APPENDIX 5: KWAZULU-NATAL MIDLANDS ANNUAL REPORT

CA Farmer Innovation Programme for smallholders in KZN Midlands

Period: October 2016 - September 2017

Farmer Centred Innovation in Conservation Agriculture in upper catchment areas of the Drakensberg in Midlands of KwaZulu-Natal

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Project implemented by:

Mahlathini Development Foundation

Promoting collaborative, pro-poor agricultural innovation.

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Contents

Identification of the project

Description and selection of study areas

This programme was to expand the CA Smallholder Farmer Innovation Programme (SFIP) activities piloted in Bergville to other maize growing areas in the Midlands, i.e. Estcourt, Ladysmith, Greytown and New Hanover.

To achieve this the Cornfields Land Reform community outside Estcourt was targeted, as was Mpholweni, a communal tenure area, originally on church land close to Greytown.

In addition, an expansion was planned in Nkandla in partnership with the Siyazisiza Trust working with community groups in their agroecology projects.

Approach and Methodology

The farmer-centred innovation systems (IS) research process underpinning the programme, which is based on working intensively with farmer learning groups and local facilitators in each of the villages, has been continued and strengthened.

Within the learning groups farmer innovators volunteer to set up and manage farmer-managed adaptive trials as the 'learning venues' for the whole learning group. Farmer Field School (FFS) methodologies are used within the group to focus the learning on the actual growth and development of the crops throughout the season. New ideas (CA practices) are tested against the 'normal' practise in the area as the controls. Farmers observe, analyse and assess what is happening in the trials and discuss appropriate decisions and management practices. Small information provision and discovery-learning or training sessions are included in these workshops/ processes. These are based also on the seasonality of the crop and the specific requests and questions from farmer learning group participants.

Local facilitators are chosen from within and by members of the learning group to be a person who has the required experience, knowledge and a willingness to support the other farmer innovators in their implementation. Facilitators are only chosen and appointed where people with the appropriate skill and personality exists. Local facilitators receive a stipend for a maximum of 10 working days per month, for their support to the farmer innovators. They fill in detailed timesheets outlining their activities against which they claim a monthly stipend.

Learning group members agree to a season-long learning process and put forward the farmer innovators to run the trials. Each prospective innovator is interviewed and visited and signs an agreement with the Grain SA team regarding their contribution to the process. They undertake to plant and manage the CA trials according to the processes and protocols introduced as well as a control plot of the same size. For the latter, farmers provide their own inputs.

The adaptive trials are also used as a focus point for the broader community to engage through local learning events and farmers' days. Stakeholders and the broader economic, agricultural and environmental communities are drawn into these processes and events. Through these events *Innovation Platforms (IPs)* are developed for cooperation, synergy between programmes and development of appropriate and farmer-led processes for economic inclusion. These IPs also provide a good opportunity to focus scientific and academic research on the 'needs' of the process.

Key activities: October 2016-September 2017

Implementation in the three new sites in the Midlands, namely Estcourt (Cornfields), Mpholweni (New Hanover) and Nkandla has been somewhat disappointing. Contributing factors in the three include: continuation of drought conditions, extremely low soil fertility and poorsoils, lack of focus from implementing partners, inability of the facilitation team to provide enough support and lack of promised municipal support due to political instability.

As a consequence, activities in the Nkandla site will be discontinued in the coming season, those in Cornfields will be more focused with fewer trial sites and those in Mpholweni will be expanded into other villages in the New Hanover area.

VSLA's (Village Savings and Loan Associations) have been given some focus in the second half of this season, consolidating the process and record keeping for the 18 groups involved with Mahlathini Development Foundation across Bergville, Creighton, Nkandla and Matatiele. A training workshop for the record keepers was instrumental in this process as was the design and implementation of a new record keeping system that provides regular information for all the savings groups.

Stakeholder interactions have been intensive and have involved the Local Municipality LED Forums for Ubuhlebezwe and Dr Nkosazana Dlamini Zuma LMs' as well as the DRDLR regarding collaboration around Farmer Centres in their Agri-parks model. Good relationships have been built with the DARD and the Grain SA Farmer Development Programme (FDP) local mentoring / extension teams, specifically in Southern KZN, leading to a number of joint awareness raising events and good cooperation in implementation.

Soil health tests were repeated for a number of participants both in the EC and in Bergville areas and a few new participants have been included. These results have indicated an accumulation of organic carbon (ppm) in the CA plots when compared to control plots. The results have also shown an increase in carbon, year on year in the CA trial plots, despite the reduced soil health scores due the second season being a lot drier than the first

The table below outlines budgets and actual expenditure against key activities for the project. Expenditure is in line with budgets and remaining funding is sufficient for finalisation of the project.

TABLE 1: KEY ACTIVITIES, OUTPUTS AND DELIVERABLE OCTOBER 2016- AUGUST 2017; PLANNED AND ACTUAL.

Midlands, KZN Milestones: Farmer Centred Innovation in CA. October 2016- September 2017				
Milestones/ Outputs	**Key activities**	**Outcomes/ Deliverables**	**Actual expenditure Aug 2017**	**Budgets**
	Capital Equipment		R70 488	R73 000
	Documentation and M&E	Meeting and monthly reports	R50 797	R84 000
	Experimentation	List of participants, interviews and contracts, awareness and training	R303 638	R313 445

	Innovation Platforms	Stakeholder meetings, platform building and events	R24 535	R48 000
	Budget expenditure end June 2017		***R449 458***	***R518 445***
	Remainder		***R68 987***	
TOTAL: Oct 2016 - Sept 2017			**R 605 050**	

Results achieved to date

Three learning groups (Nkandla, Cornfields and Mpholweni) have been supported under this process. Training/learning workshops have been conducted for the following topics:

- **How to implement CA:** introduction to the principles, soil health, crop diversification and different planting options for CA
- **Working with herbicides and knapsack sprayers**: information on different herbicides, their uses and safety measures, as well as operation of knapsack sprayers, protective clothing, etc.
- **Trial plot layout and planting** using different CA planting equipment such as hoes, MBLI planters, and animal drawn not till planters.
- **Top dressing and pest control measures** for mid-season growth of crops and planting of cover crop mixtures where people have been interested in this option

The learning groups provide the innovation platforms also for discussion of the value chain issues, such as bulk buying, harvesting, storage and milling options and marketing.

In both Nkandla and Cornfields, mid-season visits revealed unsatisfactory growth of the trials. In both areas, prevailing weather patterns and bad soils have led to patchy germination in trials and slow subsequent growth of crops.

The table below outlines activities related to objectives and key indicators for the period of October 2016-August 2017.

TABLE 2: SUMMARY OF PROGRESS (OCTOBER 2016 - SEPTEMBER 2017) RELATED TO OBJECTIVES AND KEY ACTIVITIES

Objectives	Key activities	Summary of progress	% completion and comment
1. Document lessons learned	Documentation for learning and awareness raising	- Finalisation of CA manual (Eng and Zulu) - Soil health symposium – presentation and participation (Nov 2016) - Sharing of information through innovation platforms processes -Stakeholder engagement in the SKZN LM's, with DRDLR and DARD -LandCare funding for tools and inputs -Articles and promotional material	- 100 copies of E and Z manuals printed. A further print run expected. (50% complete) - 100 copies of group and individual savings books printed and in use. A further print run of 300 copies done in January 2017 (100% complete) - (100% completion; Madzikane, Nokweja Matatiele, Bergville -No articles or promotional material printed to date (0% completion)
	Final report	- 6 monthly interim and final reports	- 100%: Reports finalised
2. Increase the sustainability and efficiency of CA systems	1st level experimentation: 24	- 6 participants in Cornfields planted 400m^2 intercropping trials as advised. Other participants used the inputs for their regular maize planting and a few did not plant at all - In Mpholweni the group has been continued, and planting will start in the coming season	- 55%: Basic CA design-intercropping with maize beans and cowpeas on a 100m^2- 400m^2 plot, with a control plot managed entirely by the participant. Adaptation trials included late season planting of beans with a mixture of winter and summer cover crops.
	2nd level experimentation: 10	- 8 participants in Nkandla planted their 100m^2 intercropping trials.	- 100%. Participants opted to continue with intercropping practice from their 1st year.
	Develop and manage PM&E framework; – weekly and monthly M&E visits	- M&E forms redesigned and used - Digital monitoring system piloted	- 100%. Monitoring and yield data completed for all participants
	Facilitation of innovation platforms	- Co-facilitation of information sharing and action planning with stakeholders and role players	- 100%. LED and Agricultural Stakeholder Forums. Collaboration with DRDLR and farmer innovation platforms in Matatiele, Nokweja and Madzikane.
	CA working group, and reference group	- Attended and presented in Feb 2017 and Sept 2017	- 100%

A performance dashboard is indicated below. This provides a snapshot of performance according to suggested numbers and outputs in the proposal.

TABLE 3: PERFORMANCE DASHBOARD; SEPTEMBER 2017

Outputs	Proposed (March 2016)	Actual (July 2017)
Number of areas of operation	2	2
Number of villages active	3	3
No of 1st level farmer experiments	24	10
No of 2nd level farmer experiments	6	8
No of local facilitators	2	-
No of direct beneficiaries	30	18
Participatory monitoring and evaluation process (farmer level)	Yes	Yes
Soil biological assessments	54	53
Stakeholders forums	4	4

Overall process

As CA is an existing 'technology' the farmer level experimentation is in essence an adaptation trial process.

Year 1:

Experimental design is pre-defined by the research team (based on previous implementation in the area in an action research process with smallholders). It includes a number of different aspects:

- Intercropping of maize, beans and cowpeas
- Introduction of OPV and hybrid varieties for comparison (1 variety of maize and beans respectively)
- Close spacing (based on Argentinean system)
- Mixture of basin and row planting models
- Use of no-till planters (hand held and animal drawn)
- Use of micro-dosing of fertilizers based on a generic recommendation from local soil samples
- Herbicides sprayed before or at planting
- Decis Forte used at planting and top dressing stage for cutworm and stalk borer
- Planting of cover crops; winter mix in Autumn

Experimental design includes 2 treatments; planter type (2) and intercrop (2). See the diagram below.

	PLOT 1: Hand Hoe			PLOT 2: Planter	
10m or 5m	Maize 1, bean 1	Maize 2, Bean 1		Maize 1, bean 1	Maize 2, Bean 1
	Maize 1, Bean 2	Maize 2, Bean 2		Maize 1, Bean 2	Maize 2, Bean 2
	10m or 5m				
	PLOT 3:	OR repeat plot 1 and 2		PLOT 4:	
	Hand hoe	Planter		Hand hoe	Planter
	Maize 1,cowpea	Maize 1,cowpea		Maize 1, Dolicho	Maize 1, dolichos
	Maize 2, Cowpea	Maize 2, Cowpea		Maize 2, Dolicho	Maize 2, Dolichos

FIGURE 1: EXAMPLE OF PLOT LAYOUTS FOR THE 1ST LEVEL FARMER TRIALS.

The basic process for planting thus includes: Close spacing of tramlines (2 rows) of maize (50cmx50cm) and legumes (20cmx10cm) intercropped,;use of a variety of OPV and hybrid seed, weed control through a combination of pre-planting spraying with herbicide and manual weeding during the planting season and pest control using Decis Forte, sprayed once at planting and once at top-dressing stage.

Year 2:

Based on evaluation of experiment progress for year 1, includes the addition of options that farmers choose from. Farmers also take on spraying and plot layout themselves:

- A number of different OPV and hybrid varieties for maize
- A number of different options for legumes (including summer cover crops)
- Planting method of choice
- Comparison of single crop and intercropping planting methods
- Use of specific soil sample results for fertilizer recommendations
- Early planting
- Own choices

Year 3:

Trials are based on evaluation of experimentation process to date; to include issues of cost benefit analysis, bulk buying for input supply, joint actions around storage, processing and marketing. Farmers design their experiments for themselves to include some of the following potential focus areas:

- Early planting; with options to deal with more weeds and increased stalk borer pressure.
- Herbicide mix to be used pre and at planting (Round up, Dual Gold, Gramoxone)
- A pest control programme to include dealing with CMR beetles
- Intercropping vs crop rotation options
- Spacing in single block plantings
- Use of composted manure for mulching and soil improvement in combination with fertilizer
- Soil sample results and specific fertilizer recommendations
- Planting of Dolichos and other climbing beans
- Summer and winter cover crops; crop mixes, planting dates, management systems, planting methods (furrows vs scatter)

- Seed varieties; conscious decisions around POVs, hybrids and GM seeds
- Cost benefit analysis of chosen options

Possible agrochemical spraying regime options

1. Roundup 2 weeks before planting - if there has been some rain. DualGold at planting (just after with Decis Forte/Kemprin).

2. Gramoxone at planting (just before or after planting) with or without Dual Gold and Decis Forte/Kemprin – Dual Gold does not work on dry soil (followed by heavy rain)

Soil health results and analysis

An attempt was made to repeat the soil health tests for the same participants as in the 2014-2015 season and to expand the results to a few more participants in both the Eastern Cape and Bergville sites.

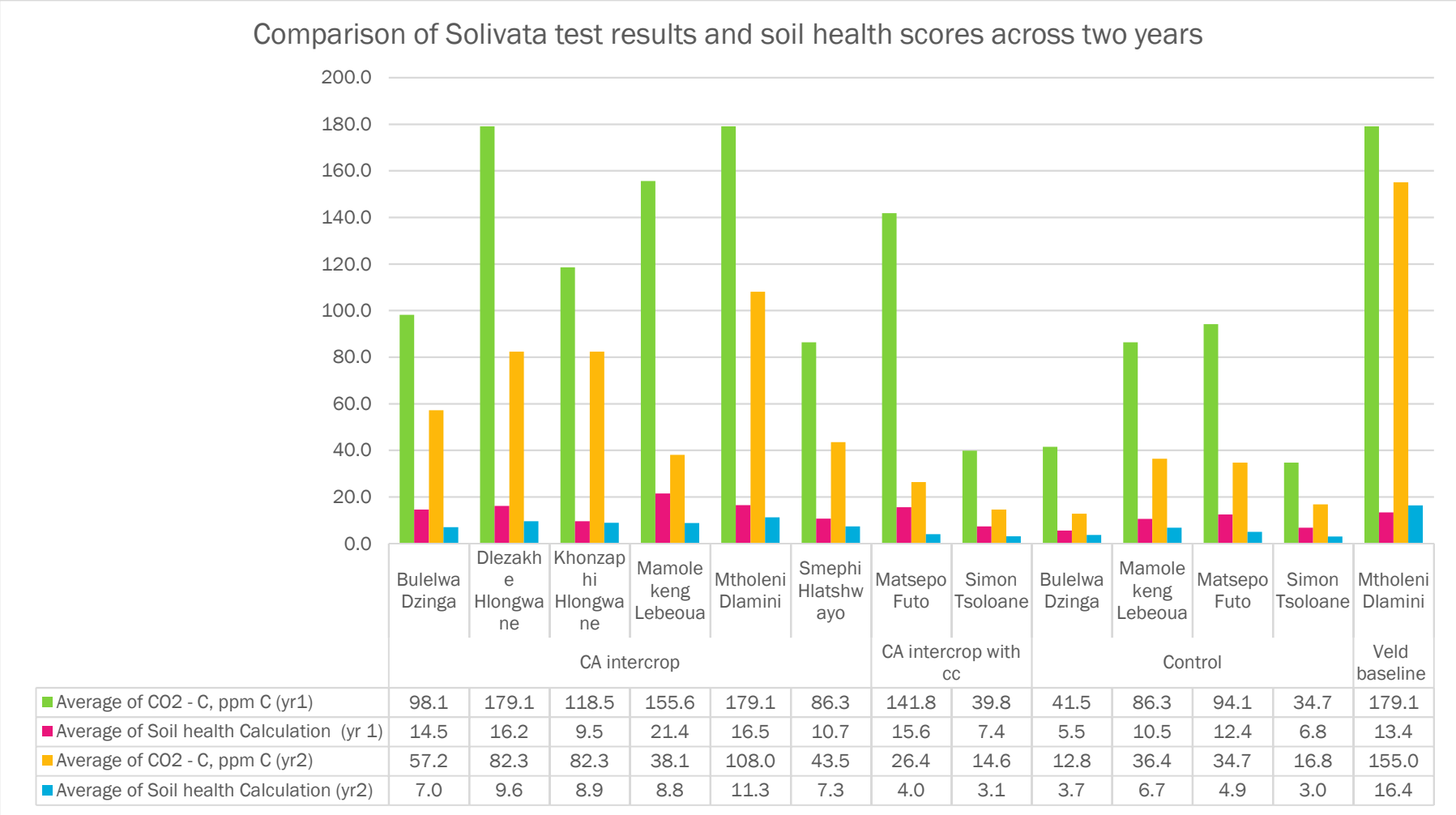
As the 2015-2016 season saw quite a severe drought the expected trends in the soil health results were not clearly visible.

Below, samples that were comparable across the two seasons 2014-2015 and 2015-2016, have been analysed. There is a strong and obvious trend where the microbial activity (as measured by the Solvita CO_2 respiration tests), as well as the soil health scores (which is a combination of the Solvita, the C:N ratio and organic C and N for each sample), have reduced proportionally in the second season.

What this indicates is that the prevailing seasonal climatic conditions affect the outcomes of these tests substantially and to an extent where changes due to farmers' practices are somewhat obscured.

- All the Solvita test results- for Control plots, CA trials and Veld baselines were substantially higher in the first (wetter) season than the second (dry) season.
- There are significant differences between CA and control practices – with the CA plots showing substantially higher Solvita test results and Soil health scores than the control plots – across both seasons.
- This also shows that with these soil health parameters it works better to compare practices against each other in one season but not that well to compare results across seasons- due to the variability brought about by the weather conditions.

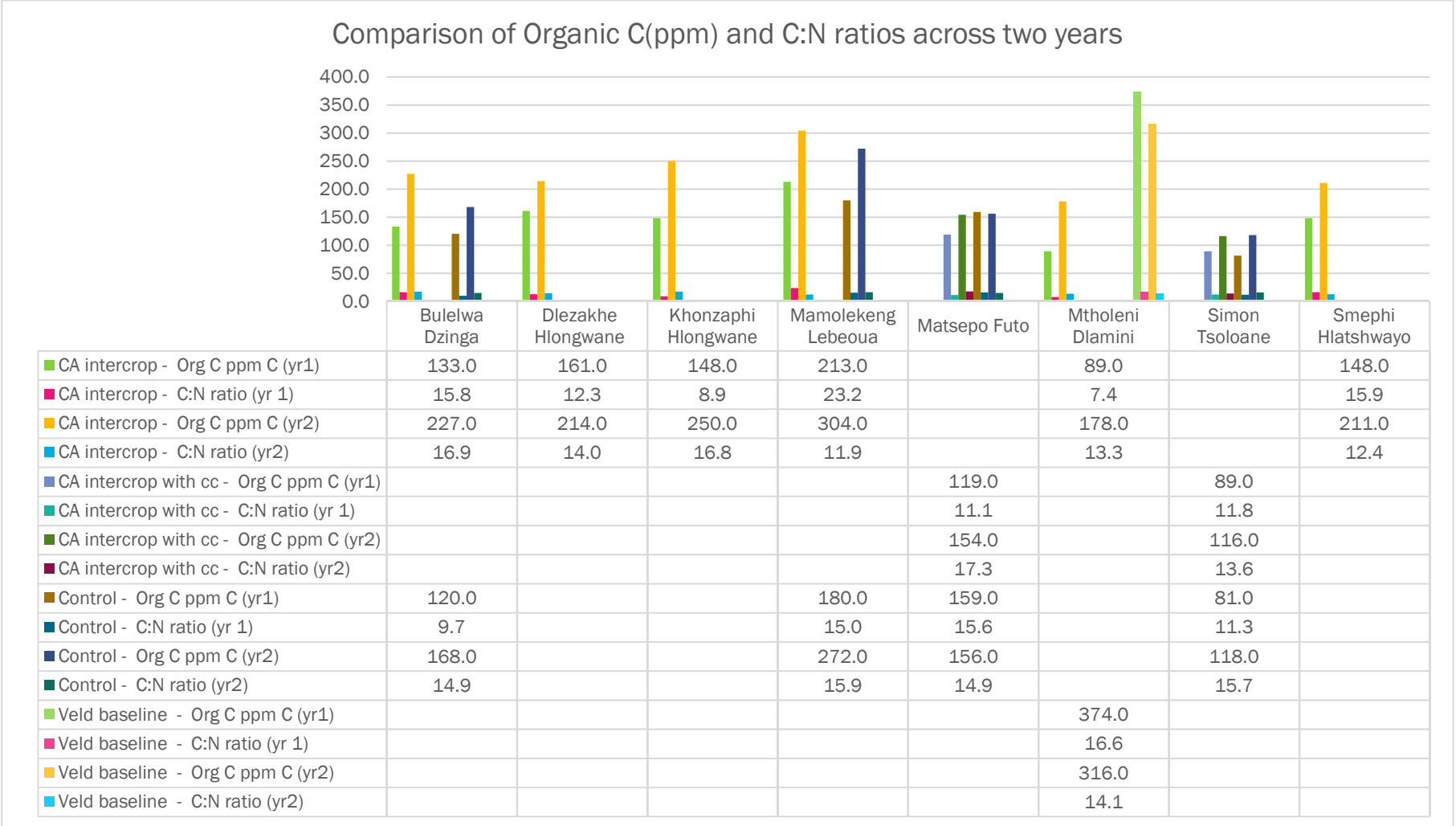
The figure below outlines the results discussed here.



Average of CO2 - C, ppm C (yr1)	98.1	179.1	118.5	155.6	179.1	86.3	141.8	39.8	41.5	86.3	94.1	34.7	179.1
Average of Soil health Calculation (yr 1)	14.5	16.2	9.5	21.4	16.5	10.7	15.6	7.4	5.5	10.5	12.4	6.8	13.4
Average of CO2 - C, ppm C (yr2)	57.2	82.3	82.3	38.1	108.0	43.5	26.4	14.6	12.8	36.4	34.7	16.8	155.0
Average of Soil health Calculation (yr2)	7.0	9.6	8.9	8.8	11.3	7.3	4.0	3.1	3.7	6.7	4.9	3.0	16.4

FIGURE 2: COMPARISON OF SOLVITA TEST RESULTS AND SOIL HEALTH SCORES FOR A SELECTION OF PARTICIPANTS FROM THE EC AND KZN FOR 2014-2015 AND 2015-2016.

When one compares the Water Exchangeable Organic Carbon (WEOC) (ppm) in the soil and the organic C:N ratio the trend is the opposite, with increased values seen for almost all samples in the second drier season (2015-2016). The WEOC is an indicator of available food sources for microbes, stated very simplistically, while the C:N ratio provides an indication of the extent of mineralization/ immobilisation, or conversion of carbon 'food' to plant available sources (through mineralisation) when the C:N ratio is below 15. If microbial activity is depressed with a high C:N ratio (higher than 15) or immobilisation, or in drier seasons, then one would expect that the organic C would remain underutilized in the soil. This trend is clearly shown in the figure below. One would also expect that the C:N ratio would increase given the lower rate of mineralization, which is also evident. Again, the overall climatic trends overshadow differences individual participants' farming practices may have effected.



	Bulelwa Dzinga	Dlezakhe Hlongwane	Khonzaphi Hlongwane	Mamolekeng Lebeoua	Matsepo Futo	Mtholeni Dlamini	Simon Tsoloane	Smephi Hlatshwayo
CA intercrop - Org C ppm C (yr1)	133.0	161.0	148.0	213.0		89.0		148.0
CA intercrop - C:N ratio (yr 1)	15.8	12.3	8.9	23.2		7.4		15.9
CA intercrop - Org C ppm C (yr2)	227.0	214.0	250.0	304.0		178.0		211.0
CA intercrop - C:N ratio (yr2)	16.9	14.0	16.8	11.9		13.3		12.4
CA intercrop with cc - Org C ppm C (yr1)					119.0		89.0	
CA intercrop with cc - C:N ratio (yr 1)					11.1		11.8	
CA intercrop with cc - Org C ppm C (yr2)					154.0		116.0	
CA intercrop with cc - C:N ratio (yr2)					17.3		13.6	
Control - Org C ppm C (yr1)	120.0			180.0	159.0		81.0	
Control - C:N ratio (yr 1)	9.7			15.0	15.6		11.3	
Control - Org C ppm C (yr2)	168.0			272.0	156.0		118.0	
Control - C:N ratio (yr2)	14.9			15.9	14.9		15.7	
Veld baseline - Org C ppm C (yr1)						374.0		
Veld baseline - C:N ratio (yr 1)						16.6		
Veld baseline - Org C ppm C (yr2)						316.0		
Veld baseline - C:N ratio (yr2)						14.1		

FIGURE 3: A COMPARISON OF WEOC (PPM) AND C:N RATIOS FOR A SELECTION OF PARTICIPANTS FROM THE EC AND KZN FOR 2014-2015 AND 2015-2016

The following comments can be made from the figure above:

- The Organic C in ppm was higher for all repeat tests in the 2nd year for the CA plots and the control plots. The organic C in ppm was 30% higher in the 2nd year for the CA plots and 22% higher in the control plots. Accumulation of organic C in the CA plots is thus higher than in the control plots.
- Values for Organic C in ppm for CA plots are higher for the 2nd year compared to the 1st year by values of between 30-100%. This shows a lot more organic carbon being available in 2nd season of CA when compared to the previous year and indicates an accumulation of carbon over time in the CA plots.
- The C:N ratios are higher for the 2nd year than the first year and are also higher for the CA plots in the 2nd year. This indicates towards soil carbon accumulation and higher levels of soil organic matter. Thus, it also points towards potentially higher microbial activity, due to more food being available, if and when conditions are favourable (e.g. C:N ratio, temperature, water, etc.). This trend should be verified also by increases in Solvita tests (in the figure above). This however is not the case from data shown above, where Solvita tests were lower in the 2nd season.
- The veld baseline data however show a different trend. Here the Organic C in ppm and the C:N ratios are lower in the second season. This is to be expected due to the substantially drier conditions in the 2nd season.

In summary the above figure shows that the practice of CA provides for increased organic carbon (ppm) and higher C:N ratios for participants even in drought conditions when these parameters would naturally tend to be lower than in wetter seasons. It also shows that although microbial activity may be reduced in drier seasons (indicated by the lower Solvita test results), there is still an accumulation of organic carbon in the soil.

The table below summarises the soil health data per year and per area, to give a clearer indication of the soil health parameters for the two areas.

Overall the soil health parameters show higher values in the Bergville area, indicative of the fact that they have much higher percentage clay soils in that area with a naturally higher soil fertility than the sandy soils in the EC.

Matatiele

		2014/2015					2015/2016				
Name	***Sample***	***CO2 - C, ppm C***	***Organic C ppm C***	***Organic N ppm N***	***C:N ratio***	***Soil health Score***	***CO2 - C, ppm C***	***Organic C ppm C***	***Organic N ppm N***	***C:N ratio***	***Soil health Score***
Mamolekeng Lebeoua	Control	*86,3*	*180*	*12*	*15*	*10,51*	*36,4*	*272*	*17,1*	*15,91*	*6,72*
Mamolekeng Lebeoua	CA intercrop	*155,6*	*213*	*9,2*	*23,2*	*21,44*	*38,1*	*304*	*25,6*	*11,88*	*8,81*
Matsepo Futo	Control	*94,1*	*159*	*10,1*	*15,6*	*12,44*	*34,7*	*156*	*10,5*	*14,86*	*4,95*
Matsepo Futo	CA intercrop with cc	*141,8*	*119*	*10,7*	*11,1*	*15,6*	*26,4*	*154*	*8,9*	*17,30*	*3,96*
Simon Tsoloane	Control	*34,7*	*81*	*7,2*	*11,3*	*6,75*	*16,8*	*118*	*7,5*	*15,73*	*3,00*
Simon Tsoloane	CA intercrop with cc	*39,8*	*89*	*7,5*	*11,8*	*7,36*	*14,6*	*116*	*8,5*	*13,65*	*3,08*
Bulelwa Dzinga	Control	*41,5*	*120*	*12,3*	*9,7*	*5,54*	*12,8*	*168*	*11,3*	*14,87*	*3,67*
Bulelwa Dzinga	CA intercrop	*98,1*	*133*	*8,4*	*15,8*	*14,54*	*57,2*	*227*	*13,4*	*16,94*	*6,99*

Bergville

		2014/2015					2015/2016				
Name	***Sample***	***CO2 - C, ppm C***	***Organic C ppm C***	***Organic N ppm N***	***C:N ratio***	***Soil health Score***	***CO2 - C, ppm C***	***Organic C ppm C***	***Organic N ppm N***	***C:N ratio***	***Soil health Score***
Smephi Hlatshwayo	CA intercrop	*86,3*	*148*	*12,1*	*15,9*	*10,65*	*43,5*	*211*	*17*	*12,41*	*7,31*
Dlezakhe Hlongwane	CA intercrop	*179,1*	*161*	*13.1*	*12,3*	*16,15*	*82,3*	*214*	*15,3*	*13,99*	*9,55*
Mtholeni Dlamini	Veld baseline	*179,1*	*374*	*22,5*	*16,6*	*13,35*	*155*	*316*	*22,4*	*14,11*	*16,39*
Mtholeni Dlamini	CA intercrop	*179,1*	*89*	*12,1*	*7,4*	*16,48*	*108*	*178*	*13,4*	*13,28*	*11,25*
Khonzaphi Hlongwane	CA intercrop	*118,5*	*148*	*16,6*	*8,9*	*9,5*	*82,3*	*250*	*14,9*	*16,78*	*8,90*

Progress per area of implementation

Nkandla

Mphotolo

The Learning group in Mphotholo in upper Nkandla was discontinued for the following reasons:

- The group remained small with 5-6 participants consisting mostly of retired men and one school teacher. They could best be described as 'hobby farmers"
- Meetings with the other members of the maize cooperative operating under the Department of Agriculture were not called, despite a number of attempts to do so. Communicating directly with the local extension officer, also failed to bear fruit. He voiced the opinion that CA was not compatible with the Department's support, given that they assist farmers with ploughing, inputs and planting.
- Members of the group found it hard to navigate working with two service providers with different approaches.

Vulamhlamvu

The relationship cultivated with the Siyzazisiza Trust was strengthened:

- Siyazisiza Field staff were provided with a week-long training in Climate Smart Agriculture practices (water wise farming) and implementation that included Conservation Agriculture principles and approaches in July 2016.
- Field staff were further provided with hands-on experiential training in implementation of CA with their farmer groups (October-November 2016).
- Field staff and a small selection of farmers from the Vulamhlamvu learning group attended a farmers' day in Bergville (Ndunwane, March 2017)
- The Siyazisiza Trust supported the initiative financially by providing inputs for the learning group in Vulamhlamvu, and
- A workshop was held to plan expansion of the CA process with more smallholder groups supported by Siyazisia Trust. Representatives form 8 different gardening groups attended this meeting (10 May 2017)

Despite these efforts the expansion of the innovation platforms in this area were not forthcoming. The existing group in Vulamhlamvu noted their interest to continue with the trials in the same way as before, doing a joint trial in one plot, and was not keen to individually undertake trials. They cited lack of fencing and roaming cattle as their primary reason. The group's interest in receiving free inputs and facilitation support is much higher than their interest in implementing CA principles.

No responses were received from the new groups. In addition, the Siyazisiza Trust communicated that further financial support would be difficult for them. A decision has thus been made to withdraw from the area.

Progress in Vulamhlamvu

Participants felt that the first season of CA planting was very positive as maize grew well and beans were harvested as a 'new' crop in the area. They were however disappointed by receiving no maize harvests due to cattle invasions in their field. They were reluctant to do the CA trials in their own homesteads, citing that there is not enough space. These homestead plots need to be shared with other family members. The women mentioned also that their husbands were not keen on the CA process preferring to plant maize using conventional tillage practices. Weeding is a big issue within the CA system and is more manageable when tillage is used. Participants did not compare yields with their conventional plots, as most of the maize was harvested as green mielies.

Learning group members showed interest in implementing an organic version of CA in their plots. Although there is a lot of fallow land in the area that can be used, participants felt that due to the lack of fencing and hard work required to bring these fields back into production, that this was not an option for them. A discussion around the issue of livestock management was held and the community is acutely aware of the need for grazing management. They however requested that a meeting be set to bring the traditional authority (responsible for this) and other stakeholders such as the Department of Agriculture together to discuss options. It was clear that even though some of the women are livestock owners, that they did not feel empowered to tackle the grazing issues among themselves.

For this second season of CA experimentation in Vulamhlamvu, 8 members of the original group opted to continue and 2 new members joined the group. They opted to again plant their experiments together in one fenced plot, donated by Mr Mthembiso Shezi. Each undertook to do a 400m^2 intercropping trial. The idea was for Siyazisiza to negotiate with Mr Shezi to obtain a lease agreement for a larger plot, or plots in future. This however was not done.

TABLE 4: VULAMHLAMVU CA GROUP MEMBERS 2016-2017

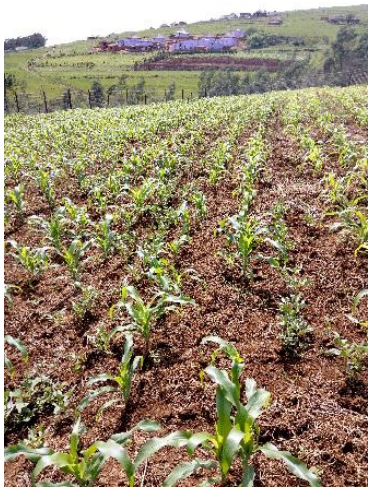
No	NAME	SURNAME	Gender, age	CELL NUMBERS
1	Zithini	Biyela	F, 75 yrs	076 494 9767
2	Ntombithini	Majola	F, 61 yrs	072 717 3629
3	Zenzile	Mthimkhulu	F, 60 yrs	
4	Thembisile	Masango	F, 54 yrs	078 794 0321
5	Ntozini	Biyela	F, 66 yrs	
6	Buyi	Shezi	F, 50 yrs	
7	Sinenhlanhla	Biyela	F 48 yrs	
8	Babhekile	Majola	F, 58 yrs	
NEW				
9	Sthembiso	Shezi		074 855 6594
10	Sibangeni	Shezi		

These members belong to Maphotwe Village Level Savings Association (VLSA), , that has been running smoothly. Members felt that they could afford the CA inputs subsidy from their savings.

Spraying of the plot and planting commenced on 20 October, 2016 – the date preferred by the group. This early planting was expected to increase the yield potential of the maize in this area considerably. Spraying was done on the same day as planting and as a result weed competition in the plot was very high. A white maize hybrid SC701 was used and the bean variety planted was

Gadra. The overall yield for beans was low at 23,5kg (~0,54 t/ha). As maize was again harvested as green mielies, estimating yield became a bit of an impossible task. Judging from the growth however, yield would have been reasonable at between 1,8-2,2 t/ha. This was estimated from no of cobs and weight of grain/cob.

Above Clockwise: A group member spraying Round up prior to planting. Mrs Biyela preparing the planting basins for maize and the learning group planting the maize together.



Above left and right. Crop growth monitoring in December 2016 showed fastidious weeding by participants. Germination was around 90% for maize, but much lower for beans and cowpeas. Growth was a bit disappointing- with evidence of run off and yellowing due to subsequent lack of nutrients.

Above and right: Growth of the trial plot in Nkandla in March 2017.

Cornfields

This land reform community has turned into a vast, sprawling settlement with almost 800 households as the arable lands (`80 ha) closer to the river have been over-run by cattle and further individuals setting up homesteads. Householders have opted to plant within smaller fenced fields close to their homes. The area is over-stocked and there is substantial erosion.

Here the programme was initiated by starting trials with 2 participants from each of the 8 villages in Cornfields. A demonstration workshop was held where all participants joined in planting one trial plot together. They were then provided with inputs for their trials and asked to plant their trials at their homesteads. Of the 15 participants a total of 10 attempted the CA plots.

The Grain SA CA trials (400m^2) were planted 6-12 December 2016 once rains had properly started. Gramoxone /Paraquat was sprayed at planting, along with Decis Forte for cutworm and stalk borer. A hybrid variety of maize (Pan 6479) was used, intercropped with Gadra sugar beans and mixed brown cowpeas. Both hand hoes and MBLI hand planters were used.

Late season monitoring in April 2017 confirmed the poor growth of the CA trials in this area. Most participants had not weeded their plots and added to the poor soils in the area and general drought conditions, this led to poor germination and growth. In addition, striga/witch weed, present in a number of the fields, further depressed growth and yields.

This group was not given enough support by the facilitation team who managed to visit the area only 4 times during the year. There is however still interest in the community to continue and a plan has been put in place to do 1 consolidated trial plot per village for 6 of the villages in the coming season.

Progress

The trials were meant to be 400 m^2 although some appeared smaller/larger than that. Overall, the control plots appeared to be performing better than the CA plots. Most of the CA plots had patchy germination and the maize appeared stunted. In most households the farmers had not weeded, which could explain the stunted growth and light green colour of the maize. Under CA, lower quantities of fertilisers and chemicals are applied compared to conventional maize fields which could explain why the control plots appeared to be performing better. Below is a brief summary of progress for a sample of the 10 participants who planted trials, from a visit conducted towards the end of April 2017.

Generally, germination for maize was very patchy and beans did not germinate or grow well, or at all. Maize showed signs of nutrient deficiencies and drought stress.

Yearly group review

Eleven (11) participants attended the meeting. They agreed that the season was difficult, with the highest maize yield recorded as 3,46 t/ha for Mr Petros Khumalo, whose fields are in the old cropping fields of the farm. A few participants had reasonable yields for their beans and cowpeas. Participants agreed that the soils in some of the villages are really 'bad', infertile, and sandy, and very hard when dry. The season also started very hot and dry which reduced germination substantially.

Comments for the season are summarised below:

- The herbicides used – Gramoxone had very little effect on the weeds, as there was as yet little growth at planting. A similar situation prevailed with the RoundUp. Because of this participants had to do a lot of hand-weeding.
- Participants felt that they saved some money planting this way, as they did not need to hire tractors for ploughing.
- The MBLI planters did not work well due to the hard soils.
- Participants felt that CA would not work in some of the villages due to the poor and shallow soils. But that there is potential in some of the areas.
- The PAN 6479 grew very well when the rains finally started, but yields were still low due to the slow dry start of the season. PAN53 was expected to do better than it did- as PAN6479 actually performed better for people
- Participants like the idea of working together, as it reduces the work and people can learn from each other, but it is difficult to coordinate as the villages are quite far apart.
- Costs for conventional tillage and the CA were compared. Mr Miya produced the small table below. It can be seen that there is a saving of around R400 for the CA, although this includes the subsidy.

Conventional tillage(half a Ha)	**Cost (R)**	**Conservational Tillage (400m^2)**	**Cost (R)**
Tractor hire	500		
Ploughing with tractor	R1 500	Input subsidy	R 150

Seeds	R 200	Food for labour	R 70
Fertilizer	R 323		
Food for labour	R100		
Total	R2623	Total	R 220

- The group is keen to start a savings group for inputs as presently people in the village do not do any savings.

Below are some examples of a few of the participants' plots for this season.

Ms. Khumalo

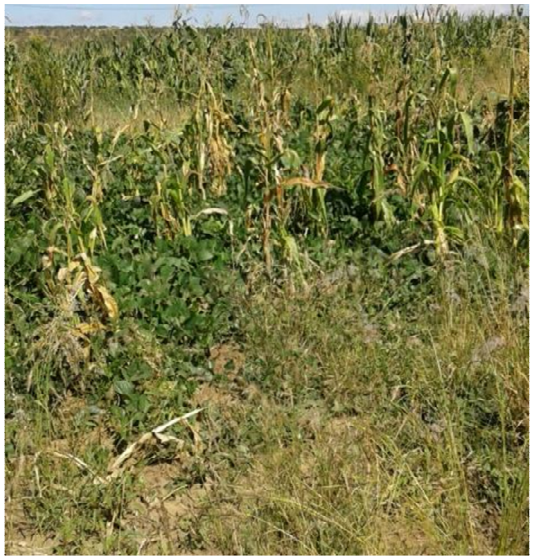
Above left: Ms Khumalo's CA trial plot. No beans or cowpeas germinated and patchy growth of maize is evident. Above right; the control plot was ready for harvesting – maize showed better growth here.

Mr and Mrs Choncho

Far left and left: A view of their CA trial plot in January and April 2017. Cowpeas grew very well. Beans, although with patchy germination, grew well subsequently and a reasonable yield should be realised. Maize growth was reasonable

Kwa Sithomo (by the river)

The trial is situated by the river away from the homesteads in a small portion of the arable fields. The maize in the CA plots was stunted and weeds were dominant. The cowpeas again grew well and assisted in some weed control. Beans were not in evidence. The control plots appeared significantly better than the CA plots.



Right: CA Plots (front), control plots (back). Cowpeas can be seen in the CA plot along with high incidence of weeds and struggling maize

Zandile Dubazane

The maize was light green and stunted in the CA plots. The beans had dried up and were ready to harvest. Cow peas were still green. An interesting observation was that the soil on the CA plots was dry and hard compared to the soil in the control plot which was moist and soft. Possible reasons were that the soil in the CA plot may have more clay than the one in the trial plot and therefore goes hard and cracks when dry. Another reason could be because the soil was never ploughed and so its structure remained intact and there was less infiltration of rain water. Such 'hydrophobic' soils with a tendency to capping, are known to be difficult for initiation of CA.

Above left and right: Mrs Dubazane's CA plots, with weed overgrowth. Again cowpeas have maintained better than the beans and maize.

Right: Her control plot – recently weeded

Mr Mkhize

The soil on Mr Mkhize's field was darker than that in the other households. However, there were a lot of weeds on his plots which could impact negatively (far right) on his yield and he also had a problem with termites damaging his beans (right).

Mrs Khumalo

The CA trial was growing well compared to other households. The beans were ready for harvest and the cowpeas were still green. The maize showed good germination, however the leaves were yellow brown in some plants and were drying up. This could be due to the presence of weeds, of particular note was witch weed (striga), which is a parasitic weed that leads to reduced yields in maize.

Above left to right: Striga presence in Mrs Khumalo's field. Her control plot and the CA trial with reasonable growth of both maize and beans.

Thobile Dlamini

Above left: Thobile's CA trial plot showing patchy germination and growth as well as an overgrowth of weeds. Above right: Her control plot looked substantially better.

Stakeholder engagement

For Southern KZN a strategy has been followed of working closely with the Local Municipalities in the area, namely Ubuhlebezwe and Dr Nkosazana Dlamini Zuma (before known as Ingwe), to embed the Grain SA CA programme into the local economic development strategies of the areas.

This has entailed a number of different processes and presentations:

1. Participation in the agricultural development and LED forums of the two LM's.
2. Participation in the latest RASET process launched end June in Harry Gwala District Municipality
3. Negotiations with one of the provincial directors for DRDLR regarding involvement in piloting our local farmer centre model as part of the Agriparks initiative
4. Linking to Agricultural Development Forums in Ubulhlebezwe, Dr Nkosazana Dlamini Zuma and Okahlamba LMs. These are mostly still in their infancy and are stakeholder sessions combining farmer representatives with role players and service providers to provide a platform for information sharing and co-operation.
5. Participation in events, conferences and information sharing platforms

RASET

RASET stands for Radical Agrarian Socio-Economic Transformation. Basically, it aims to re-direct the public expenditure to procuring food items from smallholder farmers and SMMEs. This is a KZN government programme. It was officially launched by a handful of KZN cabinet ministers, the KZN Premier and the President of the Republic on the 27 of June 2017. Serious commitments by the KZN ministers were made regarding setting aside 50% of their food procurement budgets. This is estimated to at least R2,5 Billion per year.

Secondary co-operatives are currently established for each local municipality in the province. Only three commodities are targeted for now, namely, crops, red meat (beef) and poultry. Each commodity will establish its secondary co-operative. The Development Agencies in each district municipality will be responsible for championing RASET. Each secondary co-operative will

supply produce from subsistence and smallholder farmers to the district market managed by the Development Agency.

Ubuhlebezwe Crop Farmer Secondary Co-operative was established on 28th June 2017. Membership to the secondary co-operatives will be opened to primary co-operatives, for profit companies, non-profit companies, sole proprietary and trusts. The main roles of the secondary co-operatives were listed as follows;

1. Provide farmer support to members of a secondary co-operative
2. Provide business support on issues of administrative compliance (SARS and CIPC), secretarial and general business management
3. Provide logistics for transporting produce and ensuring that producers are paid on time
4. Manage the sharing of equipment and other farming tools

There are some serious mismatches between the intentions of this programme and the local capacity and Government commitment to actually implement the process. It is not expected to succeed. Mahlathini's involvement will continue but primarily to stay informed and to be able to provide a conduit between the farmers and the ideas and expectations being promoted by Government through this process

DRDLR

Mahlathini has an interest in promoting the community-based farmer centres that are developing in the region as an alternative to the secondary cooperatives within the new RASET (Radical social and Economic transformation) initiative and the agripark programme. The latter focusses on creating an economic pathway within government structures for agricultural produce.

In this regard meetings were also held with one of the Directors of DRDLR in the province, Ms Lisa del Grande, who had previously indicated a potential for funding pilots of alternative models. See attachment 1 (Concept proposal for Farmer Service Centres linked to maize and poultry production: April 2017) for the concept proposal designed for this purpose. This process has progressed substantially, but the outcomes are that the DRDLR is in essence more interested in finding organisations that can support their process (for the most part un-funded) and do not have pathways for supporting other organisations. MoU's first need to be set up with such organisations and this process takes time.

DRDLR is interested in working with Grain SA in an area called Groenvlei (outside Utrecht) to be part of a planning and implementation process for an Agripark in that area.

A further meeting with the regional coordinator for DRDLR, based in Ixopo, Mrs Hlengiwe Mazibuko was unfruitful in terms of discussing our proposal. The DRDLR feeling is that NGOs should support their initiative and assist the secondary cooperatives. They further indicated their impression that NGOs are not adding value to the process and cannot 'do' anything that the Department itself cannot do.

Events and conferences

LandCare Conference (October 2016)

LandCare is a community participation model, implemented through DAFF and the provincial Departments of Agriculture, based on voluntary groups of farmers and other committed people

working together at a local level to address local issues that vary from place to place given issues in the locality and originated in Australia back in the year 1986. The National LandCare Conference, held on 3-6 October in Kimberly, South Africa was the 7th Biennial conference tasked with addressing land degradation issues across the country. The idea behind bringing relevant stakeholders together was aimed at sharing best practices and technologies to aid in protecting as well as rehabilitating degraded agricultural resources which translate to means of food security, job creation and sustainable livelihoods. The conference was jointly convened by DAFF and the Northern Cape Department of Agriculture, Land Reform and Rural Development. The theme for the conference was termed:

"Making a Land Care difference towards achieving land degradation neutrality."

The audience was a mixture of general public, private and public sectors from all over the country. Various departments' management and extension staff were there, including the ARC, Grain SA, FAO, farmer associations and farmers themselves were also represented by a few individuals. Mr. Xaba from Madzikane was one of them under the Cedara banner, Mr. Thabani Madondo represented farmers in the Okhahlamba Local Municipality. Mahlathini Development Foundation had Mazwi Dlamini representing the organization where he also presented work his organization does through the CA SFIP in a separate session convened by Dr. Hendrik Smith, CA Facilitator at Grain SA. The idea here was also to build bridges with other institutions with the aim of making more concerted efforts in addressing the degradation of natural resources for agricultural activities for food security.

Site visits to existing LandCare activities in the area included showcasing CA farming (in Prieska), rehabilitation and protection of natural resources, alien plant clearing and stream rehabilitation, soil and water management and livestock rearing.

Some of the resolutions made at the conference to carry the LandCare process forwards are:

- Create awareness of the role of the LandCare approach in achieving pertinent issues in the global agenda such as meeting country level targets on land restoration and land degradation neutrality;
- Continue reaching out to other countries in Africa through partnerships and LandCare capacity building events;
- Position the LandCare approach as the best option currently for scaling-out sustainable livelihood interventions;
- Give special focus and support to regional and national level LandCare networks through fundraising at regional and country level, awareness creation and partnership development, and documentation and dissemination of lessons;
- Make more spirited efforts towards the development and realization of the "Green belt in the Southern Africa states" through enhanced fundraising and awareness creation by 2017;
- LandCare focal points to continue taking the lead in mainstreaming the approach in country programs and projects;
- Provide support and attendance to the LandCare Master class which will be held in Zambia in December 2016;
- Continue to support awareness creation and partnerships through side events in major conferences and meetings;

- Members to continue with regular cost-effective meetings and teleconferences at least on a quarterly basis.

These resolutions will be used to strengthen the LandCare network and will inform future initiatives and gathering.

Soil Health day (October 2016)

This was the first national event in soil health organised by the Soil Health Support Centre and Nulandis, on the 26th of October2016 in Pretoria.

The MDF team attended this event and contributed to one of the panel discussions. Some of the key messages of the day included:

- Profit margins are decreasing as farmers need to apply more and more fertilizer to maintain yields. This leads to untenably high input costs and reduced profit margins. The importance of soil health in sustainable agriculture cannot be overlooked. If one farms in sustainable way with time inputs costs decrease, or become manageable and profit margins rise.
- Morocco is one of the countries that still have Phosphorus (P) to mine, but the sources are being depleted. Input of Phosphorus in fertilizers will be a challenge going forward. Adopting more sustainable practices such as CA is advantageous because it helps build P reserves in soil by improving soil health.
- Soil health is defined by the capacity of the soil to function as a living ecosystem that sustains plants, animals and humans. It refers to microbial activity in the soil, the more biological life in the soil the better the soil quality. Mineralization is the biological process of breaking down organic matter into simpler organic compounds that can be taken up by plants. Healthy soils have good reserves of NPK. If no farming is done how much nutrients will you have in the soil. Has farming increased microbial activity or not?
- Cover crops are mainly grasses and legumes which are planted in-between cash crops to improve soil fertility. The primary benefits of planting cover crops include improved soil health, soil and water conservation, control of pests and diseases. Cover crops such as legumes act as accumulators of Nitrogen (N). The amount of N available depends on the species of legume, biomass and available N in plant tissue.

Benefit/relevance

Everyone realised that soil health is a new technology and that there is still a lot more to learn. Moving forward, it is one of the decision making tools that can be used to assess sustainability of agricultural practices.

Ukulinga Howard Davis Symposium (May 2017)

The Ukulinga Howard Davis Symposium took place on 30 May 2017 at Ukulinga Research farm. The symposium takes place each year to present the latest research conducted by the School of Agriculture, Engineering and Sciences at UKZN. It was attended by organizations such as Siyazisiza, Biowatch, the Poultry Institute, PACSA and Mahlathini amongst others.

Proffessor Ben Cousins gave a presentation on “Smallholder Farmers and Land Reform in South Africa”. The presentation highlighted the slow moving process of land redistribution, where only 10% of farm land has been transferred since 1994. Although there are marginal improvements in

the livelihoods of some land reform beneficiaries, which has been identified through case studies, there is no national data to support these findings. In KwaZulu-Natal, the major challenge is on tenure reform where government has failed to protect the rights of labour tenants and farm dwellers. Black smallholder farmers live in a shadow of large scale farming and there is a largely unknown informal market "bakkie traders" in the smallholder sector in South Africa. Formal research is focused mainly on large scale agriculture and there is still a long way to go in transforming the smallholder farming sector. Professor Roland Schultz gave a presentation on linking Food to Water and Energy. The main points from the presentation were that there is pressure on energy sources, especially from the agricultural industry. Diesel and electricity put a lot of pressure on energy sources, therefore it may be time to explore solar power and renewable energy sources. Biofuels derived from plant sources could assist in addressing the problem, i.e. bioethanol from sugar cane and soy bean and bio diesel from vegetable oil amongst others. Organizations that gave presentations on the day include Biowatch, where Mr Lawrence Mkhaliphi presented on the importance of seed saving and organic farming, then Mr Gwala from the Poultry Institute presented on broiler and layer production, Mrs Avrashka Sahadeva presented the findings on using the Sthill tiller in small scale gardens. The symposium created awareness on current research and also presented an opportunity to meet and interact with various stakeholders.

No Till Club annual conference (October 2016 and September 2017)

This was attended by a number of staff members from Mahlathini Development Foundation. A formal presentation was given at the 2017 conference on the implementation of CA in the smallholder sector.

Farmer Innovation Platforms

Madzikane Stakeholder Forum

An innovation platform and stakeholder forum has been set up at Madzikane (Creighton) in Southern KZN. The process was formalised through the hosting of a farmers' symposium called 'New frontiers in CA implementation for smallholder farmers in Southern KZN'

After the initial Madzikane Stakeholder forum meeting a number of subsequent activities and meetings have been held. These have included information days shared with the DARD, and a farmers' day for the trials run by the Farming Systems Unit at Cedara.

In addition, the farmers' association, under the leadership of Mr C Xaba has been very active in leveraging recourses for the group. They are in the process of acquiring a sheller for the group and there is already a small mill for local maize meal production. Mr Xaba has been given access to a sheller for this season by the DARD.

Nokweja

In this area, there has been considerable interest in CA. Two other stakeholder groupings namely the DARD and Grain SA FDP are also active in the area. Meetings were held to introduce the various programmes and work together on overall planning and implementation. A farmers' day showcasing CA implements was held by the Department and this was augmented by a demonstration day held by the Grain SA CA team to showcase the new 2-row tractor drawn planter that has been acquired for use by farmers

A formal Stakeholder forum has as yet not been set up in the area and this has been somewhat hampered by the sudden and tragic death of the head of the farmers association there, Mr Nokweja. In all expansion into three new villages in the area is anticipated and social compact agreement with Mahlathini has been tabled.

VSLAs (Village savings and loans associations)

Village Savings and Loan Associations (VSLA's) are being established by MDF with the aim to support and empower local learning groups to save towards production inputs. A VSLA is a group of 10 to 19 individuals who meet regularly to save together and take small loans from those savings. The VSLA operates for a period of twelve months after which the savings and profits are shared out amongst the members according to the numbers of shares each member accumulated during the year and then the process is started again. A VSLA group is formed on a voluntary basis and has a specific purpose which is to offer financial services to its members.

MDF provides support to 13 groups across Nkandla, Creighton, and Bergville. The VSLA groups, with the exception of Madzikane consists of mainly female members (98%) who also make up the majority of participants working under the CA programme. However, these groups also have members who only participate in savings but are not doing CA. MDF is further involved with 5 Saving and Credit Groups in the Matatiele area, supported by the local facilitator there, Bulelwa Dzingwa.
VSLA's are a means for communities to save a portion of their income and make profit in the end through interest charged on loans. The groups have a constitution that they follow when conducting their savings meetings which guides them in terms of procedures regarding the purchase of shares, share value, issuing of loans, interest charged, payment period and non-financial components such as group composition, meeting attendance and the roles of each member.

The team has been working closely with the groups across all areas with the aim to monitor their progress and identify and help resolve challenges they experience. This interaction has played a pivotal role in understanding the dynamics within the groups. Owing to the socio-economic status of the groups where most people are unemployed and depend on social grants and seasonal employment to survive, the VSLAs serve as multipurpose entities whereby loans are taken for household needs, to pay back other loans and other activities unrelated to agricultural production.

Generally, the groups know their constitutions but do not always follow the non-negotiable rules when it comes to the issuing and distribution of loans. One of the highlights of the VSLA's is that they have empowered some groups to explore alternative ways of generating money for inputs. For instance, one group started a VSLA specifically for the purchase of fertiliser and also developed a system of making individual contributions of a predetermined amount and giving the money to one group member every month. This was done to assist each other to buy fencing and the money rotated until all the members received the contributions. As a way to meet both household and production requirements, some groups have opened two separate groups, one for agricultural inputs and another for general inputs.

Training for VSLA bookkeepers

This was initiated both to improve the record keeping capacity of the secretaries and to introduce the new system of record keeping for the groups. An outline of the training is provided in Attachment 3.

FIGURE 4: MR NQE DLAMINI FACILITATING THE RECORD KEEPER TRAINING SESSION

The training was extremely helpful in re-asserting the important role of the bookkeepers to ensure proper functioning of their groups; to ensure that rules are adhered to, to manage conflict in the group and to do accurate record keeping. An example of one of the new record keeping forms introduced is given in attachment 4.

Below is a breakdown of the status of the savings groups in the three areas.

Nkandla

Maphotho savings group in Nkandla started saving in December 2016 and consists of 21 members who are all female. The group saves monthly, with each member buying shares at R100/per share. Profit is generated through loans that are paid back with an interest of 10%/month. Each group member is required to repay the loan within *one* calendar month. The group members work well together and follow the constitution. The group members borrow money mainly for household consumption.

Right: Nkandla Savings Group working with the new savings books and forms

Madzikane

Masibambane savings group based in Creighton started saving in March 2017 and has a total of 15 members. The group meets monthly for savings and the share value is R200. The group is the only one with a share value of more than R100. The group met for their first savings meeting without MDF in June and reported that the meeting went smoothly. The group understands the rules of the group constitution and follow all rules and procedures. So far no major challenges have been reported. More than 50% of the group members borrow money for agricultural production. The rest of the group, borrows money for household consumption.

Left and below: Madzikane, Masibambane Savings Group

Bergville

Bergville has a total of 11 groups in eight villages, Ezibomvini, Eqeleni, Stulwane, Ndunwana, Ngoba, Bethany, Acton Homes and Mhlathuze. The smallest group consists of 10 members and the largest group consists of 40 members. Out of the 11 groups, 7 groups are in their first year of savings. All groups have a constitution, but the members do not always adhere to the rules. Challenges within the groups mainly relate to the issuing and repayments of loans. The rule is that people should take loans to the value of double their shares, but members in some groups take loans up to four times their number of shares.

Below are short descriptions of the current status of the savings groups in Bergville.

Ezibomvini

There are two savings groups in Ezibomvini, one for general household needs and another (Ukuzama) for the purchase of fertiliser. The groups have 23 and 10 members respectively. In both groups, the payment period is 6 months rather than the prescribed 4 months. The reason was that most members would not be able to pay back the loan in 4 months as the period was too short. Secondly, the group saves between R100 and R 300 a month instead of R 100 to R500, because they could not afford to save more than R 300 a month. In the first group, all three keys are kept by one person as one of the key bearers left the group. The members of the learning groups agreed to have two separate groups as there were people who wanted to join the savings group but weren't under the CA programme. The groups are in their second year of operation.

FIGURE 5: EZIBOMVINI, UKUZAMA FERTILISER SAVINGS GROUP

Eqeleni group

Eqeleni also has two savings groups, Masithuthuke which is for inputs and Masibambane which is saving for household use. Both groups have been around for more than 3 years. The groups meet monthly to save and the share value is R100. Apart from one member leaving the group due to non-payment, no major challenges have been reported.

Stulwane

Stulwane is the largest group in Bergville. It has a total of 40 members, and has 100% female membership. There are a few dynamics in the group, especially when it comes to borrowing money and repayments. To give some historical background, the group has been around for about four years. There has been a constant change in membership over the years and as a result the group has a mixture of old and new members. There is a tendency of taking out new loans prior to fully repaying old ones and people take out loans that far exceed their total shares. In addition, there seems to be an imbalance in power within the group as some members believe they are entitled to certain privileges over others. For instance, there is a member that owes money from 2016 but is still allowed to take out loans. Going forward, the group will have to split into two groups or let go of some members, as being such a large group puts strain on the group secretary and has a higher likelihood of ending in conflict. The group has been advised to refrain from taking multiple loans and to consider splitting into two groups in the 2018.

Mhlathuze, Acton Homes, Bethany

There are four groups in the abovementioned areas and they are all in their first year of savings. Mhlathuze was started by Mr Madondo from MDF in January 2017. The group consists of 17 members who meet monthly to save and the share value is R100. No major challenges have been reported so far, except members take loans on top of existing ones. Upon enquiry, they stated that they were not aware that it was not allowed. There are two groups in Bethany and one in Acton homes which were started by Ms Makhithi, a former Save Act facilitator. She requested MDF to work with the groups as they had no support since Save Act had moved out of Bergville. Initially there was a total of eight new groups, however it was agreed that MDF could only assist 3 groups. In terms of coherence, the groups are fairly functional, however there is one group, Gudlintaba in Bethany in which the members do not get along with the chairperson. It was advised that they hold a meeting and elect an acting chairperson as soon as possible. The other two groups work well together and follow the group constitution.

Above: Acton Homes Savings Group

Above: Bethany, Amangwe Savings Group

There is a total of 270 participants in the savings groups. For the current year, the groups have saved a sum of R 291 800. A total of R 67 300 was bought in shares and a total of R 60 410 was paid back in loans for the month of June. All the money is managed and kept by the groups. Attachment 2 provides a breakdown of the savings for each group.

Matatiele

Here Mahlathini's involvement with savings groups has been though Bulelwa Dzingwa, the local facilitator who is also a local promoter for SaveAct in the area and works with setting up and mentoring the groups.

There are five savings group with CA participants, three in Nkau, one in Iskhulumi and one in Sekhutlong. In total, there are 11 people doing CA who are part of savings. Groups save for various reasons such as paying school fees, buying groceries, furniture and building houses. None of the groups save for production inputs. See attachment 5 for an example of the monthly savings record of the Nkau Savings' Group.

Bulelwa stated that she wants to establish new savings groups in Belford, Mabua and Thutaneng with Mahlathini as Save Act does not work in these areas. People in the abovementioned areas would be interested in conducting CA trials, and the CA programme can be introduced at the local Imbizo called by the chief.

Future activities

A number of processes are being considered and explored for this aspect of the programme:

- Opening of Stokvel bank accounts for the VSLA's
- Systems for re-ordering and payments to suppliers to enable smooth payment options by smallholders
- Payment of input subsidies for the CA programme as part of the VSLA shar outs process
- Social compact agreements with all learning groups and VSLA's
- Arrangements for purchase of grain storage containers on a 50% contribution basis- where grains pays 50% and farmers the 505 through their VSLA's
- Incentives for "good practice" in the VSLA's in the form of donations of tools, or some arrangement of trade that does not involve cash

Suggestions and recommendations

- MDF has employed new field staff in this cycle and Tema Mathebula will be ready to managed the Midlands site in the upcoming season. As such she will be responsible for the Cornfields and Mpholweni sites as well as expansion areas in Swayimane and Wartburg. In addition, she will explore the possibility of starting learning groups in the Thabamhlope communal tenure areas around Estcourt.
- The work on soil health is to be continued and expanded, as the results are important and show the potential benefits of CA implementation in the light of ecological and environmental factors.
- VLSA (Village savings and loan associations) are being shown to be central to the future sustainability of CA efforts and are becoming a central aspect of the innovation platforms and learning group approach. These will be promoted actively in the Midlands region as well. Presently there is not an existing culture of VSLAs in the villages where work has been started.
- There may be a need to separate the expansion and awareness raising aspects of this programme to an extent from the research aspects-
    - Further funding is required for the expansion, both in terms of resources for the inputs required for the farmer experimentation and the required logistical capacity to service many different areas
    - Research requires greater focus, time and technical expertise than some of the fieldworkers have and specific staff may need to be employed for this. Instrumentation and analysis is generally too expensive to fall within the present budgets
- Bringing other potential donors on board is important both for the research and the expansion as is the initiation of smaller, dedicated research projects within this process.
- Opportunities exist to work within the realm of climate change adaptation and payment for ecosystem services schemes, but this aspect is complex and will require focussed attention.
- Partnerships with government departments such as Agriculture, Rural Development, Environment and Economic Development are important.

Budget statement by August 2017

Project	Total Actual YTD Aug 17	Total Budget YTD Sept17	Available to use
Smallholders KZN Midlands	**518 445**	**518 445**	**0**

Attachment 1: Concept proposal for Farmer Service Centres linked to maize and poultry production: April 2017

Background

The Mahlathini Development Foundation has pioneered a model for value chain development and support at a local level for rural smallholder agricultural commodities (maize, and beans, poultry production {broilers and layers}, vegetable production, potatoes and livestock) . The work has been done in conjunction with The SaveAct Trust, StratAct Grain SA, KZNPI (Poultry Institute) and Lima Rural Development Foundation.

The model is based on a farmer innovation approach linked to village level savings and credit groups, where smallholder farmers in previously disadvantaged communities organise themselves into commodity interest groups. These interest groups work together within the whole value chain from input supply, through production to marketing to learn together and create local economic opportunities within the system. They form bulk buying groups, set up local supply systems and SMME's, participate in farmer level learning and experimentation and forge local market linkages. They are supported to forge relationships with Agribusiness and Institutional partners and receive support and training in small business development.

Over the last 5 years, this model has proven extremely successful in stimulating local production and marketing and provides coherent support to smallholders to develop their farming enterprises. Linking the smallholder into the wider economy and ensuring ongoing profitability under their difficult conditions can be tackled as a challenge with appropriate industry and government support.

Concept

Develop a model of implementation for local rural farmer service centres that supports individual smallholder farmers to develop viable SMME's in their commodities of choice. Working within and across linked commodity value chains is important, as is building a stable local value chain that suits and supports smallholders. Individual smallholders are organised into functional groups that can develop into more formalised structures. Functional groups link across nodal villages to form farmer forums that oversee nodal farmer centres. Farmer centres are managed and run by a combination of local facilitators, local SMME's and a support organisation.

A local market system analysis determines the key starting point of intervention; input supply, production support or marketing, for each area. Each intervention is linked to villages level savings and credit groups and or revolving loan funds that pay for inputs and limited capital improvements. Relationships with Agribusiness and Institutional partners are cultivated and formalised for input supply and marketing. Partnerships with private commodity organisations such as Grain-SA and SAPA are seen as crucial.

Combining commodity focus areas of field crop production, poultry production and livestock fodder production makes sense in consolidating and creating coherent value chains in local, rural localities and economies.. Feed and fodder can be produced for poultry and livestock as an integrated part of the grain production system, specifically if it is focused on Conservation Agriculture principles. This includes an imperative for crop diversification which could include a range of grain crops (including white and yellow maize, sorghum and millet) , legumes (such as

sugar beans, cowpeas and dolichos) as well as cover crops such as (sunnhemp, sunflower, black oats, fodder rye, fodder radish, Teff and Lucerne)

Implementation model; commodity inters groups, linked to local value chains

Individual smallholders in a locality/village work together in functional groups that:

1. ***Learn together:*** Working within the whole value chain focus learning though farmer level experimentation and mentoring on a season long basis, alongside technical training sessions to ensure full engagement by smallholders in the production aspects of their chosen commodity

2. ***Do Savings and small loans:*** These functional learning groups also set up village level savings and credit groups, as access to cash and cash flow and learning a process of budgeting and allocation is a critical component of a successful production cycle

3. ***Focus on the whole commodity value chain:*** Within the groups a learning and action process is undertaken that guides members analysis and decision making through the whole value chain; access and cost of inputs, efficient production, harvesting, storage, value adding and marketing and technical, infrastructural and institutional support.

   Potential commodities are evaluated for local implementation and profitability and the groups decide on a 2-3 commodities of their choice to focus on. Business start up straining is focused around these commodities and each individual develops a business plan which they implement with assistance from supporting organisations.

4. ***Explore social and economic models of organisation:*** The functional groups explore organisational options and undertake formalising suitable structures over time. This would include associations and cooperatives.

A nodal approach is used to link farmer groups across a locality into a Farmer service centres. Nodes are made up of groups within a village or across villages within close proximity that share roads within a 10km radius. Around 5-10 groups will make up the membership of a farmer service centre. The centre provides

- Access to tools and equipment; through sales and rental agreements
- Access to inputs; through bulk buying schemes and direct sales of appropriately packaged inputs specific to their commodities of interest
- Access to advice through local facilitators and support organisations
- Access to services such a spraying, and ploughing
- And a forum for discussing and setting up joint activities such as storage, processing and marketing

Farmer Service Centres

These are envisaged as local level centres managed by farmer level committees and run jointly by local facilitators, entrepreneurs and the support organisation.

Characteristics of the farmer centres include:

- Membership from local smallholder farmers
- Managed and run by elected volunteers/ local facilitators as well as the support organisation and the farmer level representatives/committee
- Provision of access to advice and local services
- Provision of access to affordable inputs and market linkages
- Income generation balanced by agreed proportion of subsidization by support organisations
- Formal relationships and contracts with agribusiness
- Formal relationships with local SMME's and service providers.

Activities within the implementation model

A certain level of skill and social cohesion needs to be built up among smallholder farmers engaged in specific enterprises to be able to develop a coherent value chain approach and implementation. The activities in the table below summarise this step wise approach across a 4 year implementation time line.

TABLE 1: ACTIVITIES IN IMPLEMENTATION OF COMMODITY INTEREST GROUPS LINKED TO LOCAL VALUE CHAINS.

Year 1	Year 2	Year 3	Year 4
-Set up farmer learning groups in villages that can accommodate nodal expansion	- Expand nodal model and set up forums consisting of farmer learning groups across and within villages - Explore organisational structures and set up committees and membership for forums	- Formalise the farmer forums and set up organisational structure for the farmer service centre - Expand farmer service centre model to include 3-4 local area centres	- Support committees and local facilitators run farmer service centres and monitor progress towards sustainability. (Ongoing for 3-4 years from here) - Link the local farmer service centres into an umbrella structure
-Set up village level savings and credit groups (VLS) around the learning groups	- Continue to set up VLS groups - Work with VLS groups to focus savings, loans and share outs on productise activities and assets -Set up bulk buying groups	- Continue to set up VLS groups - Expand bulk buying groups -Develop appropriate financial instruments for production loans and savings - Closely monitor VLS groups	- Formalise partnerships with agribusiness around bulk buying options - Formalise financial instruments into financial institutions
- Choose local facilitators – 2-3/ village	- Continue to choose local facilitators - Local facilitators volunteer and/or are elected into formal positions to support farmers and set up farmer service centres	- Continue to choose local facilitators - Local facilitators set up chosen structure for farmer service centre with farmer forums -Local facilitators run service centres with support organisations	- Local facilitators manage farmer centres and work with local learning groups - Local facilitators earn a partial income through the farmer service centres - Support organisations formalise ongoing relationship with local facilitators, including structures for subsidisation

-Choose commodities of interest and start production, learning and small business development	- Provide intensive business start up training and develop individual business plans - Explore commodity value chains for collaborative options	- Formalise farmer level cooperative actions around inputs, production support, post harvest activities and marketing - Support SMME activities around the value chains	-Finalise formal farmer level structures - Formalise farmer service centre organisational ad economic structures
- Provide production support – farmer experimentation and learning based on production cycles.	-Continue production support with local facilitators in place and starting to provide services to farmer learning groups - Design subsidisation model for farmer participants and service centre	- Continue production support with local facilitators in place and continue to provide services to farmer learning groups - Test subsidisation model for farmer participants and service centre	-Continue production support with local facilitators in place and continue to provide services to farmer learning groups - Formalise subsidisation model for farmer participants and
- Post harvest, storage and processing discussions and learning - Develop local marketing options and avenues -Monitor consumption and sales	- Farmer learning groups engage in joint post harvest and storage activities -Set up SMME's that support processing and marketing (e.g. local maize mills. Local poultry feed production, fodder and hay production ...) --Monitor consumption and sales	- Develop relationships between farmer service centres, farmer forums, SMME's and local service providers -Develop local marketing systems and forge links with commercial and institutional buyers --Monitor consumption and sales	- Formalise relationships between farmer service centres, farmer forums, SMME's and local service providers -Continue to develop local marketing systems and formalise links with commercial and institutional buyers --Monitor consumption and sales

Year 1: Set up nodal villages:

(1 full time field worker, 1 part time fieldworker, 1 part time manager, 1 part time administration assistant); 1 vehicle, office rental, office equipment and stationary x 1

- 15-25 smallholder farmers per learning group x 2 commodities X 3-4 villages ~160 individuals
- 5-8 farmer experimentation volunteers per learning group, per commodity x 2 commodities ~80 individuals
- 2-3 VLS groups(~15 members) per village x 3-4 villages ~90 individuals
- 2-3 local facilitators/village x 3-4 villages ~7 local facilitators

Year 2: Expand villages within nodes and set up farmer centres:

(2 full time fieldworkers, 1 part time field worker, 1 full time administration assistant, 1 part time financial/ business support person,1 part time M&E officer, 1 part time manager); 2 vehicles, office rental, office equipment and stationary x 2

- 2-3 villages/node x 3-4 nodes ~ 480 individuals, 160 farmer experimentation volunteers, 180 VLS members
- ~20 Local facilitators
- 1 bulk buying group per village x 6-8 villages ~ 7 bulk buying groups

- 1 farmer centre per node ~ 2-3 farmer centres
- 1-2 SMME's linked to farmer centre, per village x 10 villages ~ 15 SMME's
- ~1-6 farmer cooperatives

Year 3: Link farmer centres across nodes and formalise farmer organisations:
(3 full time fieldworkers, , 1 full time administration assistant, 1 full time financial/ business support person,1 part time M&E officer, 1 part time manager)

- 3-4 villages per node x 4-5 nodes ~ 800 individuals, 240 farmer level experimentation volunteers, 540 VLS members
- 2-3 bulk buying groups per village x 15 villages ~ 35 bulk buying groups
- 4-5 farmer centres
- 2-3 SMME's linked to farmer centre per village x 15-20 villages ~45 SMME's
- ~3 formalised farmer forums links to farmer centres
- ~15 farmer cooperatives

Year 4: Formalise partnerships with farmer centres:
(3 full time fieldworkers, , 1 full time administration assistant, 1 full time financial/ business support person,1 part time M&E officer, 1 part time manager); 2 vehicles, office rental, office equipment and stationary x 3

- ~10 farmer centres, ~90 SMME's
- ~10 formalised farmer forums
- 3-4 formalised institutional models for farmer centres
- 3-4 formalised partnership contractual arrangements with framer centres and or farmer forums
- Start to expand model into new areas

Proposed budget requirements

Farmer Service Centre support budget; 4 years				
	Year 1	Year 2	Year 3	Year 4
Field worker	R 396 000,00	R 528 000,00	R 792 000,00	R 846 000,00
Administration assistant	R 48 000,00	R 96 000,00	R 114 000,00	R 120 000,00
Financial/Business support person	R 108 000,00	R 108 000,00	R 240 000,00	R 264 000,00
M&E officer		R 108 000,00	R 216 000,00	R 216 000,00
Manager	R 129 600,00	R 259 200,00	R 355 200,00	R 444 000,00
Local facilitator stipends	R 72 000,00	R 144 000,00	R 288 000,00	R 288 000,00
Vehicle/transport	R 90 000,00	R 96 300,00	R 103 041,00	R 110 253,87
Accommodation	R 102 000,00	R 204 000,00	R 306 000,00	R 306 000,00
Administration; banking, auditing, equipment, stationary, sundries, office rental	R 110 000,00	R 117 700,00	R 125 939,00	R 134 754,73
Farmer level experimentation support; inputs and subsidisation (~R1000/ farmer)	R 90 000,00	R 180 000,00	R 270 000,00	R 270 000,00
Farmer Service Centre support; stock, rental, administration		R 150 000,00	R 200 000,00	R 250 000,00
Sub Totals - yearly	**R 1 145 600,00**	**R 1 991 200,00**	**R 3 010 180,00**	**R 3 249 008,60**
TOTAL - 4 years				**R 9 395 988,60**
Co-Funding - GrainSA - (secured)	R 500 000,00	R 550 000,00	R 580 000,00	

Attachment 2: Summary of Savings group activities; Creighton, Nkandla and Bergville

No.	Name of Village	Name of Group	No. Of Members	Years active	Total monthly saving	Total Monthly Repayments	Total monthly loans	Cumulative No. of shares
	CREIGHTON							
1	Madzikane	Masibambane	15	1	R5,000.00	R10,280.00	R4,440.00	R18,800.00
	NKANDLA							
2	Nkandla	Maphotho	21	2	R1,900.00	R0.00	R16,200.00	R13,300.00
	BERGVILLE							
3	Ezibomvini	eZibomvini	23	2	R5,300.00	R3,020.00	R0.00	R38,500.00
4	Ezibomvini	Ukuzama	10	1	R16,300.00	R2,950.00	R4,330.00	R18,500.00
5	Eqeleni	Masithuthuke	20	4	R3,700.00	R2,840.00	R4,000.00	R31,400.00
6	Eqeleni	Masibambane	25	3	R5,700.00	R3,050.00	R6,000.00	R40,800.00
7	Stulwane	uMntwana	40	4	R7,700.00	R7,330.00	R6,600.00	R48,400.00
8	Mhlathuze	Siyaphambili	17	1	R2,600.00	R2,990.00	R5,500.00	R13,500.00
9	Acton Homes	Siyazama	20	1	R4,500.00	R11,085.00	R13,700.00	R8,400.00
10	Bethany	Gudlintaba	19	1	R2,600.00	R5,140.00	R2,500.00	R19,500.00
11	Bethany	Amangwe	19	1	R6,000.00	R8,380.00	R4,100.00	R25,200.00
12	Ndunwana	Phelandaba	20	1	R2,000.00	R0.00	R2,940.00	R15,500.00
13	Ngoba	Sakhokuhle	21	1	R4,000.00	R3,345.00	R8,800.00	R0.00
TOTAL			**270**		**R67,300.00**	**R60,410.00**	**R79,110.00**	**R291,800.00**

Attachment 3; Outline of Record keeper training and supervision framework

Mahlathini Development Foundation - May 2017

Purpose of Training and Supervision Framework

This training and supervision framework is targeted to record keepers of Village Saving and Loan Associations (VSLAs), saving groups and stokvels.

Participants will be able to follow the correct procedures to record all financial and non-financial transactions in a group's record system correctly.

Specific Outcomes

1. Explain the record keeping system of a group
2. Identify and describe types of records used in the group
3. **Capture Entries:** Create members' information record for biographical details of all members of the group in a membership book/form
4. Prepare and facilitate a saving meeting of a group
5. **Capture Entries:** Record all shares purchased in a meeting in the record books of members as well as the ledger of the group
6. Calculate Rand value of shares bought by a member in each meeting
7. **Capture Entries:** Record the repayment of loans by the members in the record books of members as well as the ledger of the group
8. **Capture Entries:** Record new loans in the record books of members as well as the ledger of the group
9. Calculate interest on loans taken
10. Calculate loans due and outstanding loans
11. Prevent members for taking new loans before settling current and outstanding debts
12. **Capture Entries:** Complete a meeting summary form (closing balances) and submit to the representative of MDF
13. Announce the closing balances to the group
14. Facilitate a share-out meeting and calculate share growth and amount due to each individual member
15. **Capture Entries:** Record all share-out entries in the record books of members as well as the ledger of the group
16. Report irregularities to the group

Assessment Criteria

1. The purpose for which the records are used is explained with examples
2. Complete membership forms/entries in accordance to group's constitution
3. All entries are prepared and checked in accordance to the group's recording system

4. The details of entries are recorded correctly in all individual and group's transactional books
5. All transactions are communicated correctly to members of the group

Training/Facilitation Aids

1. Constitution of a VSLA
2. Individual member transaction book
3. VSLA record pack
4. Flip chart (flip chart stand and pens)
5. Note book

Training Programme (Duration: 3.5 hours to 4 hours)

No.	Item	Duration
1	Welcome, introductions, purpose, expectations, workshop rules	15 min
2	Overview of VSLA rules and procedures	15 min
3	Purpose and significance of records - general	5 min
4	Types of records - general	5 min
5	Qualities of a record keeper	10 min
	Break	10 min
6	Identification and description of records of a VSLA	30 min
7	Calculating Rand value of shares and interest on loans	15 min
8	Capturing entries	60 min
9	Facilitating share-out meeting and calculating share-out	30 min
10	Summary of the workshop	15 min

Attachment 4: An example of a record keeping sheet for the VSLAs

Form 2: Amarekhodi: Amasheya Nemali-mboleko Usuku - Date: _____Records: Shares & Loans

	Isibongo - Surname	**Izinhlavu** - Initials	**Amasheya Athengiwe Namhlanje -** Shares bought			**Amasheya Esenginawo -** Cumulative No. of Shares			**Imininingwane Ngemali-mboleko** - Details of Loans*							
						Inani - No.	**Malini?** Value									
				R	C		R	C	R	C	R	C	R	C	R	C
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
ISAMBA - TOTAL																

Name of Group: _____ *Yonke imali-mboleko ibhalwa seyihlangene nenzalo – All loan records are inclusive of interest

Attachment 5: MARCH RECORDS –NCEDANI SAVINGS GROUP: NKAU

Name of group	Ncedani Savings Group	**Ref No**		**Date of meeting**	14 March 2017

Ref No. Member	**Name**	**Shares Bought**	**Rand Value**	**Cumulative no of shares**	**Cumulative Rand Value**	**Loan Amount**	**Reasons for taking a Loan**	**Balance Owed**
GM1	Nofirst	5	R 500.00	20	R 2000.00	R 2000.00	Household consumption	R 2200.00
GM2	Nothandolwethu	0	0	6	R 600.00	R 1600.00	Household consumption	R 1760.00
GM3	Matshukulo	5	R 500.00	20	R 2000.00	R 1000.00	Household consumption	R 1100.00
GM4	Nokwanda	2	R 200.00	10	R 1000.00	R 500.00	Household consumption	R 550.00
GM5	Mamtlobi	5	R 500.00	20	R 2000.00	R 500.00	Household consumption	R 550.00
GM6	Mamodise	3	R 300.00	13	R 1300.00	R 1500.00	Household consumption	R 1650.00
GM7	Majosiele	3	R 300.00	16	R 1600.00	R 500.00	Household consumption	R 550.00
GM8	Andiswa	5	R 500.00	15	R 1500.00	R 300.00	Household consumption	R 1650.00
GM9	Madiopelo	5	R 500.00	20	R 2000.00	R 1500.00	Household Consumption	R 1650.00
GM10	Maqekelo	5	R 500.00	15	R 1500.00	R 500.00	Household consumption	R 550.00
GM 11	Siphulelo	5	R 500.00	15	R 1500.00	R 1000.00	Household Consumption	R 1100.00
TOTAL		43	R 4300.00			R 13 600.00		

MONEY IN		**MONEY OUT**	
Number of shares bought today	**43**	Number of loans issued today	
Rand Value of shares bought today	R 4300.00	Value of loans issued today	R 13 600.00
Value of loans repaid today	R 2710.00	Money remaining in the box	R 4710.00

Total income received today	R 7010.00	Money to be deposited in the bank	0
Optional – Total funeral insurance premium paid		Total value of outstanding loans	R 14 960.00

NOTES: 1) Loan amount must include 10% interest. 2) Repayment should include the 10% interest. 3) Balance owed must also include 10% interest. 4) All of these figures should be the same with figures in the individual member's transactional book.