



RESILIM-O: Resilience in the Limpopo Basin Program- Olifants

MILESTONE 2: Progress Report No 1 Under the Lower Olifants catchment Agricultural Support Initiative (AgriSI)

07/07/2018



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ABOUT USAID: RESILIM

USAID's Resilience in the Limpopo River Basin (RESILIM) program addresses ongoing degradation in the Limpopo River Basin in southern Africa, where people face water shortages, increased floods, and declines in crop productivity as climate change further stresses an already water limited region.

There are two components to the program; one operating at a basin-scale (RESILIM-B, which is implemented by USA-based Chemonics and addresses similar issues at the scale of the four SADC member states that share the Limpopo Basin (South Africa, Botswana, Zimbabwe and Mozambique) and a catchment-scale project (RESILIM-O) that It is being implemented by the Association for Water and Rural Development (AWARD). Both projects share the same overall objectives. You can find out more information on the RESILIM projects on www.usaid.gov website and www.award.org.za.

The USAID's RESILIM-O focusses on the Olifants catchment. The program aims to reduce the vulnerability of people and ecosystems in the Olifants Catchment specifically, by improving how transboundary natural resources are managed. By understanding the systemic causes of vulnerability, including climate vulnerability, it is promoting new ways of thinking and acting to promote integrated water and biodiversity management.

ABOUT AWARD

At AWARD, we recognize that the natural world's resources are limited, and undergoing rapid depletion and transformation. We know current practices of use and management are inadequate to deal with the changes and challenges we are facing. We design practical interventions to address the vulnerability of people and ecosystems, and merge considerations from both environmental and social perspectives. Our approach involves thinking across disciplines, boundaries and systems.

We are working with diverse people and institutions in the water and biodiversity sectors in the Olifants River Catchment to understand the multiple vulnerabilities to change, including climate change. Along with quality scientific contributions, our engagement in the socio-political context of the Olifants River Catchment allows us begin to begin to institutionalize integrated, resilience-based practices, providing a foundation for robust development policy and practice in the in this river catchment, and beyond¹.

The Olifants Catchment: An overview

The Olifants River Catchment falls within the Limpopo River Basin, which is part of an international drainage basin that stretches across South Africa, Mozambique, Zimbabwe and Botswana. In fact, the Olifants River contributes nearly 40% of the water that flows in the Limpopo River making it an important catchment in the system as a whole².

¹ AWARD: Annual Report.2016/2017 Financial Year. RESILIENCE IN THE LIMPOPO – OLIFANTS.10/31/2017

²As above



washing and drinking and use it for recreational and spiritual practices. Subsistence farmers in Mozambique rely heavily on the catchment's flood plains. There are also large mines and associated industries, large scale agriculture and the wildlife economy, which all rely on a healthy, functioning river system. Often people forget that what they do upstream affects people down stream, sometimes with dire consequences.

The catchment is our home and it is worth investing in its future. The work reported here is part of the ongoing activities of the RESILIM- O project under the grant from USAID: Southern Africa.



Project partners



Mahlatini Development Foundation (MDF) is a small public benefit non-profit organization consisting of rural development practitioners who specialize in participatory learning and action processes, sustainable natural resource management and low external input farming systems, including a focus on rain water harvesting, conservation agriculture, intensive homestead food production, food security, climate change adaptation micro finance and enterprise development.

MDF designs and implements rural development programmes and training processes providing learning processes for adults all the way from semi- literate farmers to post graduate university level. We work in partnership with government and non-government organisations alike. We are sensitive to and mainstream where possible gender, disability and people living with HIV/AIDs



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1 Executive Summary

1.1 Progress for the reporting period

Continuation from reporting for Inception period of Phase II (Milestone 1):

- Baseline for the new learning group in Sedawa-extension (Turkey)
- Training workshops for 4 villages (Lepelle, Sedawa, Botshabelo, Turkey); in soil fertility management, tunnel and drip kit constructions, cropping calendars and seed saving
- Initiation of a relationship with Hoedspruit Hub: Local marketing of herbs and vegetables
- Participatory Video training
- Initiation of 2 local water committees and local action in water provision and management
- Garden monitoring; Sedawa, Turkey.

During this period Betty Maimela, a local intern has been brought on board and Nozipho Zwane has finalised her internship and left MDF.

IMPLEMENTATION TEAM

MAHLATHINI: Erna Kruger, Sylvester Selala, Betty Maimela (intern)

AWARD: Cryton Zazu, Bigboy Mkhabela,

2 Project Objectives

2.1 Overview of RESILIM-O Project objectives

RESILIM-O is large multi-faceted, multi-stakeholder, cross-boundary programme to reduce vulnerability to climate change through building improved transboundary water and biodiversity governance and management of the Olifants Basin through the adoption of science-based strategies that enhance the resilience of its people and ecosystems through systemic and social learning approaches. The programme has been running for four years and is being implemented by AWARD (The Association for Water and Rural Development) with funding from USAID.

The Agricultural Support Initiative (AgriSI) was initiated as a sub-grant process within the larger programmed towards the end of 2016. This initiative works specifically with climate change adaptation processes with smallholder communities in the lower Olifants River basin. It is being implemented jointly by Mahlathini Development Foundation and AWARD.

The Agricultural Support Initiative (AgriSI) addresses two of the RESILIM-O programme objectives directly:

- i. To institutionalize systemic, collaborative planning and action for resilience of ecosystems and associated livelihoods through enhancing the capacity of stakeholders to sustainably manage natural resources of the Olifants River Basin under different scenarios
- ii. To reduce vulnerability to climate change and other factors by supporting collective action, informed adaptation strategies and practices and tenable institutional arrangements.

2.2 Sub-grant Project Objectives



Sound agro-ecological practices for soil and water conservation (SWC) and the ability to self-organise and act collectively are regarded as fundamental for building adaptive capacity and resilience to climate change. Not only do agro-ecological farming approaches require minimum external inputs - which may be expensive and increase dependency if subsidised - but they foster farmers' sense that they can build sustainable futures from local inputs and efforts. With knowledge about the potential impacts of climate change included in the learning journey, farmers can make purposeful decisions around practices such as seed and crop-type. This approach supports livelihood diversification - also fundamental for increased resilience - through 'value-added' associated activities such as seedling production, tree nurseries and bee-keeping.

The overall aim of the Agricultural Support Initiative is to enhance the resilience of the people and ecosystems in selected villages (6-7) in the Lower Olifants River basin, using a systemic social learning approach, exploring the question: *What are you learning about the socio-economic and biophysical characteristics of your environment and how these are changing and how are you able to respond to that?*

The overarching objective of this work is to provide support for increased adaptive capacity and resilience to the effects of climate change for households involved in agriculture in select communities of the Olifants River Catchment through:

- Improved soil and water conservation and agro-ecological practices for increased food security
- Livelihood diversification and supplementation through alternative climate resistant production;
- Increased community empowerment as a result of self-organisation and collective action.
-

3 Milestone Description

3.1 Definition of milestone and purpose

Each milestone and progress report indicate activities under the broad themes of learning and mentoring, introduction to innovations and experimentation, collaborative work and networking undertaken during the reporting period.

The table below summarises these activities against the milestone and indicate achievement of these milestones.

Table 1: Summary of deliverable completion under Milestone 1: 2 May - 7 July 2018

	Activities planned	Completed?	Expected outcomes	Completed?	Verification documentation	Completed?	Reference



Learning & Mentoring: In all 6 communities each 2 days	Learning & Mentoring: -Baseline new learning group in Turkey, Decision support and planning -Learning sessions; review of S&WC and CSA, for all groups (1 day). -LF training; qualitative quantitative monitoring	C	-Baseline report for Turkey -Learning groups; learning sessions - overview of practices incl cropping calendars, soil fertility management, tunnels and seed saving -LF's undertake garden mentoring and monitoring with farmers (3-4 days each), supported by field team	C C C	Progress report on outcomes including the following documentation: 1. Photos & photo diaries 2. Farmer work plans 3. Garden monitoring 4. Monthly assessments 5. Cluster activity records 6. Event materials, attendance registers	C	1. Photos in reports and- All photos saved in directories and kept by Erna 2. Farmer work plans are recorded in the garden monitoring forms 3. 44 Garden monitoring forms across six villages 4. In this report 5. Appended to this report 6. Appended to this report
Intro to innovations and experimentation:	-Individual farmer experimentation - prioritized, garden monitoring. Mentoring by trainers and LFs'	C	- Garden monitoring including trainers and LFs- all participants visited at least once by LFs and a garden monitoring form completed	C		C	
Networking: 1. Local facilitator networking 2. Open days, cross visits 3. Review and planning sessions	Networking; Participatory video	C	Participatory video training for field staff and local facilitators in Lepelle and Sedawa Initial theme of water provision explored for community level action	C C		C	

4 Approach/ Process/ Activities

4.1 Summary of activities

This section gives an indication of activities undertaken during the reporting period to achieve the outcomes for this period, time spent and people involved.

Table 2: Summary of activities for the reporting period 2 May-7 July 2018.

DATE	DESCRIPTION OF ACTIVITY	Time	WHO WAS INVOLVED
Feb- March 2018	Tunnels and drip kits- construction - Turkey, Sekororo, Sedawa (8 tunnels). Bed Design Workshop; Turkey, translation of handouts, report writing, setting up E-survey on Pendragon, setting up	27 days	Sylvester



	Chameleon sensors (3 x 3 arrays) and VIA workshops, gravimetric soil sample analysis		
2018/03/12-16	DICLAD w/s 3 and write up of 3 workshops	6 days	Nozipho
2018/04/16	Agroecology workshop	1 day	Erna, Sylvester
2018/04/17	Intern interviews	3 days, 1 day	Erna, Sylvester
2018/04/18,19	Learning workshops Lepelle, Turkey - water, seed saving	2 days	Erna, Sylvester
2018/04/20-22	Monitoring, travel, reports	3 days	Erna, Sylvester
2018/05/03-/05	Preparation, Pendragon forms, travel	3 days	Sylvester
2018/05/08-10,12	Planning, Turkey baseline homestead visits (20 participants)	4 days	Sylvester, Betty, Nozipho
2018/05/11	Learning Workshop Cropping calendars and Seed Saving; Sedawa	1 day	Sylvester, Nozipho, Betty
2018/05/15	Baselines and garden monitoring forms - Turkey	1 day	Betty, Sylvester
2018/05/16	Baselines and garden monitoring forms - turkey	1 day	Betty, Sylvester
2018/05/17	Trip to Hinesburg (potatoes seed) + Baselines + leadership workshop by Hoedspruit hub	1 day	Betty, Sylvester
2018/05/18	introducing Betty to communities and measurement instruments	1 day	Betty, Sylvester
2018/05/19	Seasonal calendar +Seed saving workshop (Botshabelo)	1 day	Betty, Sylvester
2018/05/21-31	Write up of baselines and monitoring	10 days	Betty, Nozipho
2018/06/04-08	Garden monitoring - Sedawa, report writing, Pendragon continuation,	5 days	Betty
2018/06/11-15	Captruing data, checking chameleons and tunnels in Sedawa and Mabins	5 days	Betty
2018/06/18-22	PV training, Focus group discussion on water issues Lepelle, Sedawa, water walks and plans	5 days	Erna, Betty, Sylvester, Big Boy, Chris Stimie, Neville Meyer
2018/06/25-29	Continuation with monitoring, case studies and success story videoing - Sedawa, Botshabelo, and re-setting of instrumentation - chameleons, weather stations. Report writing and finalisation	5 days	Betty, Sylvester, Erna
2018/07/04-07	Milestone 2 writing and finalisation of reports	4 days	Erna

Sylvester:59 days, Erna:20 days, Nozipho: 21 days, Betty: 40 days

4.2 Progress and Results

4.2.1 Learning and mentoring

Learning processes conducted are summarised in the table below

Table 3: Summary of learning sessions conducted: April-July 2018

Village	Date	Activity	No of participants	Comments
Turkey, (Sekororo)	2017/11/29,30	Climate Change workshops (2 days)	74	CC impacts and local adaptive measures
Turkey, Sedawa	2017/12/06; 2018/12/07	CA workshop	38,22	Demonstration of CA, and animal drawn planter, seed distribution for experimentation (Maize, beans, cowpeas)
Turkey, Sedawa	2018/01/10, 2018/01/11	CA - replanting -	42,21	Replanting, incl cover crops (millet, sunflower, Sunn hemp, maize, beans)
Turkey	2018/03/05	Soil fertility training (trenches, eco-circles,	31	



		mixed cropping, mulching)		
Turkey	2018/03/08	Liquid manure and natural pest and disease control	49	
Turkey, (Sekororo)	2018/04/12,13	Tunnel construction (2 days); including drip kits, re-cap on trench bed packing and experiment-planting inside and outside tunnel	47	1 tunnel constructed, with help from Sedawa participants and 3 more done by participants themselves thereafter
Lepelle, Turkey, Sedawa, Botshabelo	2018/04/18, 2018/04/19, 2018/05/10 2018/05/13	Planting calendars, seed saving and seedling production	16,48,26,6	Seed provided include coriander, parsley, carrots, rape, broccoli, beetroot, spring onions and mustard spinach. (small packets to all participants)
Lepelle, Sedawa	2018/06/19,21 2018/06/20,22	Water issues focus groups, Part video, collective action plans	27,6 20,6	Water committees have laid out plans for water provision to the groups, a water walk has been conducted to the respective sources and a broad plan to be designed for further action





Learning workshops are conducted as group discussions, starting with local practices and analysing the potential benefits of the new ideas. Participants discuss their local practices, then compare those with the new ideas introduced to assess potential strengths and weaknesses of the approach.

These are followed by practical demonstrations and an assessment by the learning group related to the activity. The table below includes some of the comments made by participants.




Table 4: Comments from participants on new practices introduced in learning workshops

Practise/Activity	Comments by participants	Visuals
Trench beds	<ul style="list-style-type: none"> It is a lot of work (it takes someone with the love for gardening to get the courage to make a trench bed) Even though the work is too much during design or construction of the trench bed, it looks like once it is made one will have less work It saves cost (we used the material that was sourced locally at no cost) even though some people pay so much for manure in the areas Contributes to cost saving on labour (less weeding) Easy to maintain Could potentially improve crop quality 	




<p>Tower gardens</p>	<ul style="list-style-type: none"> • It is easier to make a tower garden than it is to make a trench bed • The ability of a tower garden to accommodate for planting a wide variety of crops, is good for food security • Increased plant population or production per unit area • Less bending and easy to weed • We have improved the soil fertility in this bed therefore, one would expect to get high yields • Continuous production at low or cost • Might contribute significantly to water savings (use of grey water with the tower garden will make efficient use of the limited water in the homesteads) 	
<p>Eco circle</p>	<ul style="list-style-type: none"> • It is very easy to make • Uses readily available material • Less digging • No cost • Can only accommodate a small number of plants • One can make a number of these small beds easily 	
<p>Liquid manure</p>	<ul style="list-style-type: none"> • Interesting • Initially thought we could use this instead of other soil fertility methods • Could to be able to boost plant growth during the season 	
<p>Natural pest control</p>	<ul style="list-style-type: none"> • Never heard of this before • Can help us deal with the increased pests linked to the increases in temperature • There is more damage due to pests in the fields (Maize, pumpkins, cowpeas) than in the vegetable gardens • The brews are easy to make, but it seems appropriate for gardens only. Not sure this can be done for large fields 	



	<ul style="list-style-type: none"> • Good innovations that can be done at low cost 	
Mixed cropping	<ul style="list-style-type: none"> • Traditionally this was done in fields • In gardens having the same crops together looks presentable and helps with harvesting - awa having enough to sell • Companion planting sounds quite complicated • We did not know that this can help with pest control 	
Drip kits	<ul style="list-style-type: none"> • It saves water (this became clear after the system was tested) • It irrigates very well • Consistency (the soil is more likely to always be at field capacity - even spread of water across the bed) • It is cheap, even though some still think it is too expensive for them • The participants were very impressed with the bucket filter and were happy that they can now use grey water in their gardens. 	
Tunnels	<ul style="list-style-type: none"> • Participants are fascinated by the thinking that went into designing a drip kit and a tunnel. They have always seen such structures as something that was out of their reach (something that could only be done by large commercial farmers). • Participants inquired about the size of the shade cloth (nets) and whether sizes were standard from the shop- in thinking about constructing more tunnels for themselves • There process is easier than we thought (If we are to build another tunnel as a group we should be able to remind each other of what we learnt and should be able to complete the construction) 	



<p>Seasonal calendars and seed saving</p>	<ul style="list-style-type: none"> - Farmers are realizing that more accurate / appropriate seasonal calendars specific for their area will have to be developed locally (and by them) - In some way the idea of using a calendar is relatively new and foreign to them (therefore making a habit to use them is not going to be that easy) - They are already making adjustments to their planting dates and they are also learning from these experiences - In some way, they are running experiments which are however not documented (instilling the idea of farmer led experimentation could help to monitor such changes closely) - Farmers found the workshop to be useful and the information shared was just what they needed - Use of the seasonal rainfall prediction information (Weather Bureau) could be useful in helping them making decisions regarding planting dates (especially for rainfed farming) - Participants feel that they have gained enough knowledge to allow them to start saving vegetable seed - Some are even thinking of saving seed for selling, even though seed is not one of the things they are used to selling. They normally share it at no cost. 	<div style="text-align: center;">  </div> <p><i>Participants found the seed selection procedure introduced in the workshop very interesting and as something they were not aware of. They enjoyed an exercise where they had to identify the male and female parts of a flower on different flower types. This process helped them realize the reason for butternuts and pumpkins not forming in their gardens - they did not know cucurbits have male and female flowers and these have to be pollinated by bees.</i></p>
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4.2.2 Innovations and Experimentation

Garden monitoring has continued in this quarter. Summaries have again been made of local innovations and introduced innovations being practiced by participants. The garden monitoring for Turkey included 20 learning group members (results are presented in the case study below) and garden monitoring has also been conducted for a further 19 participants from Sedawa and Mabins.

The more and more desperate situation with water has led to learning group members coming together and collective action in water provision.

ALTERNATIVE SOURCES (Percentage of households with access)	
Jo-Jo tanks at household level	12 %
Buying 210l drums of water	80%
Springs (Nov-June)	8%
Wells (Nov-Dec)	36%
Municipal water (ave 1x / week)	56%



In Sedawa a water committee has been formed (informal) consisting mainly of members of the learning group and those associated with them and have collectively raised around R 8000 for piping to bring water from a spring in the mountains above the village. In Lepelle the Water committee has been formed to renovate and maintain the existing water supply furrow, which was made in the 1920's by members of the community.

In both cases the groups have gained permission from their traditional authorities.

To support these processes AgriSI have run Focus group discussions with them to outline and clarify their ideas and plans and also in bringing in an agricultural engineer to give them a technical assessment of their suggested plans.

FACILITATION OUTLINE FOR WATER FOCUS GROUP DISCUSSIONS

For local initiatives, municipal water supply and local sources e.g. rivers, and spring explore the following:

1. *Define the sources, what they are, where, how they are managed, who has access*
2. *What is working (enablers)*
3. *Challenges/barriers the communities are facing with the systems*
4. *Who are the role players, what are their responsibilities (govt, civil society and local structures)*
5. *Community led action, ideas and the way forward.*
6. *What do you think participatory video (PV) can do to assist with awareness raising and lobbying*

After the focus group discussion, divide the group into three smaller groups to focus on water (summary of main points from the discussion), map (the plan) and time line. Then presentations, which will be documented/filmed with the key statements 3/4 people.

In addition this process has been linked to the participatory video training for staff, local facilitators and community members as a way to create and amplify a voice for these people in their communities and with relevant stakeholders and also as a way of documenting this success alongside their climate smart Agriculture(CSA) success stories. Full reports are attached with this document.

Below is a visual summary of the processes.

Next steps include

- Learning to edit videos and making a rough edit of the focus group discussions and presentations
- Screening of this cut with the learning groups and water committees to further refine and edit the clips
- Decision with the learning group where to screen and or send this video for best effect. This can include government and non government organisations, the broader community and the municipality. Assist in arranging these meetings and screening sessions
- Once the technical briefs are received from the engineer, meet to discuss the next steps in the process, including exploring funding options for these initiatives.



4.2.3 Networking

Two processes are underway:

1. Agroecology network
2. Hoedspruit Hub partnership

The first Agroecology networking process was attended on 16 April 2018 in Hoedspruit. Various networking opportunities have arisen from this interaction, including the present collaboration with the Hoedspruit Hub

4.2.3.1 Partnership between the Hoedspruit Hub and Mahlathini for customised agroecology training

A MoU has been signed between the Hub and Mahlathini for two processes in agro-ecology, namely a marketing process for organic herbs (with 20 participants mainly from Sedawa and Botshabelo) and an organic Mango production training course (for commercialisation of mango production in Lepelle, for 30 participants). Both processes will contribute to the diversifications of livelihoods for the participating smallholder farmers. The first activity here has been to conduct a baseline survey to ascertain needs and next steps. Below is a report of that process.

4.2.3.1.1 Mahlathini site visit report (By: Nelson Ngoveni & Anri Manderson-22 June 2018)

In June 2018, Mahlathini and the Hoedspruit Hub signed an MOU to co-create customised agroecology training for two groups supported by Mahlathini: Herb growers to access markets through the Hub; and mango growers with skills to better and expand their production.

As part of the Hoedspruit Hub process, Nelson conducted site visits for a baseline study on the 19th and 20th of June 2018. These site visits included two workshops, which were held in Lepelle village and the other at Sedawa village. This is a short report on the Hub's findings.

Herb growers

On the 19th the day started with a few stops at the various gardens of the herb growers. It was evident that these ladies had water challenges, but were really trying and committed to growing herbs and veggies. After the few stops we drove to the workshop, which was held at one of the cluster leaders and herb grower's home. The leader had a very impressive garden with many types of vegetables and herbs.





Above: Essinah Malepe's trench beds planted with herbs and vegetables. Magdalena Malepe's planting of spring onions and coriander and vegetable planting in her tunnel. Christinah Thobejane's trench beds planted to mixtures of herbs and vegetables.

In addition, to kick start a more intensive process of growing herbs Mahlathini has provided herb seedlings for sale to the participating farmers (coriander, parsley, basil and thyme), given that progress with planting from seed has been a little slow.

Right; Participant members buying their herb seedlings. The process is being organised by the Local Facilitator- Christinah Thobejane



Questionnaires were completed with some of the participants and from a summary of outcomes, the following can be said:

- The herb growers are mostly female
- The women are experienced vegetable growers, and new to growing herbs
- Most of the surplus vegetables is sold to the community
- The farmers are keen to produce more surplus for market, including herbs
- They don't keep records, thus making it difficult to determine amount of previous harvest
- The garden layout and planting makes very difficult to determine quantities
- The produce(all) is washed with borehole water
- There is currently no solution to transporting produce halfway towards the Hub

Based on these few findings, HH suggestions include the following:

- Conduct a one-day workshop with the herb growers to explain how the process would work, co-developing a logistics solution to get herbs from their gardens into Hoedspruit.
- Also include modules on garden layout and mapping, basic planning, planting schedules, and record keeping. This will assist the Hoedspruit Hub to determine how much herbs they have, and how much they plan to harvest, to organise collection periods more efficiently.
- Timing: Early July 2018. The workshop was held on 9 July and record of the process is to be included in the next Milestone report.

Mango growers

On the 20th we drove to Lepelle village where a workshop was scheduled with the community. From coming into the village one could tell that almost every household had a couple of old mango trees. As the workshop proceeded Nelson was given a slot to introduce himself and explain his reasons for the visit.

During the workshop he had another chance to complete the questionnaires with the various mango growers.

Right: George Sebatane's mango orchard, where he has included basins and improved furrows for irrigation management of his trees.



After capturing the data from the questionnaires, the following can be highlighted as key findings:

- Almost everyone had a couple of mango trees around their homes



- Most of the mango trees have been in their families for a very long time, some even date back to the 1970s. Some of these trees are still productive.
- Apart from watering, the trees are not actively managed to improve yields
- The trees are attacked by pests
- The community has lots of water, but water is managed poorly
- Most of the mangos they produce is sold in bulk to achar producers and or street vendors
- Most of the participants have land and water to expand

Based on these few findings, HH's suggestion include the following:

- South Africa currently has no organic mango producers, which opens up the market for interested candidates. The Bryanston Natural and Organic Market has indicated that they would take all available organic mangoes from these producers, on condition that their practices are PGS-endorsed.
- We thus suggest a five-day workshop on how to improve current yields on the trees, using organic methods. It's important to note that this may take another cycle, as trees are already starting to flower, which ultimately determines yields.
- There may be some things to do now that could slightly improve yields, but ultimately the trees would need to go through an entire well-managed cycle, and potentially even a few to reach ultimate production.

The training will thus include the following: Organic practices for optimising mango yield, ideal tree varieties for expansion, grafting, and an introduction to PGS and its' required record keeping. The diversity of ages within the group requires a programme that caters for people with low levels of literacy.

Timing: Early August 2018.

4.2.4 Other Activities

DICLAD module 3 with AgriSI stakeholders and participants in the Lower Olifants was carried out as a one day workshop for the 7 villages involved (Botshabelo, Sedawa, Willows, Lepelle, Oaks, Turkey and Finale).

Attendance was as follows:

- Sedawa, Willows, Turkey; 33 participants
- Botshabelo; 14 participants
- The Oaks, Willows and Finale; 15 participants

The overall purpose of these workshops was to build climate change literacy among stakeholders and participants with regards to climate change adaptation options related to small scale agriculture. As a continuation of this aim, two themes were addressed for this purpose: 1) recapping work that was done in previous workshops to reinforce learning; and 2) improving risk management and planning (namely, how to make decisions in a dynamic context).

The 'Five Finger' principle was revisited alongside the impacts of climate change and potential adaptive measures participants suggested as well as those they have tried or are trying already.

Then a number of different aspects were explored including; traditional signs of weather - traditional forecasting methods and what they use weather/climate information for. Then seasonal and daily weather forecasts were explored looking also at sources of information (e.g. TV, cell phones, internet, radio etc) and how that information is used. Participants also discussed their understanding of the reliability of these forecasts.

Participants also discussed seasonal calendars and drew up cropping calendars for their villages. Below is a combined seasonal calendar for the Lower Olifants- including information from all the workshops.

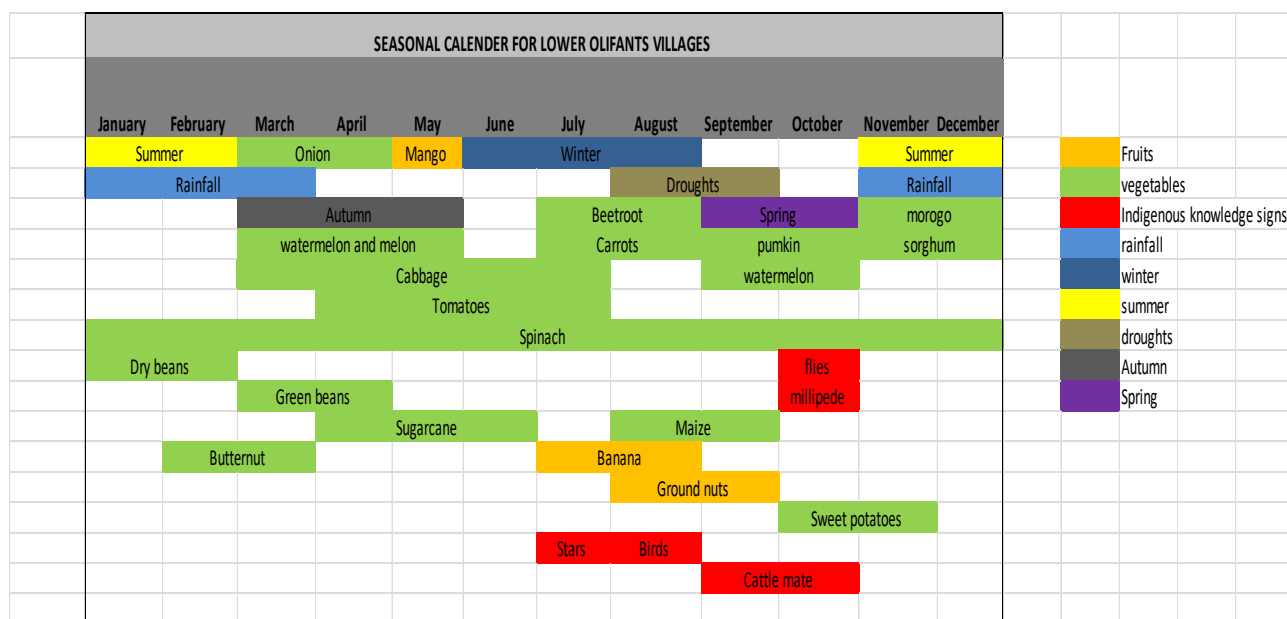


Figure 1: Combined seasonal calendar for 7 villages in the Lower Olifants Basin.

A full report is attached (DICLAD Module 3 with AgriSI stakeholders in the Lower Olifants 14th - 16th March 2018 Report)

4.3 Success and Challenges in meeting milestone.

Lack of water is the primary concern in a number of villages and until headway is made with water provision for productive activities, it is unlikely that much progress will be made. Lepelle and Sedawa in particular return to this topic repeatedly. Thus a process has been put in place with formation of water committees, to manage the planning and implementation of local water actions in these villages. This process also is central in the participatory video initiative as it is hoped these small videos will alert the local authorities to the communities’ plight and initiate more constructive engagement.

Learning groups in Willows and The Oaks are mostly inactive. A slow process of garden monitoring with the new intern is hoped to assist in understanding the issues to plan specific interventions in these areas.

In Finale, the learning group members are once again engaged in day labour activities on the nearby fruit estates. The meetings have now been moved to weekends to accommodate for this; although from last year our experience has been that participants do not apply themselves to their gardening activities once their seasonal farm works starts up.

Betty Maimela has been introduced to all communities and is taking taxis to the villages to do her support and monitoring work. She needs to give a concerted effort to practicing her driving skills before another arrangement will be possible.

4.4 MERL.

4.4.1 Indicators: Assessment July 2018

Figures in the table reflect numbers for the period of reporting, in this case May-July 2018.



A combined team meeting to review this assessment sheet was conducted on 18 June for this reporting period and numbers have further been summarised from field reports and discussions with the field team.
Table 5: Summary of indicators assessments for the duration of the AgriSi project: April-July 2018

Indicator	Overall target	Actual July 2018
No of participants in learning groups	120	98 DICALD w/s 3 (63); Lepelle (16), water. Turkey (48) - soil fertility, tunnels. Botshabelo (6), Sedawa (28), Turkey (48) - calendars and seed saving. Lepelle (20) Sedawa (27) - water focus groups
No of learning groups	6-7	6
No of local facilitators	6	4
Percentage of participants engaged in CC adaptation responses	1-2 (45%) 2-3 (25%) >3 (10-15%)	1-2 (67%) 2-3 (16%) >3 (1%)
No of participants experimenting with new innovations		
-local	15%	5%
-co-designed	45%	43%
No of participants showing increased knowledge	35%	-
Percentage of participants engaged in collaborative activities	35%	44%
Percentage of participants with improved livelihoods		
-increased availability of food	40%	38%
-increased income	5%	-
-increased diversity of activities and livelihoods options	5%	-
Qualitative assessments; -stakeholder engagement -Increased understanding and agency to act towards achieving increased resilience - Adaptation and innovations into local context -Potential for increased resilience -Social engagement	Stories, case studies (5), CC impact summaries (4), best practices booklet	Turkey (1)
Stakeholder engagement	MoU with Hoedspruit Hub for sale of herbs and veg from 2 learning groups Agro-ecology network	

COMMENTS ON INDICATORS IN THE TABLE ABOVE

The indicators have been jointly compiled with the MERL team also to reflect and provide information for the overall indicators for the ResilimO programme. Some are process indicators that can be assessed continuously, some are assessed through the garden monitoring and yet others are more evaluative and are assessed during review sessions and workshops.

- The number of Local Facilitators have been reduced, as some of the village learning groups are not very active and LF's there have not been active themselves
- The percentage of participants engaged in CC responses changes over time and is somewhat different for each milestone, as it depends on the practices introduced and worked with in that period and how active the participants involved are. For example, the uptake in villages such as Turkey is higher than villages such as Lepelle. These different percentages are then averaged over the period of the project to create a final percentage at the end.
- In terms of local innovations, this has to do again with what is focussed on during the period of the milestone and who was visited. The point of tracking local innovations is to understand how much participants innovate in a certain field themselves and how we can enhance the impact of such



practices by appropriate interventions. In this case an example could be small dams that are dug in the yards- this is a local practice, implemented only by a small number of farmers; but is significant and interesting for the process as a whole

- Number of participants showing increased knowledge is an indicator that is assessed primarily through review workshops and processes with the learning groups. This was thus not done during the period of the present milestone.

4.4.2 Turkey case study

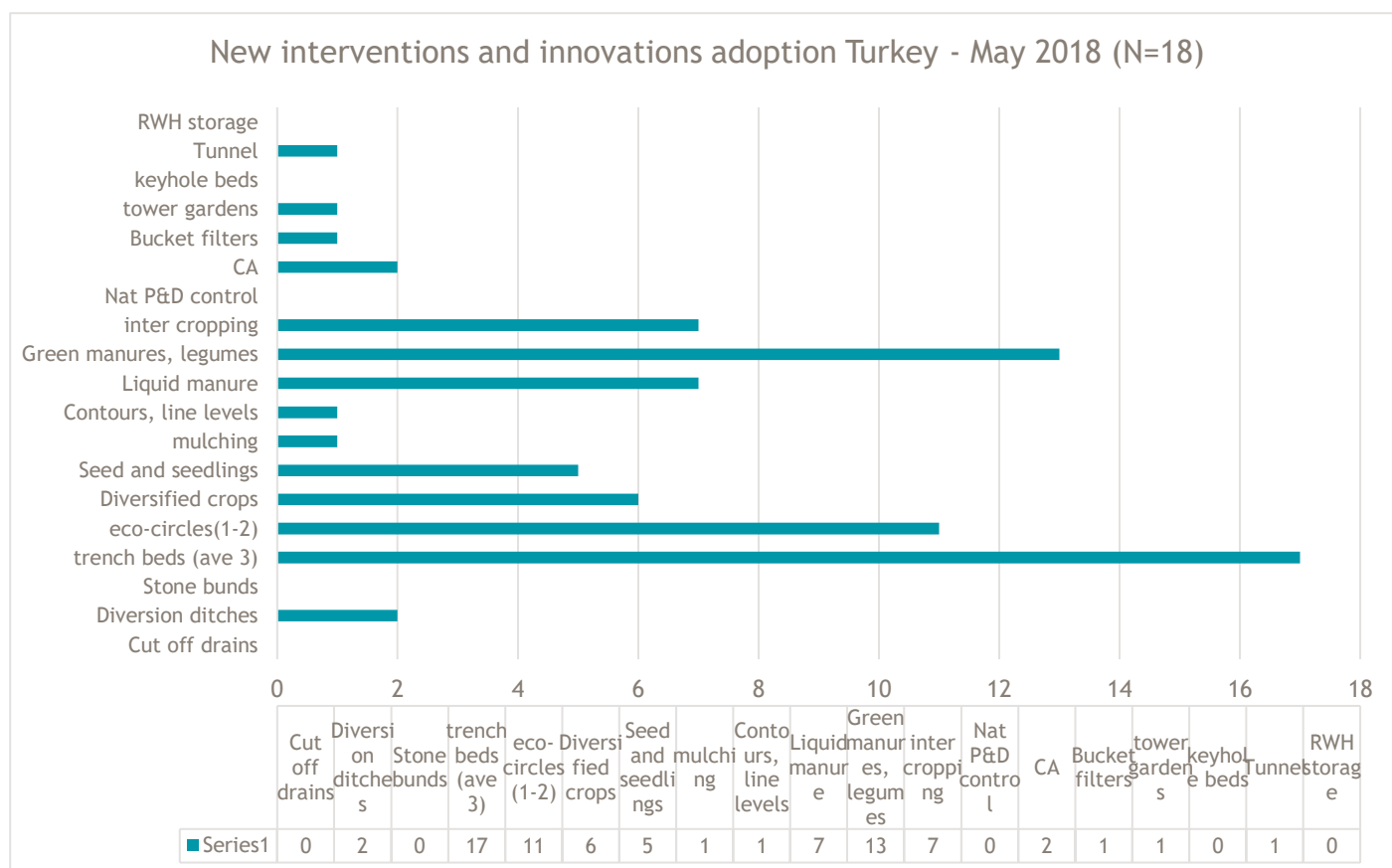
4.4.2.1 Implementation of new ideas in Turkey

The learning process is designed to start with the gardening practises known to participants and to build on those and add new ideas and practices that participants can try out.

Learning activities in Turkey to date include: Climate change and adaptation, Conservation Agriculture Soil fertility and bed design, grey water management (tower garden and drip kits), tunnel construction, farmer experimentation, liquid manure, natural pest control, cropping calendars and seed saving

The table below gives an indication of which new ideas/innovations participants have been trying out in Turkey after the learning sessions were conducted. 90% of participants have tried out at least one of the new ideas introduced.

Table 6: Summary of new ideas/interventions being tried out in Turkey: Jan-May 2018



From the above table and figure it can be seen that around 85% of participants are implementing the trench beds, 65% have planted legumes, 55% have tried out the eco-circles and smaller number of participants have followed through with the seedling production, diversified cropping, mixed cropping,



liquid manure and mulching. Some of the soil and water conservation practices such as contours, diversion ditches and the like still need to be introduced. The number of participants who mentioned implementing the Conservation Agriculture is small, due to the complete crop failure for these experiments, which were abandoned mid-season. Also, thus far only a few tunnels with drip kits have been constructed- more as pilots and demonstration sites, for the learning group to get an idea of how these work, prior to more extensive implementation.

The garden monitoring process tracks both the local good practices and new innovations/ideas implemented by participants. The idea is that each garden is monitored at least once a season to ascertain progress overtime. In addition, an assessment is made of food security for the household (showing no of different crops/ vegetables harvested on a weekly basis and how often the family can have food form their garden.

The monitoring is undertaken jointly between the local facilitators for the area and the new local intern that has been employed for this purpose. An e-survey format has recently been set up, so that these monitoring processes can be done on tablets and the data uploaded for easier access and formatting into a coherent database.



Below are some photographs showing implementation in Turkey



Figure 1: Magdeline Shai-Turkey 2 - eco-circle with mixed cropping including green beans, and spinach



Figure 2: Magedline Shai- seedling production - including newly received seeds of rape, mustard spinach and beetroot



Figure 3: Shade netting structure put up by Mafogo Maapule - Turkey 1



Figure 4: Further small netting structures for individual beds in Mafogo's garden



Figure 5: 3 trench mulched trench beds, one planted to mustard spinach - Magalangake Mgaale - Turkey 1



Figure 6: A small dam dug in Ms Mogale's yard- it holds water for around 3 months/year



Figure 7: 4 trench beds prepared by Mabiletse Mogofe- Turkey 1



Figure 8: Spinach planted in a container and protected from heat and browsing by netting. In Mabiletse's yard.



Figure 11: Left: Hand dug well in Sarah Madire-Madire's homestead (turkey 2) and (Right) 3 of the 5 trench beds she has constructed.



Figure 9: Dinah Masete's 2 eco-circles planted to spinach, mustard spinach, rape and tomatoes and mulched. (Turkey 1)



Figure 10: Sarah Mohlale's tunnel and outside trenches- for her experiment, 3 drip kits and (Right) her mixed cropping eco-circle (Turkey1)



Figure 22: Tower garden for Nkurwane Shaai, Turkey 2



Figure 13: Mothouane's 2 eco-circles (Turkey 1). Rest of garden not that well developed



Figure 14: Left-Lydia and Phelicia Shaai's garden in Turkey 2. They have focused on herb planting and mixed cropping; incl lemon balm, rosemary, coriander, and spring onions. Right an eco circle with mulching and mixed cropping



Figure 15: Interesting garden layout of furrows and ridges that are on contour and includes basins for rainwater harvesting - Mtshego Shaai's garden, Turkey 2

4.4.2.2 Farmer Experimentation

An integral part of the learning process is for participants to take on farmer level experimentation with the new ideas and technologies introduced. They try out these new ideas alongside their normal practices, to be able to observe and compare any differences in growth and production as a result of implementing the new or improved practices.

The percentages of participants who are implementing a certain technique such as trench beds for example differs from the percentage of participants actively “experimenting” with trench beds. For the latter the participant consciously undertakes an experiment, with a control and observes and measures the differences between their normal practice as the control and the new technique they are experimenting with. In this way they can make informed decisions around the impact of the technique.

The figure below indicates the individuals who have taken on experiments and what they are trying out in the Turkey Learning group to date (January-May 2018). Around 43% of participants are experimenting with



trench beds, 24% with eco-circles, 16% with mixed cropping, and 3% respectively with furrows and mulching. Around 11% of participants are not implementing farmer experiments.

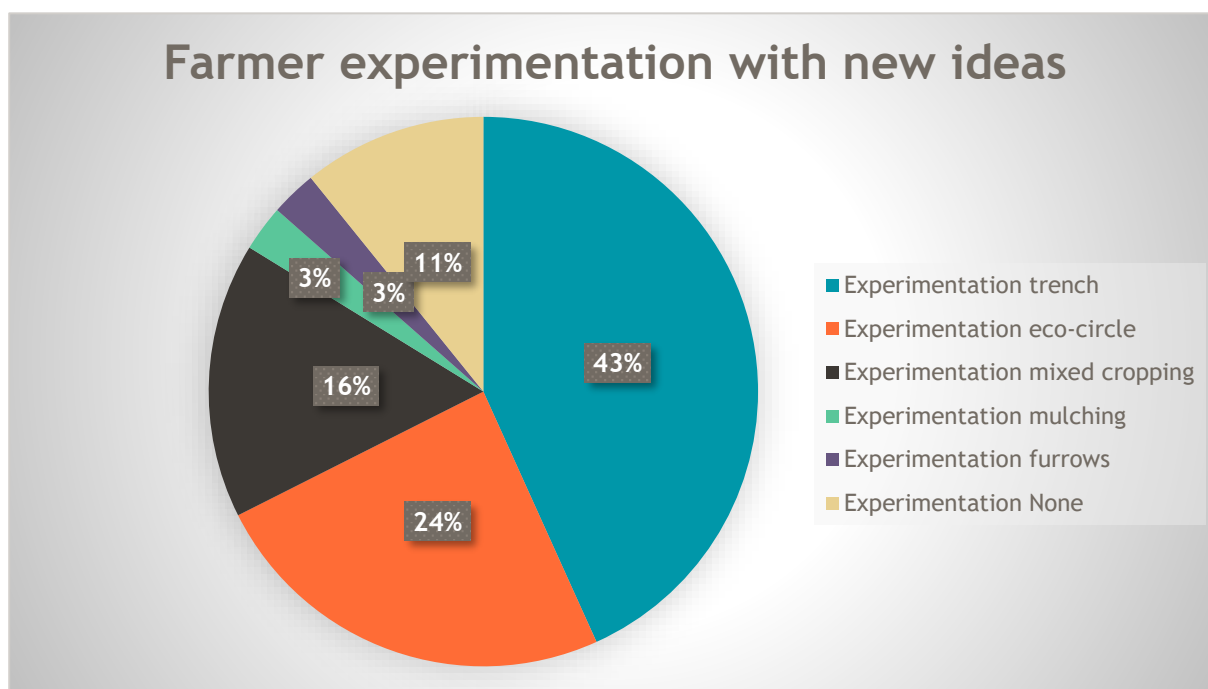


Figure 3: farmer Experimentation; numbers of participants experimenting with a range of new ideas/innovations. Turkey, May 2018

4.4.3 Project Life Change Questions:

1. Do we have examples or stories of how we or others are in the process of adaptive management related to CC? (adapt, reflect and respond to....) and examples of what this adaptive management is?

Some of the stories shared at a workshop in Turkey relate to this question, for example:



Mr Shai is able to sell spinach worth R 100 a week from the tower garden. He has praised the tower garden for its ability to save water and said the soil fertility in the tower garden is very high. He wants to try more of them and encourages others to try it as well. Other members of the learning group have passed by Mr Shai's garden to see how the spinach grows in a tower garden



Mrs Mogadi was also amazed by the amount of spinach she was able to produce from a small eco-circle (1 meter diameter). She mentioned that if such easy to do techniques work, then tunnels combined with drip kits will work even better. Mr Malatji added to her story to say, these are the simple things which we can all try.



It is becoming clearer to participants that using the agroecological practices and or techniques introduced work better if they are tried together. For example mulching on it's own, without also looking at soil fertility, water management and mixed cropping has limited benefits. They have also adapted mulching processes by experimenting with different materials such as tree leaves and wood chips. Others have found that mulching may attract termites and so have thought of using small pieces of shade netting to protect their beds and eco-circles. The shade provided has a similar effect to mulch in terms of reducing evaporation and decreasing temperature.

9. *Do we have stories that show innovation or lack of innovation towards positive change? What insights have we gained into how innovation can lead to positive change? (INCREASED RESILIENCE)*

Isaac Malatje is impressed with how well trench beds are doing in Sedawa and he wants to try this on a somewhat larger scale to see if he cannot use gardening as an income generating activity. Others are following his lead, including Christina in Sedawa who is now making longer trench beds and this has increased her production. During one the workshop held at her homestead she was able to sell spinach worth R 230



Above left to right: The large trench beds constructed by Isaac Malatjie in Turkey, which have been used now also by Christina Thobetjane from Sedawa, having listened to his explanations. She has been selling spinach to the community and is doing well with this activity



As facilitators we have noticed that certain innovations are taken up more easily than others. The initial drivers here are short term benefits and ease of implementation and functionality. Some of the practices are not that easy, such as trench beds for example and with these people have now seen others succeed and have noted the benefits through word of mouth. This then creates a situation where people adopt these practices themselves.

11. *Do we have stories that show evidence of, or an interest in self organisation towards collective action? What insights have we gained into how self organisation can lead to collective action?*

In Turkey learning group participants mentioned that it is possible to invite other stakeholders (Landcare, the Department of Agriculture and the municipality) to these meetings (it looks like your (MDF's) process is focusing more on educating us, but we might need support (financial) in implementing some of the things you introduce/ what you might introduce in the future). They followed on by inviting the extension officer to the learning workshops.

Two water committees have been set up (Lepelle and Sedawa) to organise participants to take action in local water provision schemes. In both cases participants are collecting monies for the purposes (for buying cement and piping) and have asked for technical assistance with the design of the system.

4. *Do we have stories to show that learning together is happening or that there is an interest in learning together? What insights have we gained about how to learn together?*

People learn the most when they share their experiences with each other. Through the workshops, having people from different places/villages helps with this. It has become more common for members of the Sedawa group to join workshops in Turkey and vice versa. These forums are providing platforms for people to share

5. *Do we have stories of how we and or others are able to think systemically? What insights have we gained?*

Regarding water management we are now seeing farmers starting to integrate knowledge and play that to their situations. Some individuals have designed their own catchment areas in their gardens for harvesting rainwater working with some of the principles that were introduced in the learning workshops. They are starting to appreciate that soil holds the most water or holds water like a reservoir and that promoting infiltration and water holding improves this process. They are using different water sources and are becoming more comfortable with use of greywater as they start to experience the possibilities of cleaning this water for re-use.

6. *Do we have stories of how we and or others are able to be inclusive and democratic? What insights have we gained about how this can be achieved? (STAKEHOLDER ENGAGEMENT).*

Through the agroecology learning network set up earlier in the year a working relationship has been built with the Hoedspruit Hub to collaborate in efforts around capacity building in the community and in starting a small organic herb marketing scheme. In this way the community can be better supported through these joint efforts, while the organisations focus on their core activities; complementing each other.

More and more government officials (agricultural extension officers), councillors and indunas are becoming involved at the learning group level, as they are joining in on workshops and participating in community led actions for improvement. This process is working a lot better than the more formal invitations that were provided to these stakeholders to join past workshops.



4.4.4 Work Plan for next period (7 July-10 October 2018).

1. Learning sessions; review of S&WC and CSA, for all groups (1 day), Seed saving and seed banks, crop calendars training- continued for Finale, Oks and Willows. Start on Poultry production training in Botshabelo, Turkey, Sedawa).
2. Group editing of the participatory videos in water management and success stories for initial community level screenings and planning for interventions with service providers and other stakeholders.
3. Individual farmer experimentation - prioritized, garden monitoring.
4. N initial group of 20 participants (Sedawa, Botshabelo) are planting their first round of herbs (parsley coriander, basil, thyme to provide a test run for the organic herb marketing process in conjunction with the Hoedspruit Hub. These farmers will be provided with ongoing support and further planning sessions are to be held regarding supply, quality, pricing and logistics
5. Tunnel construction continued in Turkey, Sedawa, Finale
6. Cluster network session; Impacts of activities
7. Agroecology network- sessions on a CoP for best practices in CSA
8. Continuation of garden monitoring and support for Local Facilitators and learning groups (now using the e-survey format)
9. Finalise and run fruit production training in conjunction with Hoedspruit Hub
10. Use of participatory video as a tool to build agency in the villages for CCA activities and communicate successes and issues with relevant stakeholders

5 Overall Progress of Project

5.1 Integration of milestone status.

The table below indicates overall completion of activities according to milestones.

Table 7: Milestone target completion May-July 2018



MAHLATHINI MILESTONE COMPLETION: Completion to date % (in black)							
Key activities / Milestones	MILESTONE 1	MILESTONE 2	MILESTONE 3	MILESTONE 4	MILESTONE 5	MILESTONE 6	MILESTONE 7
Inception report	100% /						
Setting the scene		50%					
<i>New villages, baselines, visioning scenarios</i>		Turkey, CCA workshops, visioning and baseline			New village, CCA workshops, visioning and baseline		
Learning and mentoring		25%					
<i>Learning sessions x 3-5 for ea learning group, value adding activities, mentoring LFs (24 sessions total)</i>		Turkey (3 sessions) Sedawa, Botshabelo, Lepelle (1 session)					
Experimentation & intro to innovations		20%					
<i>Individual experimentation New innovations -seed saving, fodder production etc</i>		2 villages (Turkey, Sedawa)	6 villages	6 villages	6 villages	6 villages	6 villages
Collaborative work		20%					
<i>Joint experimentation on new ideas Collective action RWH, erosion control activities</i>		3 villages (Turkey, Sedawa, Lepelle)					
Networking and cross visits		15%					
<i>Community level cross visits Stakeholder engagement</i>		-Agroecology network -Hoedspruit hub					

5.2 Project risk and mitigation summary.

5.2.1 Implementation risks and mitigation

Implementation is proceeding well at this stage, with no further risks identified. Risks that exist and are being managed include:

- Lack of water which hampers participants' ability to do any gardening or farming. This has reduced the number of active participants as the situation is slowly and markedly worsening.
- There are some internal conflicts regarding traditional councils and chieftainship in the Mametje area, where two chiefs are conflicting over who is in control in those villages (Sedawa, Botshabelo, Mametje). This has caused some individuals to withdraw from the learning groups



- The demand for implementation of tunnels is much higher than the project can provide. A set of criteria have been put in place to prioritise participants to receive support in this aspect. These include women headed and poorer households

5.2.2 Financial risks and mitigation

The project is on track and is being managed within the budget confines set out.