

Resilience snapshots; Limpopo

6 participants from Sedawa and Turkey in Limpopo; Feb-March 2019

Learning and change

What have you learnt about dealing with CC and climatic extremes?

- I have learnt that practices such as trench beds and tunnels provide good growth and yields, despite difficult weather conditions. Also, these practices are cheap. Although it is initially a lot of work, the increased yields make a big difference. We get more food than we did before and will now be able to continue farming
- Tunnels also help in reducing heat and water stress in plants and this leads to much better production
- Tunnels help in this extreme heat by protecting our vegetables from heat and pests. Climate smart practices enable us to continue with farming activities even in this difficult climate change.
- Having a tunnel and mulching inside the tunnel is the best in water management for irrigation.
- Irrigation management, such as using drip kits help a lot as there is less evaporation and water is saved. It also saves time.
- Working with mixed cropping and crop rotation has decreased the incidence of pests and diseases, although there are still problems.
- Including more organic matter in the soil helps to hold water and to protect plants from heat stress.
- Working with the five fingers principles [manage soil movement, manage soil fertility, manage water, manage crops and manage natural resources) (tool) helps to keep in mind all different aspects to include in changing practices
- Using liquid manure and mixed cropping means that I now do not need any other means for pest and disease control.
- I have learnt about practices that will help me continue with farming activities even though water is a struggle and the sun is too hot for any vegetable to survive in our environment, the little we have been given is better than nothing.
- Leaving the soil exposed to heat and rain and turning over the soil to plough and plant has destroyed the soil making it infertile and very hard. Improving the soil takes time, but makes a big difference in growth of crops.
- I learnt to conserve water, by using grey water and mulching in my garden. I also learnt a lot on the importance of soil health.
- I have learned the importance of saving water and the conserving our soil.
- I have experienced harsh weather with no rain and harvests using our traditional ways of farming, which affected our livelihood as we had to buy all vegetables instead of growing them myself. Now I know how to deal with changes of climate, since I met Mahlathini and AWARD, and they taught us practices that changed my life. I don't buy vegetables that I need every day, I pick from my garden.

What is your experience regarding the impact of CC on your life?

- Climate change has been hard on us, especially on our farming activities. Farming seems impossible in this condition, especially with no rain. Being unemployed and relying on old age grant is even worse, as the head of the household; farming makes it better because you farm for both consumption and making an income

Do you share your knowledge and experiences with the learning group or community members?

- Yes, I talk to my neighbours about the gardening practices, so that they can also try and revive their gardens
- Yes I share my experiences and knowledge with community members at the workshops and my neighbours; by telling them what we do and how the knowledge is helping us in terms of making things better
- Yes I share my knowledge, especially with unemployed members of the community because I am making a living and I don't go hungry with my small garden

How do you share the knowledge gained with other members of your community?

- Discussions at savings meetings, at the springs when we collect water
- By inviting them to join us on our meetings and sharing experiences
- Always have meetings where we invite community members to join and we share all knowledge and experiences
- I invite people community members to attend meeting with us and also allow community members in my household
- I share my experiences and knowledge learned from working with Mahlathini with the community and I also recruit new members to join and learn like am learning.

- I do visits community members selling them vegetables and share with them what I have learned and how it is helping me, to encourage them to see what we are benefiting to better our finance and was of farming

What helps you to learn more about new innovations and information?

	No (N=6)	Comments
Listening to other farmers experiences and experiments	5	
By doing and experimenting in own garden	5	
Motivated by other farmers work and experiences	4	This helps to motivate me to try out some of the ideas myself
Learning workshops	5	

What new things have you added into your practices? How has it worked?

- The shade net tunnels work very well to reduce heat and water stress and there are fewer pests. We have added further shade- netting structures in our gardens
- I have made my own version of a drip-kit using an old bucket and piping. This saves water and time
- We dig small dams in our gardens during the summer months, so that the added water can penetrate into the soil and there is enough moisture in the soil to grow our dryland crops such as maize, cowpeas, peanuts and sweet potatoes
- Using manure and mulching in our traditional beds- the furrows and ridges has helped to increase crop survival and yields
- The tower gardens are very productive and this is a nice, clean way of using greywater, which is sometimes the only water for gardening we have access to.

Climate smart practices

Impacts and lessons learnt

Past Issues	Past practice	Present practice	Impact	Lessons
Drying fast, wilting of plants, having to irrigate often	Exposing the soil	Cover the soil by mulching and farming inside the tunnel	Less evaporation and my vegetables don't dry out quickly	Learned the importance of covering the soil and good water management
Poor quality vegetables	Not fertilising the soil and disturbing the soil	Adding organic material to the soil and minimum soil disturbance	Good soil condition and healthy vegetables	I have to look after my soil in order to continue with my farming activities because I love farming
Pest and disease problems	Used ash -which is only effective for certain pests	Use liquid manure made from weeds and cow manure, I also use mixed cropping for pest and disease control	Very good and effective	We don't need chemicals to fight pests and disease in our garden as they will affect our soil and our health
Pest problems	Using blue death	Use liquid manure for both soil fertility and pest and disease control	Healthy vegetables and good soil conditions	We can use organic materials from our household to treat pests and diseases without using chemicals

Soil erosion	Turning the soil when planting maize and cover crops.	Minimum soil disturbance when planting maize (CA)	Softer soil that holds more water, better yields	I learned that I have to conserve my soil, always cover my soil.
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Assessment of impact for CSA practices tried out using local indicators

-1 = worse than normal practice

0=no change

1=some positive change

2=medium positive change

3= high positive change

	Name of practice	Soil	Water	Productivity	Labour	Pest and disease control	Cost and maintenance	Livelihoods	Adaptation
1	Trench beds	2	2	2	-1	0	2	2	2
2	Tunnel (w trench beds)	2	3	3	-1	2	1	3	3
3	Mulching	1	1	2	1	2	2	1	1
4	Mixed cropping and crop rotation	0	1	1	1	2	2	1	1
4	Tower garden	2	3	3	2	0	0	2	2
5	Planting basins	0	2	2	0	0	1	1	1
7	Raised beds, with mulch	1	2	2	1	0	1	0	1
8	eco-circle	2	3	2	-1	1	0	1	1
9	CA; w intercropping, legumes, cover crops	3	2	3	1	1	0	2	2
10	Using goat manure (composted in a kraal)	3	1	2	0	1	0	1	1

Resilience snapshot

Resilience indicators	Increase for Limpopo	Increase for KZN	Comment
Increase in size of farming activities	Gardening; 1% Field cropping; – 98% Livestock; 6%	Gardening – 18% Field cropping – 63% Livestock – 31%	Cropping areas measured, no of livestock assessed Dryland cropping has reduced significantly due to drought conditions and infertile soil
Increased farming activities	No	No	All involved in gardening, field cropping and livestock management
Increased season	Yes	Yes	For field cropping and gardening- autumn and winter options
Increased crop diversity	Crops: 21 new crops Practices: 11 new practices	Crops: 12 new crops Practices: 8 new practices	Management options include; drip irrigation, tunnels, no-till planters, JoJo tanks, RWH drums,
Increased productivity	Gardening; 120% Field cropping: 15% Livestock: 6%	Gardening – 72% Field cropping – 79% Livestock – 25%	Based on increase in yields (mainly from tunnels and trench beds for gardening CA for field cropping)
Increased water use efficiency	45%	25%	Access, RWH, water holding capacity and irrigation efficiency rated
Increased income	13%	13%	Based on average monthly incomes, mostly through marketing of produce locally and through the organic marketing system
Increased household food provisioning	Vegetables; 7-10kg/week Fruit; 5-10kg/week	Maize- 20kg/week Vegetables – 7kg/week	Food produced and consumed in the household

	Dryland crops (maize, legumes, sweet potatoes); 5-10kg/week		
Increased savings	Not applicable	R150/month	Average of savings now undertaken
Increased social agency (collaborative actions)	2	2	Learning groups and local water committees
Increased informed decision making	5	5	Own experience, local facilitators, other farmers, facilitators, extension officers
Positive mindsets	2-3	2-3	More to much more positive about the future: Much improved household food security and food availability

RESILIENCE SNAPSHOT

Date February 2019

Province KZN

Village Bergville, Midlands

6 participants across 3 villages (Ezibomvini, Eqeleni and Gobizembe)

	Before (Size in sqm)	Now (Size in sqm)	Comment: Percentage increase
Increased in farming (Size)			
Gardening	76	93	18%
Field cropping	1400	3767	63%
Livestock	22	32	31%
Trees and other resources	4	4	0%

	Y/N before	Y/N now	Comment:
Increased diversity in farming			Most participants undertake activities in all four farming categories
Gardening	1	1	
Field cropping	1	1	
Livestock	1	1	
Trees and other resources	1	1	

	Management and practices before	No before	No now	What has changed; new crops	What has changed; new practices	What has changed; new management
Increased diversity (1)						RWH (JoJo tanks and drums), greywater and organic gardening, tunnel, drip irrigation,
Gardening	raised beds; use of ash and kraal manure	1	4	Kale, Chinese cabbage, carrots, mustard spinach, Coriander Maize, beans, cowpeas, Lab-Lab, sunflower, sunn-hemp, millet, potatoes, sweet potatoes	mulching, trenches, seedling production, more crops, tower gardens, eco circles, raised beds, planting basins,	
Field cropping	traditional planting of maize	1	4		CA, intercropping, legumes, cover crops, rotation	
Livestock	extensive foraging	1	1	sunflower, maize	Feeding of poultry - crushed maize and sunflower	

	Types	BEFORE: Quantity (KG, No)	NOW: Quantity (KG, No)	Percentage increase	(Amount in kgs/tonnes, 10,20,50kg bags/containers, no of meals (for a family))
Increased productivity	Gardening				
	Spinach	7,8	15,3	49%	
	Cabbage	5	8	38%	

	Potatoes	10	20	50%
	Carrots	0	10	100%
	Green pepper	0	30	100%
	Chinese cabbage	0	8,5	100%
	Chilli	5	7	29%
	Onions	5	8	38%
	Beetroot	4,3	11,3	62%
	Kale	0	15	100%
	Mustard spinach	0	30	100%
	Coriander	0	30	100%
Field cropping	Maize	99,3	257,8	61%
	Beans	4	16,8	76%
	Cowpea	0	5	100%
Livestock	Chickens	15	20	25%

	Increase Access	Inc RWH	Inc water holding	incr water productivity (irrigation)	SCALE
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Increased water use efficiency (incl RWH, water holding, water access, water productivity)

1

1

2

0= same or worse than before; 1= somewhat better than before, 2= much better than before

	Income before (ave monthly in Rands)	Income now (Ave monthly in Rands)	Comments
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Increased livelihood security (income)

1433

1650

	Food types (staples, veg, livestock, fruit)	Quantity/ week (kg)	No of times/week (1-7)	Sales/week (in Rands)	Comments
Increased livelihood security (Household provisioning and food security)	Maize	20	7	0	6 of 6
	Veg (Spinach, chillies, green pepper)	10	5	225	2 of 6
	Veg (spinach, chinese cabbage, tomato)	10	3	0	6 of 6
	Veg (beetroot, chilli)	1	1	0	6 of 6
	Chicken	2	2	0	1 of 6
	Pigs (kg of meat)	10	1	2500	1 of 6
	Cattle (no sold/yr)	1		10000	1 of 6
	Fruit	1	1		1 of 6

	Income options Before	Income options Now	Comment; name new options e.g. which crops, etc	Scale
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Increased livelihood diversity/options

1,4

1,3,4

Small incomes from farming now possible

1=social grants; 2= remittances; 3=farming income; 4= small business

	Amount per month Before	Amount per month Now	Use of savings	Scale
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Savings (safety, security, achievement)

0

R150

2,3,4

1=food; 2=household use; 3=education; 4= production; 5=other

	Yes/no Before	Yes/no Now	Comment
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Increased growing season

Gardening

0

1

Now grows crops in winter in garden and fields

Field cropping

0

1

Livestock

0

0

Trees and other resources

0

0

	Activities in groups Before-name	Activities in groups Now	E.g. savings, church, learning groups, coops, farmers associations, work teams, selling, inputs, farmers centres, water ...
Collaborative actions/social agency	Stokvel	VSLA Learning group	
	Information used to choose activities Before	Information used to choose activities Now	e.g. Other community members, learning in groups, written info, radio, facilitators, extension officers, etc
Informed decision making	Own experience Extension officer	Own experience Extension officer Learning group members Local facilitator Facilitator	
	Rate your mindset Before	Rate your mindset now	SCALE:0=less positive about the future; 1=the same; 2=more positive about the future; 3=much more positive
Positive mindsets	0	2-3	Much improved household food security and food availability.