	4	4	4	4	4	4	4	
			Goat 1	4	4	4	4	4	4	4	4	
			Goat 2	3	3	3	3	3	3	3	3	
			Goat 3	3	3	3	3	3	3	3	3	
	Ezibomvini	Phumelele Hlongwane	Not Supplemented	Control Cow	3	3	3	3	3	4	4	
				Cow 1	1	1	1	2	2	2	2	
Cow 2				2	2	2	3	3	3	3		
Cow 3				2	2	2	2	2	3	3		

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From the above table it can be seen that body condition improved for most of the cows provided with protein supplements. Cows for Zinbonele Sithole and Nomusa Zikode, both using Master 20 supplement maintained their body condition score but did not improve. The cow that Kethabahle Miya was feeding however died.



Figure 3: Above Left: Nomusa Zikode's cows, which were only provided with supplement sporadically as they remained in the mountain pastures for extended periods and thus did not show an increase in body condition scores and Above Right: Kethabahle's cow which died from being underfed.

Overall, this experimentation process has been highly successful for participants, as they could clearly determine the value of winter fodder supplementation for their livestock. They were supplied with enough supplement to feed their cows for four weeks, meaning that all the participants also continued their experimentation by buying their own supplements after that.

3. Conservation Agriculture

Results for 2020/21 growing season

For the CA component, co-funding for adaptive research from the Maize trust is available and until 2020/21 the KZNDARD LandCare unit has also provided support with seed, inputs and implements. It means that participant numbers in KZN are much higher than those supported through this WWF-GT process.

Area	No of villages	No of participants	1000m ² trials (10x10 m)	400m ² trials	Strips	Fodder species	Seed	Poultry	Two row planter	Short season maize	Actual planted (hectares)
KZN	24	365	73	184	119	29	8	17	22	44	25,66
EC	5	60		48					2		0,32

In the EC, the initial response to the CA learning workshops was very positive and inputs for the CA experimentation were provided to almost 100 participants. However only 48 participants planted their CA trails according to the demonstration workshops held. Most planted very small areas, around 100m² only. As it is the first year of implementation, the trial layout was pre-determined by MDF to be 4 10x10m blocks with maize and bean and maize and cowpea intercrops respectively. This layout assists in the learning as it provides for visible outcomes in respect of clo spacing and intercropping within the CA system, as well as fertilizer micro-dosing, and planting in basins and rows.

Below are a few indicative pictures of CA trials in Matatiele.

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Figure 4: CA trial plots in Matatiele. Above Left: Nomasono Jili (Mngeni), Above Centre: Majibelo Pelo (Lufeleni) and Above Right: Bhadini Nogwadi (Palmaville)

In KZN, a much more intensive monitoring process is supported through the Maize Trust process.



Figure 5: Clockwise from Top Left: A summer cover crop (SCC) plot with fodder sorghum, Sun hemp and sunflower, Phumelele Hlongwane in her strip cropping trial showing maize, cowpeas and SCCs, and maize and bean intercropped plot, a strip of perennial fodder, Lespedeza, and a two row no till planter used in Stulwane (Bergville).

A broad-based summary of the results indicates that multi-cropping and crop rotation in smallholder CA systems leads to:

-Significantly reduced runoff: Runoff pans for 13 participants across KZN in their control and CA trial plots have indicated an average 50% reduction in run-off due to implementation of CA

	rainfall (mm)	runoff CA plot (L)	runoff control plot (L)
Bergville (6 participants, 4 villages)			
Sum	1276,7	76,7	146,1
% Rainfall conversion		6%	11%
SKZN (4 participants, 4 villages)			
Sum	505,8	12,3	18,4
% Rainfall conversion		2%	4%
Midlands (3 participants, 3 villages)			
Sum	939,1	37,3	64,1
% Rainfall conversion		4%	7%

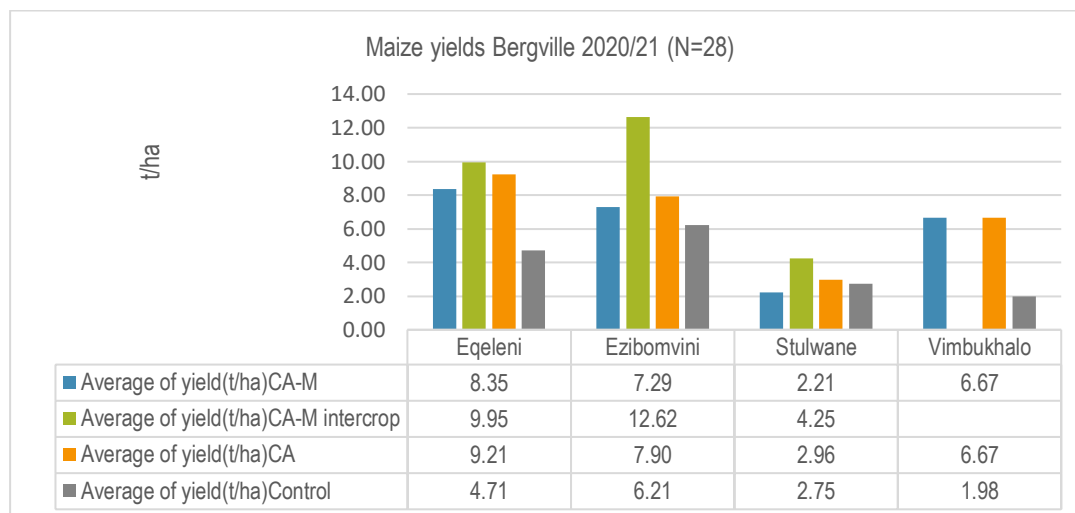
-Slight reductions in bulk density of soil: Bulk density of soil is reduced over time through the CA multi-cropping options, when compared to C monocropping and conventional tillage. The small table below compares bulk density results in Bergville over three seasons

Bergville pb (g/cm ³)	2018/19	2019/20	2020/21
CA multi cropped plots combined	1,26	1,29	1,12
CA control (M)	1,36	1,40	1,23
Conventional control (M)	1,30	-	1,24

-Significantly improved Water Productivity (WP) for maize: WP for maize grown in a multi-cropping rotation CA system is much higher than CA mono-cropped maize or conventionally tilled maize. Results for WP calculations for 12 participants from Bergville over 2 seasons re shown in the small table below.

Cropping options	WP (kg/m ³)	WP (kg/m ³)	Ave WP:2 seasons
	2020/21 (n=11)	2019/20 (n=9)	
CA – Maize (M)	2,28	1,11	1,7
CA- Maize, bean intercrop (M+B)	2,50	1,21	1,9
CA- Maize cowpea intercrop (M+CP)	2,84	1,43	2,1
CA- Maize control (M-CA control)	1,1	0,8	1,0
Conventionally tilled maize (M-Conv Control)	0,75	0,36	0,6

-Significantly improved yield potential for maize: This is a combination of judicious use of external inputs as well as soil fertility and soil health gains from CA over time. Yield advantages for maize through intercropping and crop rotation are evident after a continuous CA implementation cycle of 4 or more years. The small graph below summarizes maize yields for CA participants across 4 villages in Bergville (n=28). Yields of the CA multi-cropped plots are consistently higher than consecutively mono cropped plots and control plots.



Soil health improvements are constrained by weather variability, lack of soil cover and reluctance to increase crop diversity beyond the 2-3 crops that people habitually plant for food production.

-Production for food and sale of surplus: For Bergville, 70% of participants have produced enough maize to feed their families and 30% have also been able to sell surplus. Participants in the Bergville site have made between R1000-R5000 each selling maize and beans in their communities and at pension points. For the Midlands, the participants sell green maize to bakkie traders and into nearby towns. Here the average income was around R2000 per 300m² CA plot. This would equate to an income of around R66 600/ha. This is a significantly higher income potential than selling dry maize per ton, which would equate to around R10 400 for the 2,6t/ha

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average for these farmers. 80% of participants in the Midlands have sold some of their maize and actual incomes ranged from as little as R120 (400m²) to a maximum of R39 550 (2700m²)

Farmer level review sessions and planning for 2021-22 planting season

Learning group seasonal review and planning sessions were held in all 18 villages where CA implementation is being undertaken. A summary of the outcomes for the Bergville villages is provided in Annexure 1. Similar summaries are available for the Midlands and SKZN groups as well.

A few significant comments made by farmers in the review sessions are provided as bullet points below:

- Short season maize produced well, despite small cobs, with little to no fungal infections. They reach maturity faster than the normal hybrids
- Cobs produced from the hybrids PAN6479 and PN53 are bigger than cobs from traditional maize. In addition, the leaves surrounding cobs for PAN53 do not pull away from the cob meaning that drying is faster and fewer cob rot issues are experienced.
- Intercropping of maize and beans and close spacing of crops increases moisture in the plot, reduces weeds and improves maize yields
- Weeding must be done in the first 6 weeks after planting to ensure that the maize grows well and there is no yield reduction due to weeds.
- In all areas there have been some issues with the two row planters, with the settings for seed and fertilizer depth at planting. Participants feel they need more technical support and training to troubleshoot these issues.
- CA has improved yields considerably – enough for feeding a family for a whole year
- Much reduced soil erosion
- Cover Crops are used to feed poultry and livestock
- Lespedeza grows well and we can even include some of this cut and dried material into the fodder bales for winter feeding.
- Strips are easier to plant and weed than the blocks
- Bean yields have been consistently low and farmers want to experiment with planting beans later in the season (January) and also with different varieties of beans which may be more resistant to diseases. One farmer in Ozwathini planted her beans a few weeks before her maize and this worked well to improve the bean yields.
- Savings from VSLAs assist in buying inputs

Planning for Ca planting for the 2021-/22 cropping season

The table below outlines the different crops and crop combinations to be tried out in both KZN and the EC regions.

Table 5: Different cropping options chosen for individual participants undertaking CA experimentation for the 2021-22 season.

Area	Village	No of part	Short season maize	Gadra beans	Cowpeas	turnip	SCC	Fodder: Lespedeza, Tall fescue	Pumpkin	WCC	Jugo beans
Bergville (85)	Ezibomvini	23	23	23	19	10	18	10	23		
	Stulwane	27	24	27	20	10	20	12	27	6	
	Vimbukhalo	20	18	20	16	3	15	0	20	2	
	Eqeleni	15	15	15	6	10	15	8	15	3	
Midlands (54)	Ozwathini	20	20	20	0	9	9	7	19	7	7
	Gobizembe	14	9	14	0	0	3	3	2	7	
	Mayizekanye	20	6	20	0	4	10	1	20	10	
SKZN (59)	Madzikane	12	5	12			5			5	
	Spring Valley	11		11							
	Ngongonini	27	5	27			5			5	
	Plainhill	9		9							
EC (37)	Mzongwana	15		15	15		5			5	
	Rashule,	10		10	10		5			5	
	Nkau	12		12	12		5			5	
TOTALS		235	125	235	98	46	115	41	126	60	7

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The initial planting demonstrations and workshops have been undertaken in all areas, inputs have been bought and distributed, farmers have paid in their subsidies for inputs (R35 340.00) and planting has commenced.

In addition, a Climate Resilient Agriculture training session was held for the 14 eco-champs working in Matatiele, working with ERS. The idea is to broaden the scope of their work into both implementing and promoting CRA alongside the other grazing management and resource conservation work that they do. Field staff from CSA, SaveAct and ERS also attending this two day training, of which one day was devoted to a theoretical input and the next day was a practical CA planting process undertaken at ah homestead in Rashule.

Below are a few photographs of the CA planting season preparation

Figure 6: Right: Eco champs and learning group participants in Rashule, EC get ready to plant a CA trial plot after slashing and spraying the weeds Far-Right: KNDARD and Local Municipal support in Bergville – tractor with boom sprayer which sprayed for around 40 participants across Vimbukhalo and Stulwane.



4. Gardening: Tunnels and drip kits

Introduction

For implementation of vegetable production, 70 mini tunnel and drip kits have now been procured from Socio-Technical Interfacing and constructed along with the three small bucket drip kits for each tunnel. All villages have received some training in construction of trench beds, as well as mixed cropping, mulching and natural pest and disease control. Participants have ordered and paid for seedlings for these tunnels and seed/seedlings of new and different types of vegetables and herbs have also been provided to participants. In some areas, the installation of the drip kits is still lagging a bit.

In Bergville, where the large majority of tunnels were constructed, a team of 4 local youths were trained up and supported to put up the tunnels with the participating households. Participants have been selling their vegetables, produced in their tunnels and gardens since August.

The tunnels have been put up as follows:

Area	No of tunnels installed	No of drip kits installed
Bergville: Stulwane, Ezivbomvini, Vumbukhalo, Eqeleni	41	32
Midlands (Gobizembe, Maiyzekanye, Ozwathini)	8	8
SKZN (Spring Valley, Ngongoninin, Madzikane, Plainhill)	10	0
Matatiele (Rashule, Nkau, Mafube)	10 (+1)	0

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The last round of tunnel construction is likely to focus primarily on Matatiele, as there is now considerable interest in these tunnels to ameliorate some of the harsh weather conditions in the area.



Figure 7: Midlands: Above Left: Drip kits installed in MamZondi's tunnel in Gobizembe, Above centre: Laying out the pipes after putting in the string drippers for Mrs Xulu (Ozwathini) Above Right: Making of the stone and sand filters for the bucket drips for Mrs Mhlongo (Ozwathini) and Above Far Right: Installed drip system for Mrs Chamane's (Ozwathini) mulched beds in her tunnel.



Figure 8: Above Left and Right: Productive tunnels for two participants from Nkai (Matatiele) Novusukile Qundane and Martha Mbongwe

Figure 9: Right: Packing the trenches for Duduzile Khukhu (Rashule), with members of the learning group and field staff from SaveAct also in attendance and Far Right: Her completed tunnel.



Local marketing

The monthly market stalls at local pension pay out points in Bergville and Ozwathini continued, but difficulties due to the provincial looting and unrest has necessitated some adjustments. Two of the main factors here is that SASSA have discontinued their village-based pension pay outs since September, using the unrest as their reasoning. A further difficulty is

that many ATMs and banks will not be re-opened in some of the hardest hit towns like Bamshela and Wartburg, where our farmers are active.

The Ozwathini learning groups have adjusted their strategy by moving their market stall from the shopping area in Bamshela to a taxi rank and also be selling there on 2-3 days per month (for the duration of the social grants pay run). They have now narrowed down their selling days to 2 consecutive days in a month, given logistical and produce quality issues when trying to maintain the stall for three days. Their strategy has worked quite well. There has however been a downswing in the produce they are managing to sell from around 50% of offerings on a day to around 40% of offerings. They are content to continue this process by themselves. They record sales and provide MDF field staff with the information.

In Bergville, in association with the Okhahlamba LM two other NGOs Farmer Support Group and Philakahle, a market day was held in early October (5th) at the Bergville fresh produce market. The idea was to see whether this market could be resurrected and the unused infrastructure there, put to good use. Around 14 smallholder farmers and farmers' cooperatives were invited to bring produce to sell alongside the MDF groups and all local businesses were informed by word of mouth and delivery of flyers and putting up of posters.

Figure 10: Right: MDF learning group members setting up their stall at the Bergville fresh produce market and Far Right: the flyers distributed to all businesses in Bergville.



The market was mostly a failure, as it is too far from town to allow walk-ins and the local businesses did not support the market. They did however buy the produce when we eventually drove over to them. The LM officials lost focus before the market even happened and the KZN DARD, decided to set up their own market on a different day, despite being positive in the planning sessions. This exercise will thus not be repeated. This however leaves the Bergville groups in a difficult situation, as they now need to try and find a venue in Bergville town for their market stall. This is taking a while to organise.

The small table below provides a running total of sales from the market stalls between April and October 2021.

Table 6: Sales records for local market stalls in Ozwathini and Bergville. April-November 2021

Summary of market incomes for Market stalls: April- November 2021					
Date	No of farmers	Villages	Amount	Market	Produce; in order of sales
2021/04/10	11	2	R2 419,00	Emmaus	Pork meat, dry beans, traditional mats, vegetables, pumpkins, processed chilli, green maize, eggs
2021/05/09	16	3	R1 580,00	Emmaus	Vegetables, pork meat, dry beans, dry maize, sweet potatoes, pumpkins, incema, broilers
2021/06/04	16	4	R11 527,50	Bamshela - Ozwathini	Eggs, pork, sweet potato, mealie cake, broilers, beans, vegetables
2021/06/09	18	4	R5 072,00	Emmaus, Stulwane	Pork meat, broilers, vegetables, pinafores, dry beans, dry maize, processed chilli, vegetables
2021/07/10	16	4	R3 415,00	Emmaus, Stulwane	Pork meat, vegetables, broilers, processed chilli, dry beans
2021/08/04	8	4	R3 866,00	Bamshela - Ozwathini	Pork, buns, slaughtered chickens, eggs, amadumbe, potatoes, cabbage, swt potato, carrots, spinach, avocado, pumpkins
2021/08/07	9	3	R2 379,00	Emmaus	Pork, broilers, sweet potatoes, amadumbe, eggs, spinach, onion, cabbage, chillies, tomatoes, snacks

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2021/09/09	18	4	R3 745,00	Emmaus	Broilers, traditional chickens, potato seed, spinach, mustard spinach, cabbage, carrots, lettuce, eggs, processed chillies, amadumbe.
2021/10/08	8	4	R845,00	Bergville fresh produce market	Spinach, mustard spinach, cabbage, beetroot, leeks, onions, tomatoes
2021/09/03,06,07	12	5	R5 448,00	Bamshela - Ozwathini	Eggs, spinach, chillies, green peppers, carrots, tomatoes avocados, beans, pumpkins, bananas, lettuce, herbs, sweet potato, amadumbe, potatoes, maize and potato seed
2021/10/05,06	12	5	R3 354,00	Bamshela - Ozwathini (taxi rank)	Eggs, slaughtered chickens, beans, cabbage, spinach, beetroot, lettuce, amadumbe, green peppers, carrots, onions,, tomatoes, avocados, amadumbe, lemons
2021/11/03,04	9	4	R2 964,00	Bamshela - Ozwathini (taxi rank)	Potatoes, pork, eggs, spinach, cabbage, dry beans, lettuce, red cabbage, cauliflower, broccoli, onions, green peppers, chillies, herbs
2021/10-11	3	2	R990,00	Sale to shops in Bergville: Boxer and Saverite	Spinach
TOTAL SALES			R47 604,50		

From this table an average of 13 participants have been selling at each market making an average of R305/selling day per participant. A copy of the market day report of November in Ozwathini is provided in Annexure 2.

The dip in earnings for the Bergville participants after the social unrest (August to October 2021), is very obvious and they made only 50% of what they were managing before that. Selling at the Fresh produce market totalled only R850. An alternative option now needs to be sought. The contraction of the market for Bamshela has not been that severe.



Figure 11: Above Left to Right: Produce from gardens and small poultry units on display or sale at the September local market in Bergville. On the right is the delivery of spinach from farmers to Saverite in Bergville.

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Figure 12: Above; Views of produce on sale at the October market in Bamshela (Ozwothini).

5. **Strengthening of Innovation platforms and networks**

The table below summarizes stakeholder interactions for the period (September- November 2021).

Table 7: Stakeholder interactions summary. September-November 2021

Activity	Description	Dates
Okhahlamba Local Municipality	Okhahlamba LM: Fresh produce market, planting support and materials provision	10/04 and ongoing
KZNDARD	Provincial launch of multi planting season 2021/22 Opened by the KZN premier Mr Sihle Zikalala Planting support and materials provision	29/09
SANBI Living catchment Programme	Co-convening of Okhahlamba Multistakeholder Forum with the INR.	
SANBI Uthukela Catchment Indaba	Show casing of community level CRA work and local spring protection activities (~100 participants)	10/02-04
CREATE	Introduction of CRA and tower gardens to 12 physically challenged beneficiaries	20/09
Farming for Climate Justice (F4CJ)	Participatory research support process through UCT and Coventry University, UK. Subgroup on solidarity economies, led by Tema Mathebula from MDF, in Ozwothini	Ongoing
ESS research - WRC	UKZN research in ecosystem services mapping supported by MDF: water walks, focus group discussions planning, eco-champs	Ongoing
SAMCC	Abstract accepted for conference in March 2022	
Agroecology network: Food governance CoP	Panel member for Agroecological Transitions and Local Governance. E Kruger	17/11
Centre for Sustainability Transitions	Co hosting webinar on CbCCA implementation processes	02/12



Figure 12: Above left: The KZNDARD seasonal launch – MDF stall, Above Centre: The tower garden built as a demonstration for CREATE participants and Above Right: Visitors in Phumelele Hlongwane’s garden during the Uthukela catchment Indaba.

A total of 26 Village Savings and Loan Associations (VSLAs) have been supported, including a new group set up in Ozwathini in October 2021. Most of these groups are in Bergville (22) with another 3 in SKZN and 1 in Midlands. In the Matatiele site, MDF works in partnership with SaveAct who manage the savings group aspects. Further meetings have been held in Ngongonini to set up the Bulk Loan Fund (BLF) in that area.

The table below provides a summary of transactions for each of the VSLAs for the period of March-October 2021. A total of 468 participants are involved and have a combined VSLA value of just over R1 million.

Table 8: Summary of saving and loan transactions for all VSLAs across KZN: March-October 2021

VSLA summary							
No.	AREA	GROUP NAME	NO. OF PEOPLE	START Date	VALUE OF TOTAL SHARES	VALUE OF LOANS REPAID	NEW BALANCE
1	Ezibomvini	Ezibomvini	19	November	R37 600,00	R10 100,00	R10 100,00
2	Ezibomvini	Ukuzama	13	August	R3 000,00		R33 500,00
3	Emazimbeni	Nyonyana	23	October	R 87 000,00		R78 900,00
4	Emabunzini	Isibonelo	19	November	R45 200,00	R5 580,00	R43 260,00
5	Eqeleni	Masibambane	20	October	R72 140,00		R66 400,00
6	Eqeleni	Masithuthuke	19	November	R61 200,00	R23 840,00	R52 040,00
7	Stulwane	Mbalenhle	20	November	R59 600,00	R34 300,00	R48 100,00
8	Ndunwane	Mphelandaba	15	September	R4 200,00		R33 920,00
9	Emabunzini	Sakhokuhle	19	November	R78 700,00	R76 290,00	R65 720,00
10	Vimbukhalo	Ukhamba	20	November	R67 300,00	R62 090,00	R55 760,00
11	Stulwane	Vukuzenzele	17	December	R42 900,00	R14 500,00	R28 780,00
12	Stulwane	Umtwana 2	16	December	R37 200,00	R20 160,00	R13 120,00
13	Stulwane	Umtwana 1	16	December	R64 000,00	R24 320,00	R35 660,00
14	Emadakeneni	Azam	14	January	R12 500,00	R7 710,00	R3 970,00
15	Stulwane	lthembaletu	19	January	R 52 200,00	R 31 000,00	R28 690,00
16	Stulwane	Zebra	14	January	R 27 900,00	R 20 150,00	R 2 319,00
17	Emahlathini	Sizakahle	36	March	R 36 100,00	R 15 630,00	R30 240,00
18	Stulwane	Sondelani	14	November	R 41 500,00	R 34 870,00	R22 990,00

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19	Stulwane	Mzizi	18	November	R 49 000,00	R 29 950,00	R31 210,00
20	Emabunzini	Qhubekani	19	November	R 67 500,00	R 55 980,00	R64 680,00
21	Emahlathini	Masiphumulele	10	March	R 24 900,00	R 6 380,00	R16 940,00
22	Stulwane	Thuthukani	19	December	R 89 100,00	R 46 440,00	R89 880,00
23	Ngongonini	Masakhane	20	March		R16 100,00	R56 160,00
24	Madzikane	Madzikane	15	March	R68 600,00	R7 250,00	R64 350,00
25	Madzikane	Senzokuhle	15	May	R29 800,00	R 1 500,00	R31 000,00
26	Ozwathini	Sikhulule	19	October			R2 800,00
	TOTAL		468		R1 159 140,00	R544 140,00	R1 578 448,00



Figure 13: A view of Masibambane VLSA in Eqeleni during their share out meeting. All monies are laid out on a mat prior to sharing, to ensure full transparency and agreement from the members.

Despite increased financial pressure and vulnerability of participants, these VSL groups have continued with their savings and small loans. Participants use their small loans for consumption smoothing as well as small farming enterprises, including poultry, vegetable production and field cropping.

3 GAPS AND CONSTRAINTS

For the past three months work has continued, despite enhanced difficulties in the broader environment including the higher poverty rates in rural areas, increased prices for food and agricultural supplies, and difficulties in supply for some agricultural commodities such as layers, broilers and seed. This situation has been exacerbated by the civil unrest in the province in July 2021. Some of the small centres where smallholders buy supplies and food have started to rebuild and mostly supplies are now available. SASSA however has made a decision to discontinue all rural pay points and now only provide pay-outs in the centres. This has put a dampener on the local marketing strategies that have been used, as people now once again buy their supplies in town where they get their grants.

In addition, COVID-19 is still a concern in these communities. Many of the rural inhabitants are anti vaccination, due to a strong distrust of the state, as well as buying into a lot of the fake news circulating on social media.

4 COMMENT ON FINANCIAL REPORT

NOTES ON EXPENDITURE

Expenditure has been compiled up until the end of November 2021

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1. Staff cost: Staff costs are somewhat higher than the budgeted amount for this period. This was compensated for by reducing the 3rd party and external evaluation fees for this period.
2. Operating expenses- Materials: This budget item is on target according to the budget. The only materials still to be procured are 30 tunnels and a few outstanding inputs for the 2021/22 CA experimentation.
3. Overall expenditure for the period of September-November 2021 has been 5% higher than the allocated funds.

Below is a summary of the Financial report.

WWF: GT06177 Financial report		ESTIMATES		Date: 30 November 2021		Milestone 5	
Code	Description	Project Budget	Full Year 2nd	Previously Reported YTD Actuals	This quarter Actuals (September-November 2021)	Year-to-Date (YTD) Actuals	Forecast minus YTD Actuals (=Variance)
		Oct 2021- August 2022	Oct 2020- November 2021				
	A - OPENING BALANCE	R3 000 000,00	R1 847 500,00	R968 064,98	R740 547,98	R1 659 492,00	R188 008,00
	Cash received	R1 431 975,00					
	Other income (interest, FX gains/loss)	n/a					
	B - TOTAL income + o/balance	R1 431 975,00	R1 847 500,00	R1 016 350,00	R1 431 975,00	R1 431 975,00	R415 525,00
	EXPENDITURE by code						
1	Staff costs	R1 210 066,50	R624 466,50	R743 120,58	R171 615,50	R914 736,08	R295 330,42
2	Third party fees	R458 919,00	R237 219,00	R155 321,32	R28 800,00	R184 121,32	R274 797,68
3	Travel and Subsistence	R446 809,50	R230 959,50	R215 850,00	R51 776,86	R267 626,86	R179 182,64
4	Capital Asset costs	R0,00					
5	Operating expenses; materials	R755 865,00	R181 523,00	R531 092,60	R94 854,90	R625 947,50	R129 917,50
6	Meetings / Education / Training	R0,00					R0,00
7	Project Promotion / Communication/ Printing / Publication	R37 260,00	R19 260,00		R4 500,00	R4 500,00	R32 760,00
8	Project Evaluation by 3 rd party	R91 080,00	R47 080,00	R14 107,50		R14 107,50	R76 972,50
	C - TOTAL EXPENDITURE	R3 000 000,00	R1 340 508,00	R1 659 492,00	R351 547,26	R2 011 039,26	R988 960,74
	D - CLOSING BALANCE	R0,00	R1 659 492,00	-R691 427,02	R389 000,72	-R351 547,26	-R800 952,74

5 TWO COPIES OF ANY PUBLICATIONS

6 FINANCIAL REPORT

The financial report excel sheet is attached as a separate document: WWF_Financial report_GT06177_ID315_CRA KZN-EC_20211130. Documentation for explaining full expenditure summaries is available on request.

7 SIGNIFICANT PLANNED ACTIONS FOR NEXT REPORTING PERIOD

Outcome	Activities	Planned actions (Milestone 6)
Livelihood security at household level	1. Learning group planning and review sessions	<ul style="list-style-type: none"> ✓ KZN: Ezibomvini, Stulwane, Vimbukhalo, Eqeleni. Madzikane, Gobizembe Mayizekanye, Ozwathini, Spring Valley, Ngongonini, Plainhill ✓ EC: Nkau, Rashule, Mafube, Mzongwana (Lufefeni, Mngeni, Chibini)

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	2. Prioritized baskets of appropriate practises	<ul style="list-style-type: none"> ✓ CA: Implementation of 2nd round of experimentation including intercropping, multi-species cover crops, fodder production, strip cropping and crop rotation. ✓ Gardening: Tunnels, drip irrigation, mixed cropping, herbs and multi-purpose crops ✓ Poultry production: Continue process for 100 participants cross KZN and EC.
	3. Learning and implementation support	<ul style="list-style-type: none"> ✓ Drip irrigation and intensive homestead gardening, including natural pest and disease control. ✓ CA: cover crops, soil health, mycotoxins
Social agency for LED and social safety nets	1. VSLAs, business development, farmer centres	<ul style="list-style-type: none"> ✓ Marketing exploration workshops continuation and monthly farmers market stalls ✓ 26 VSLA's in KZN; monthly mentoring ✓ Set up Bulk loan fund VSLAs and initiate bottom-up food supply chains
	2. PM&E system and monitoring	<ul style="list-style-type: none"> ✓ Production and progress monitoring system design and implementation
	3. Iterative PID approach for improved adaptation and innovation	<ul style="list-style-type: none"> ✓

8. LIST OF ANNEXURES

Complementary information, including photographs.

ANNEXURES

1. Bergville: Learning group CA seasonal review session summary: September 2021
2. Market day report for Ozwathini: November 2021

1. BERGVILLE: LEARNING GROUP CA SEASONAL REVIEW SESSION SUMMARY: SEPTEMBER 2021

1. Bergville Learning Groups: CA assessment 2020/2021 (*Written by Michael Malinga*)

Herewith the CA reviews assessments conducted across 4 villages which are our main focus in the Bergville area with the responses combined in these villages of interest. As per planning for 2021/2022 season, many participants in these villages have shown interests in continuing with 10x10's and strip demonstration trials regardless of our input support for this upcoming planting season. The participants have asked us to establish a quotation of actual prices for inputs required to plant demonstration trials on their own. We must also assist them in determining the quantities required by each farmer to plant his/her demonstration trial and the contribution required with regard to his/her trial size so that they can buy in bulk and separates the input accordingly amongst each other.

2. SECTION A: GENERAL CA

3. What have been the highlights of the past season?

- One farmer from Eqeleni has joined the learning group this season; she experienced an increased harvest as compared to previous seasons. She plans to also increase her planting area this season.
- The first-year participants are happy to discover a new method that reduces their input cost and saves on renting tractors and oxen drawn planters in the community. Now their cows can rest during the planting season.
- Other farmers are happy to have produced enough maize to sustain them with their families as the majority was able to get over 3 drums
- Bukisiwe Mpulo who planted both 10x10 blocks and strip is happy to have harvested high maize and beans yield from both her experiment plots.
- Mtobho Dlodlo who planted short season maize in December 2020 her harvest was much better as did not experience maize rot on her harvest.
- Other participants are happy to have received high rainfall last year and believe it has played a huge role on their increased maize harvest.
- Other participant who joined us this year is happy that she got 50 kg of maize harvested from her 400 m² demonstration trial. She wants to try again planting her experimental plots trial this upcoming season.
- The participants from Ezibomvini were happy with their cover crops saying were beautiful in their fields.
- Phumelele Hlongwane further stated that intercropping maize with beans has assisted her on her harvest as she noticed that intercropping preserve moisture, reduce weeds infestation resulting to high harvest with reduced labor input on these plots.

4. What are some of the issues or problems of the past season?

- Chickens and pied crows reduced the seed germination as they dig out the seeds from the seed from the planted fields after planting
- Other farmers did not harvest their summer cover crops because pigeons and other wild birds were helping themselves on them before harvest
- They experienced high pest infestation in Beans and Cowpea as they did not receive Decis forte pesticide which they suspect played a role in obtaining low beans yield. Stalk borer was an issue to other farmers but it was not as terrible
- The majority also agreed to have experienced low yield in beans as a result of high rainfall prominent during the harvest season which spoiled their beans during the drying stage.
- Other farmers say that their beans had a vigorous vegetative growth followed by wilting and dying after experiencing early flowering stage. Other farmers stated that their beans completed the flowering stage but the leaves and pods started to shrink at an early fruiting stage.
- One farmers experienced water logging on her demonstration trial positioned on a foot slope. All the floods were collected on her demonstration trial resulting to her maize being stunted with yellow leaves and did not shoots cobs.
- One farmer says her pumpkins had poor seed germination and suspect that it because of spraying the roundup a day after planting.
- The majority complained by poor germination where they had planted Lablab and have resorted into planting other crops on the lablab plot.

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- Nelisiwe Msele experienced poor germination on all her plots. *She **Suspects that** since they are planting in groups, other people are not careful enough when placing seeds on the planting basins. Every time when they are planting someone has to do a follow up to ensure that they do not place seeds in contact with fertilizer as its causes poor seedling emergence and this is something you cannot detect when planting but the damage can be observed after 2 weeks when plots have patches as result of poor seedling emergence.*
- Jerome Ndaba from Vimbukhalo says that his strip plots were severely damaged by a hailstorm and believe he did not see the harvest as a result, especial the beans that were flowering at the time.
- Two farmers complained that they did not obtain maize this year because they crops were destroyed by horses and livestock in Stulwane since their fields are not fenced.

5. What are the possible solutions to challenges faced?

- Across all villages, they believe that planting beans in January will assist them in evading high rainfalls that spoils their beans during the maturing stage.
- Or experimenting with other beans variety with resistance to rotting as a result of high rainfall which may occur during the maturing stage.
- To those farmers who have experienced reduced maize yield must ensure weeds are removed within the first 6 weeks after planting between the vegetative and tasseling stage so that the plants experiences less competition during the reproductive stage as it is sensitive and cannot share the resources with tall weeds. The plants at this stage are tall enough and have a thick canopy cover to fight growing weeds underneath.

6. SECTION B: CA EXPERIMENTATION

1. What are the observed differences between CA and normal planting practices? (Include for example soil fertility, soil health, compaction, run-off, water holding, pest and diseases, yields)

- The planting season was delayed for farmers using conventional tillage because the soil was muddy as a result of high rainfalls experienced in November 2020 and it was not easy for them to work the soils compared to us using CA as we only use hand hoes to open basins/planting station where we place our seeds and fertilizer.
- Since we started using CA we are getting high yields on our fields. The farmers are now able to produce enough maize yields processed into maize meal to sustain their families.
- In the past when farmers were using conventional tillage, they use to experience high soil erosion which washed away the soil including seeds and fertilizer. They using to collect their seeds down slope after heavy rainfall, but they see that now even after heavy rainfall their soils is not affected and seeds remain intact on the plant basins. They have further stated that they have seen traces of fertilizer from the previous seasons on the planting basins when planting.

2. What were the observed yields? Can you explain why they were either good/bad (maize, legumes and cover crops

- Maize yields were excellent as many participants are happy with their harvests ranging from 1 bag to filling 1-4 drums and believed that these results can be attributed to high rainfall experienced last year, applying CA practices coupled with a perfect selection of our maize varieties for planting in their area.
- Beans yields was not as pleasant to many farmers as they have experienced low to zero yields due to high rainfall experienced late towards the harvesting season. They believe shifting the planting window beans to January will improve their harvest.
- Summer Cover Crops farmers had mixed emotions about them as other farmers say they harvested excellent yields and were able to feed their chickens from their harvest. Others says that they did not get enough yields as seeds were eaten by pigeons and sorghum attracted kids who came to steal it from plots and while they were at it, they destroyed other crops on their pathway leading into plots where cover crops were planted.

3. Explain outcomes of use of herbicides – describe how these were used and what the outcomes were? How much hand weeding was required? What could work better?

- As for the herbicide the majority farmers sprayed 300ml/16L of water and applied the chemical day before or after planting and very few farmers applied the chemical 5 days before planting.

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- The farmers have stated that spraying Roundup was effective in killing herbaceous weeds however its difficulty to control Bluegrass it undergoes discoloration after several days of spraying and grow back to its original form.
 - They have lost count to how many times they weeded and others says 3 to 4 times as they have experienced high rainfalls this season.
 - They will continue spraying the Roundup followed by mechanical weeding.
4. Explain the outcomes of the close planting in CA experiments vs normal planting spacing.
- Close space reduces they yield potential and its difficult weed
 - Some farmers have resorted to using their normal spacing on their experiment plots
 - Others favors close spacing as it reduces weed infestation and preserve moisture for their crops when the plants have established high canopy cover.
5. Explain use of CA planters (MBLI, animal drawn, 2 rows). How did the arrangements work? Explain why CA planters used or not.
- Some of our farmers still use CA planters with few farmers at Stulwane using MBLI and 2-row planters was used in Vimbukhalo and Stulwane.
 - The 2-row planter in Stulwane does not drop the seeds hence they will need our field workers to assist them in fixing the problem before they start the planting season.
 - The 2-row planters at Eqeleni place the seeds deep in the ground resulting in low seedling emergence. They need to be assisted with calibrating it.
 - Other farmers prefer using hand hoes instead of MBLI because it is difficult to open the planting basins when the soil is dry but they say it works well when they plant beans using MBLI planters.
 - At Stulwane they have a haraka planter which does not work efficiently because offload all the seeds in one go; they would like to get a new haraka.
6. What are the observed differences between the 10x10s and strip cropping?
- Many farmers prefer planting Strips because it easy to plant even 2 people can do it. Weeding the strips was also easy to many compared to 10x10s. The strip was also good to others because they see that it allows air flow on their crops.
 - They say planting 10x10s is time consuming as they need to measure 10mx10m blocks which requires many ropes and sticks for measurements. However, other farmers were conflicted because they say; it is to weed the 10x10s compared to the strips because of it has shorter rows per block.
 - Other farmers who planted both strip and 10x10s suggested that they would like to plant both types in one day because it requires time and energy to weed when planted in different dates.
7. What are the observed outcomes of planting cover crops? Explain which ones have been planted, how and how they have been used?
- Summer Cover Crops, farmers had mixed emotions about them as other farmers says they harvested excellent yields and were able to feed their chickens from their harvest. Others says that they did not get enough yields as seeds were eaten by pigeons and sorghum attracted kids who came to steal it from plots and while they were at it, they destroyed other crops on their pathway leading into plots where cover crops were planted.
8. What are the observed outcomes of the mixed cropping (M+B and M+CP) when comparing to single planting of M?
- Farmers had mixed emotions about intercropping M+B and M+CP as other farmers saw that planting M only produces high yields for them. However other farmers said intercropping M+B is like hitting two birds with one stone because planting them both in one plot: provides them with Carbs and protein.
 - However, other farmers said that plots/strips with M+B have healthy vegetative growth and big cobs as opposed M only and M+CP plots. Intercropping M with legumes fixes atmospheric Nitrogen required by plants for growth and that why they see big cobs where they have intercropped with Beans.

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- An M+ CP plot tends to produce small cobs because Cowpeas grow tall and compete with maize plants for water and nutrients.
- M only plots are not bad because they provide them with small cobs compared to other plots, but the cob quantity is high as they have planted many lines on those plots producing more yields for them.

9. What are the observed outcomes of crop rotation?

- They have experienced greener maize and more yields when they have planted maize on a plot that had Lablab, Cowpeas and Beans from the previous season.
- They also noticed that Maize plots planted on plots that had SCC from the previous season tends to be much healthier with less diseases indicating that cover crop are able to remove soil borne diseases.
- Even the soil that had cover crops are darker when compared to other soils that had other plants which a sign that cover crops adds more organic matter on the soil.

10. What are the observed outcomes of planting perennial fodder species? Explain which were planted, how and how it worked.

- The farmers who planted fodder species were happy about the outcomes of their harvest as the Lespedeza and Tall Fescue grew well on their plots
- Ntombakhe and Thulile Zikode from Eqeleni who planted both the Lespedeza and Pensacola, said that their livestock liked the Pensacola more than the Lespedeza. They have spotted their livestock foraging on the Pensacola plots.
- Nothile Zondi and Khulekani Dladla who also planted both the Pensacola and Lespedeza were also joyful that their plots grew well, were even able to incorporate their fodder on the bales prepared for winter supplementation. They also both harvested the Lespedeza seeds to plant this season.

11. What were the observed differences between the normal maize planted (OPVs and hybrids) and the short season (early) maize planted?

- All Farmers from 4 villages agreed that maize hybrids (Pan53 and Pan6479) provided by MDF produced cobs which are bigger in size compared to maize cobs produced from their traditional seeds.
- The hybrids seeds are able to produce secondary cobs which are not common on the OPVs.
- The majority further stated that, they have noticed that the Pan53 leaf husk does not open even after full maturity which is a good trait as it prevents birds from picking the upper exposed seeds on the cobs. This also inhibits rainwater from penetrating through an opening created on the apex of the cob during the maturing stage as OPVs dry out, ensuring that the drying period of Pan 53 is quicker. Even the cobs of Pan53 are less affected by the common occurring maize rots experienced on the OPVs with leaf husk that opens during the drying stage.
- The short season maize reach maturity faster even when they are planted after couples of weeks of planting normal maize. They reach maturity simultaneously as if they were planted on the same date. However, the hybrids have better cobs.

12. What are observed outcomes of fungal infection of cobs and potential mycotoxins

- All villages said that they have not observed any significant fungal infections this season.

7. SECTION C: INPUT COSTS AND SAVINGS GROUPS

Inputs

1. How will you plan to buy your own inputs without input subsidy assistance?

- They will use the share out or loans from the VLSA to buy inputs
- One farmer said, she will be able to buy inputs using the remittance provided by her son.
- Danger Buthelezi said he will sell one of his livestock to buy inputs for this season.

2. How much can the savings group assist? What size loans or share outs are to be used for cropping?

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- They would like us to find quotations to establish how much they can borrow from the VLSA or use from their share out.
 - The field workers must assist them with calculations of quantities and the contributions required by each farmers for inputs taking into considerations their experimental plot size.
3. Is bulk buying for the learning group an option? How can you arrange this? (lists, collection of monies etc...)
- The farmers are willing to buy in bulk and the monies will be collected by their learning groups facilitators.

8. SECTION D: MARKET OPTIONS & FARMERS CENTRE

1. Can you give an indication of marketing options and how well this has gone?
- The farmers have stated that since they have not been producing large quantities, they have been eating their food.
 - With fewer farmers able to produce enough food to sell or donate some of their produce to their neighbors
 - Na Khumalo from Eqeleni sold 50 kg of her maize at the pension point
 - Zodwa Zikode sold 200kg yellow maize to buyers from Pietermaritzburg through our Field workers
 - Other farmers sold their bean harvest at the pension points.
2. Can you give a rough estimate of monies made from field crops in this season?
- R1000-R5000
3. % of group who has been eating only and eating and selling...
- Eating only 70%
 - Eating and selling 30%

9. SECTION E: PLANNING FOR THE COMING SEASON

Discuss options for the coming season, what each person wants to plant and how. Also, with the understanding that inputs cannot be provided. Support can be given for new crops and varieties (e.g. short season maize) and also for planting of cover crops and fodder species.

Decided about planting of 10x10s and strips and which crops to be tried.

2. MARKET DAY REPORT FOR OZWATHINI: NOVEMBER 2021

Ozwothini Market Day Report: November 2021

On the 03rd and 4th of November we had another successful market day in Ozwothini. We set up at the PMB taxi rank near the main road. On the 03rd we made R1280 and on the 04th we made R1684, over two days of the market we made R2964. Mama Doris Chamane made the highest on both days (Day 1- R530 and Day 2- R740) with a grand income of R1270 made over 2 days. The reason why she was the highest is because she was the only farmer who had potatoes and the demand for them was very high since they were selling at R70 per 10kg bag and R50 per R7kg bag. Although there are some challenges with the venue because there is no formal agreement with the rank manager in terms of the venue. Most of the farmers had spinach, cabbage and a little bit of other vegetables, we encouraged them again to grow different vegetables like lettuce, red cabbage, cauliflower, broccoli, onions, green peppers.

Table 1: Produce brought on our first market day.

Name and Surname	Village	Produce	Quantity	Price	Expected income
1. Mrs C.N. Buthelezi	Swidi	• Eggs(30's)	10	R50	R500
		• Cabbage	2	R10	R20
		• Beetroot	2	R10	R20
		• Spinach	5	R10	R50
2. Mrs N. Dube	Swidi	• Carrot	2	R10	R20
		• Spinach	4	R10	R40
		• Chives	1	R5	R5
3. Mrs D. Mwelase	Swidi	• Cabbage	1	R10	R10
		• Spinach	5	R10	R50
4. Mrs N. Hlophe	Hlathikhulu	• Green beans	3	R10	R30
		• Dry Beans	1 (5kg)	R150	R150
5. Mrs M. Xulu	Swidi	• Spinach	6	R10	R60
		• Pork	15	R30	R450
		• Herbs	5	R10	R50
		• Beetroot	6	R10	R60
		• Carrot	5	R10	R50
6. Mrs D. Chamane	Gobinsimbi	• Broilers	4	R110	R440
		• Spinach	10	R10	R100
		• Potatoes	11 -10kg	R70	R770
			1-7kg	R50	R50
		• Cabbage	5	R10	R50
		• Dry beans	4	R70	R280
• Chillies	1	R10	R10		
7. Mrs N. Zondi	Gobinsimbi	• Onions	4	R10	R40
		• Chillies	6	R5	R30
		• Green Peppers	11	R10	R110
		• Carrot	6	R10	R60
8. Mrs T. Ndimande	Mkhakhasini	• Broccoli	5	R10	R50
		• Onions	3	R5	R15
		• Chives	2	R5	R10
		• Beetroot	2	R5	R10
		• Herbs	5	R10	R50
		• amaranthus	1	R5	R5
9. Mrs N. Sibiya	Mkhakhasini	• Dry Beans	2(2kg)	R70	R140
			1(5kg)	R150	R150

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Figure 1: Some of the pictures that were taken during market day 1.

Table 2: Produce brought on our second market day.

Name and Surname	Village	Produce	Quantity	Price	Expected income
1. Mrs C.N. Buthelezi	Swidi	• Eggs(30's)	6	R50	R200
		• Spinach	4	R10	R40
		• Pumpkin	2	R10	R20
2. Mrs N. Dube	Swidi	• Carrot	2	R10	R20
		• Spinach	5	R10	R50
3. Mrs D. Mwelase	Swidi	• Cabbage	1	R10	R10
		• Spinach	4	R10	R40
		• Lettuce	3	R10	R30
		• Tomatoes	13	R10	R130
4. Mrs M. Xulu	Swidi	• Carrot	4	R10	R40
		• Pork	9	R30	R270
		• Beetroot	4	R10	R40
5. Mrs D. Chamane	Gobinsimbi	• Broilers	3	110	R330
		• Spinach	10	R10	R100
		• Potatoes	8x10kg	R70	R560
		• Cabbage	4	R10	R40
6. Mrs N. Zondi	Gobinsimbi	• Onions	5	R10	R50
		• Chillies	9	R5	R45
		• Green Peppers	12	R10	R120
		• Carrot	4	R10	R40

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7.	Mrs M. Mhlongo	Gobinsimbi	• Spinach	17	R10	R170
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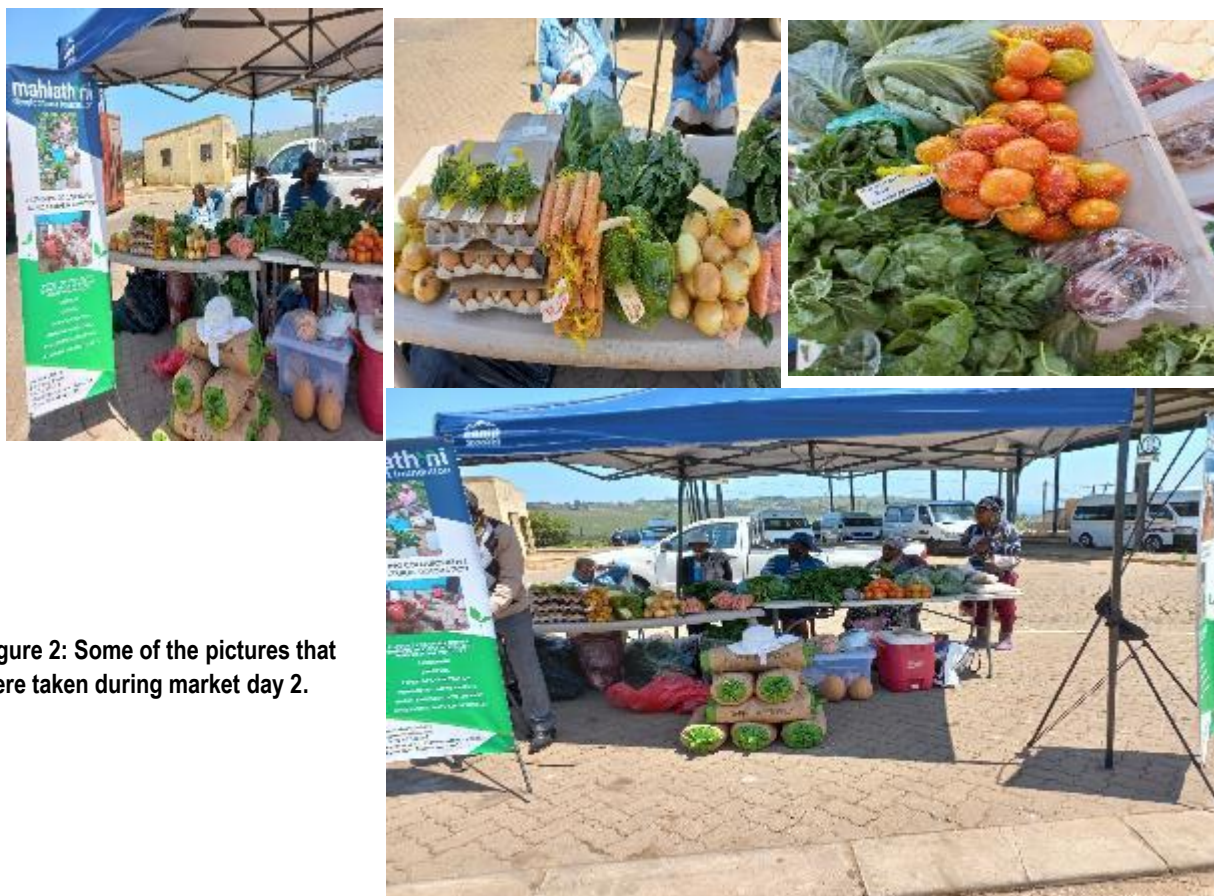


Figure 2: Some of the pictures that were taken during market day 2.

Table 3: Total Sales for The Month of November

NOVEMBER INCOME FOR EACH FARMER FROM SALES				
No	Name and Surname	Day 1 (03/11/2021)	Day 2 (04/11/2021)	Total Income
1	Mrs Doris Chamane	R530	R740	R1270
2	Mrs Nomcebo Zondi	R230	R184	R414
3	Mrs Mariam Mhlongo	She wasn't there on the first day.	R160	R160
4	Mrs Nora Sibiya	R0	She wasn't there on the first day.	R0
5	Mrs Nokuthula Dube	R40	R65	R105
6	Mrs CN Buthelezi	R170	R355	R525
7	Mrs Xulu	R110	R80	R190
8	Mrs T Ndimande	R20	She wasn't there on the first day.	R20
9	Mrs N Hlophe	R150	She wasn't there on the first day.	R150
10	Mrs D Mwelase	R30	R100	R130
	GRAND TOTAL	R1280	R1684	R2964