

Climate Change and Risk Reduction Report on village level climate change workshop

KM Rowntree

October 2019

DISCLAIMER

The capacity building, implementation and research has been funded by the Department of Environment, Forestry and Fisheries (DEFF), Chief Directorate: Natural Resource Management Programmes (NRM), Directorate: Operational Support and Planning

The contents of this report do not necessarily reflect the view and policies of the DEFF, Chief Directorate: NRM, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Acknowledgements

Ms Laura Conde Aller is thanked for help with logistics and her support throughout the workshop process - planning, implementation and reporting.

Ms Sithokozile Yalo acted as facilitator, interpreter and translator of the workshop recording.

Ms Sibongile Nodolo (vetiver monitor from Qulungashe) helped to advertise the workshop among local residents and to organise the venue and catering.

Abbreviations

CoP Community of Practice

CWP Community Works Programme

SABC South African Broadcasting Service

SAWS South African Weather Service

WRC Water Research Commission

Climate change workshop, Qulungashe 21st August 2019

Attendance

The full attendance list is given in Appendix A

Village members

23 people attended from the two villages.

Maxesibeni 3

Qulungashe 20

Men 12 - (2 CWP)

Women 11 - (8 CWP)

Observers:

Nosiseko Mtati - Catchment Coordinator Tsitsa Project

Buchu - Fire & Grazing CoP (Community of Practice) Tsitsa Project

Siphakamisa Ngobane - Lima

Justice Mogenene - GIB

Facilitators

Prof Kate Rowntree

Ms Laura Conde Aller

Ms Sithokozile Yalo

Overview

The climate change workshop held in Qulungashe on 21st August 2019 was envisaged as a pilot workshop to explore how climate change adaptation can best be promoted at the village level. The long-term learning objectives are summarised in Figure 1. Learning is seen to be achieved in the context of two time-spans, firstly the short term in which participants adapt to more immediate short term observed changes and secondly to the longer term predicted climate change. This second set of objectives is seen as the ultimate goal of the workshops but is only likely to be achieved over the longer term.

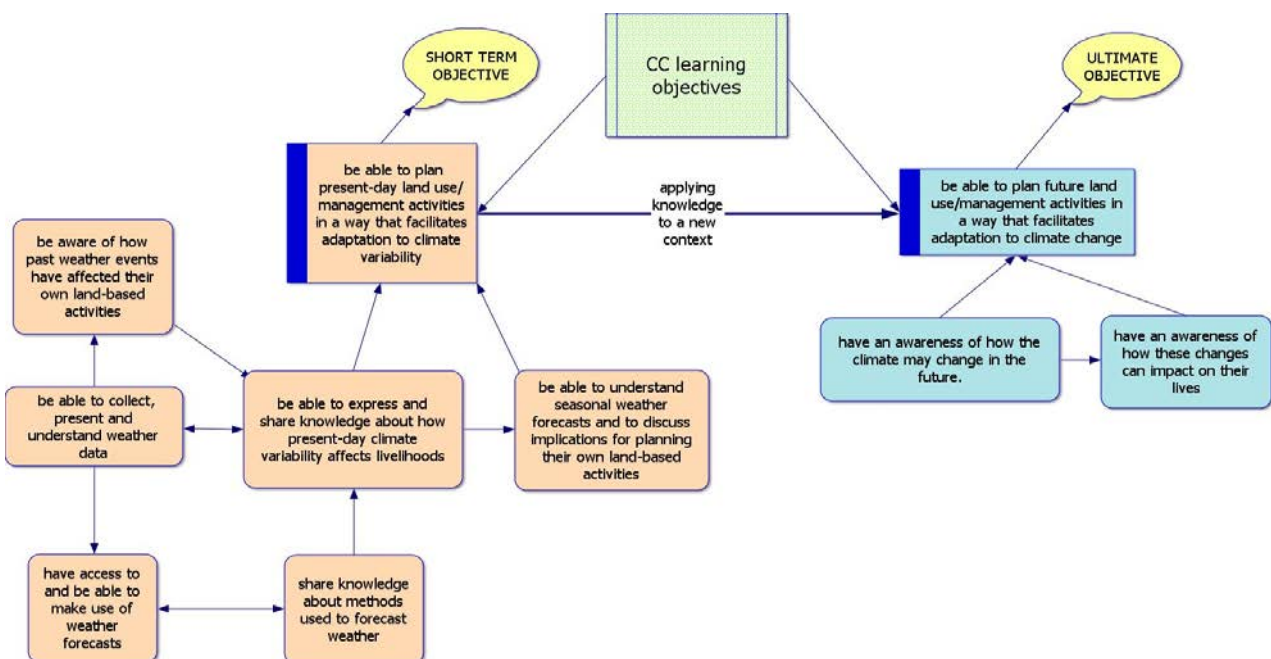


Figure 1. Climate change learning objectives in the short and long term

Table 1 gives the list of activities, who was involved and the time each one took. The workshop lasted approximately two and a quarter hours and consisted of three main sessions followed by a general evaluation. The activities were led by Prof Kate Rowntree, in English; Sithokozile Yalo acted as interpreter. They were conducted either as general discussion sessions with the larger group or in three small groups of seven to eight people. The small group activities were normally followed by feedback to the larger group.

Mr Justice Mogenene from GIB took an active part in the workshop, joining one of the groups.

Figure 2 shows the venue used (a), Kate Rowntree opening the workshop (b), Sithokozile Yalo interpreting (c) and participants working in small groups ©.



Figure 2. Workshop venue and facilitation

TABLE 1. LIST OF ACTIVITIES

length of time (min.)	Session	Activity	Who's activity
4	Opening	Hymn and welcome	all
13	Understanding climate change & introduction to workshop activities	Large group discussion of prior knowledge	facilitator led
16	Rainfall, seasonality and adaptation of livelihood activities	Examined weather related photographs	small group activity
15		Feedback	small group feedback
12		Constructing a seasonal weather graph using blocks. The facilitator created the graph based on input from the large group	facilitator led
13		Constructing cropping timelines, Small groups constructed their own timelines	group activity
17		Rainfall graphs for Lower Sinxaku. Facilitator described graphs stuck on the wall; comments from the large group	facilitator led
6		Constructing adapted cropping timelines. Small groups constructed their own adaptations	small group activity
6		Feedback	facilitator led
7	Weather forecasting & seasonal forecasts	Facilitator led the discussion and described the seasonal forecast	facilitator led
10		How to prepare for this season's weather - group discussions. Small groups discussed what activities they would undertake	small group activity
7		Feedback	facilitator led
6	Reflection and evaluation	Discussion with large group	facilitator led
2	Closure		facilitator led
134			

Session 1: What do you understand by Climate Change/prior knowledge activity

The workshop started with a general discussion on what the participants knew about climate change. The answers showed a clear awareness that there had been changes to recent weather patterns but there was no mention of the possibility of longer term changes (Box 1). Answers mainly related to:

- changes to the timing of rainfall and lack of snowfall, increase in wind; rain used to come after harvest and rotted the maize, now it is coming later
- effects on planting seasons; planting later in response to rain
- increase of veld fires and lack of grass growth for livestock due to lack of rain
- spring drying up and the need to spring protection as water is currently being purchased at a high cost; water needed for gardens

In answer to the question about predictions for the future due to climate change ? “We haven’t heard anything so far. We have no idea.” .

Box 1. Participant feedback on climate change perceptions

What we see recently is that things have changed, snow doesn’t fall at the expected times and there is a lot of wind. We used to have rain after harvest called *Imbolisa Madiza* (rain that rots the maize stalks after harvest time), before ploughing and planting in November. Rain is scarce now and comes at the end of December not November when we used to have maize planted already. Now we plant at any time as the rain comes, there is no more specific time for maize planting. We plant even in February after the heavy rains. Right now I have February-rains maize harvest at my place.

We are supposed to be ploughing now in August to plant potatoes in September for December consumption but that’s not possible as it is very dry.

We used to have rain after it has rained in Cape Town but that doesn’t happen anymore. It showed on TV that we might get rain in January or it might not happen. We can see it’s windy, cold and hot at the same time.

Now that the weather has changed the grazing lands have dried/ burned out and there is water scarcity not for the livestock only but for the household. The water has dried up in springs. We are buying water which is expensive; some of us can’t buy it. I think it would help if we could have a water, e.g. the springs get dug out and maintained so that we can have water access to help plant our gardens in the dry seasons, since we do get money from our produce which helps us. The livestock doesn’t have water problems since we can take them to the river. And also plant feed for the goats and calves. No grass is growing up after fires as well since there is no rain to help growth

After the initial discussions that aimed to get the group thinking about climate change and associated problems, we explained that we want to run a series of workshops over the next one or two years, finding answers to the questions given on the slide (Figure 3a). The purpose of today’s workshop was explained as being about understanding how current weather patterns are affecting livelihoods and how we can adapt to recently observed changes (Figure 3b). The aim here was to embed the participant’s thinking in the context of their own observations before introducing the possibility of a more abstract future change at a later date.

(a)

What do we want to do?
Through a series of workshops we want to find answers to the following questions:

- **What do we understand by climate change?**
- **How will climate change affect livelihoods in Sinxaku?**
- **How can you best reduce the way climate change can affect your life?**

(b)

This workshop

We will be exploring how changes in weather affect you.

- **How do you plan activities in relation to weather in different seasons?**
- **What do you think of as bad weather?**
- **What do you think of as good weather?**
- **What has the weather been like recently?**
- **How has it affected you?**
- **How do you predict what the weather will be like?**
- **What weather can we expect this coming summer?**
- **How can you plan for this weather?**

Figure 3. Slides introducing the workshop

Slides were presented in English but verbally told to the group in isiXhosa

Session 2: Rainfall, seasonality and adaptation of livelihood activities

Activity 1: use cards to identify good and bad weather & seasonal activities

The participants were divided into three groups and each group was given a set of six to seven cards depicting different weather phenomena. All but one card showed a photograph taken in the Tsitsa river catchment. These were:

- a) examples of risks related to bad weather
- b) examples of activities related to different seasons
- c) examples of a range of weather conditions

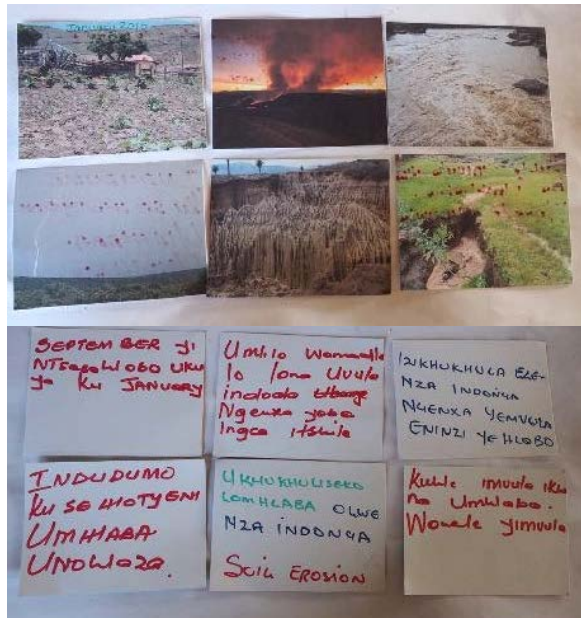
The groups were asked to:

- a) identify the risk and describe the associated weather
- b) arrange the cards by season
- c) describe the weather in each card

The outputs from each group are shown in Figure 4. Groups acted in different ways. One group wrote on the back of the cards (Figure 4a&b), the second drew up a written timeline of the seasons linked to the photographs (Figure 4c&d) and the third group drew a seasonal circle and placed each card on the circle with a description of the weather (Figure 4e&f). It took some time for all groups to finish the task (16 minutes). The same pictures were then projected onto a screen and each group gave feedback on their cards. This also took some time (15 minutes), partly because of technical problems when projecting the slides.



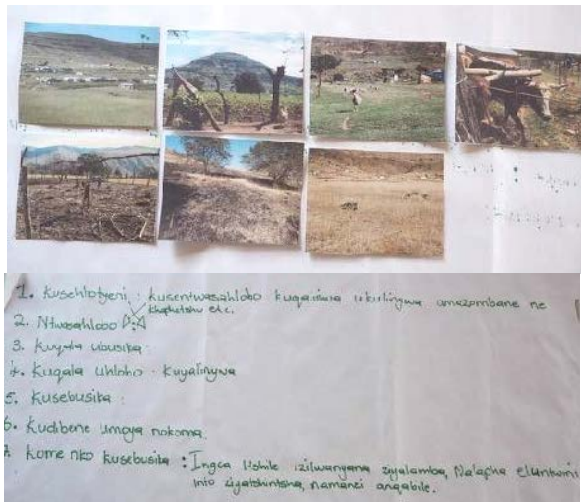
(c)



(d)



(e)



(f)

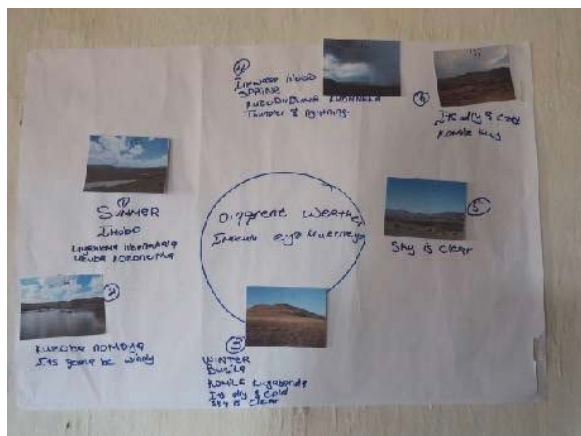


Figure 4. small group activity using cards to engage participants in a discussion of local weather phenomena

The activity served well as an icebreaker which got the groups interacting with each other and thinking about local weather phenomena. The feedback was less useful in giving insights about local knowledge to the facilitators.

It is important to have clear pictures; some of them did not print as well as hoped. In future it might be better to have fewer cards for each group, which could be the same for all groups. This would cut down both the group activity time and the feedback.

Activity 2: construct a seasonal weather graph using blocks

In this activity a 'graph' of monthly rainfall was constructed using wooden blocks placed along a wooden plank that was marked in months. The first month was August, which was both the month in which the workshop was held and also the month in which farming activities might start. Two graphs were constructed. The first represented what the group considered to be normal rainfall and the second what had been experienced recently. The facilitator (Kate Rowntree) led the activity, with vociferous input from the larger group.

Figure 5 shows the process by which the 'normal' graph was constructed. The consensus was that in August it was only windy, rain started falling heavily in September heavily and continued through to December, which was the wettest month. There was less rain in January through to March. From April to August there was no rain.

This first activity was followed by one in which the group was asked to reconstruct the graph to show recent rainfall. In this graph there is no rain from August to November and only a little in December. January and February are wet (with most rain in January), some rain in March and then nothing through to the end of the year (Figure 6). Thus the start of the rain is delayed but the rainy season continues for longer. Overall there is perceived to be less rain.

Activity 3: construct a seasonal time line of activities using blocks (crop production)

Having seen how blocks can be used to construct a rainfall graph, the participants were asked to construct a similar graph to show the time-line of seasonal crop production activities under normal rainfall conditions. This time they worked in their small groups. Different coloured blocks were used to indicate the different activities: ploughing brown, planting light green, growing dark green and harvesting yellow. The colours were chosen by the participants.

The output from the different groups is shown in Figure 7. Two groups focussed on maize production, with ploughing, planting, growing and harvesting happening in succession through the summer season. Under normal conditions ploughing would take place in September and October, planting in November and December with harvesting from around April. (Figure 7 a&b). The third group included vegetable growing in the garden with planting earlier in the season (Figure 7c&d).

Activity 4: look at recent weather patterns using graphs; relate to farming activities

In the fourth activity the perceived rainfall depicted by the wooden blocks was compared to observed rainfall data collected by people in the two villages of Qulungashe and Maxesibeni. Mr Zilwa from upper Maxesibeni has collected daily rainfall since August 2016 but unfortunately his gauge broke in March this year and had not yet been replaced. Sibongile Nodolo, the vetiver monitor from Qulungashe, has been collecting daily rainfall since January 2019. These data were made available before the workshop so that graphs could be drawn and presented to the participants (Figures 8 and 9).

The recorded rainfall pattern for 2018-19 broadly followed that of the perceptions from which the 'recent' seasonal graph was constructed. Effective rainfall was delayed until February and continued into April. However, significant amounts of rain fell in July to September and in December.

(a)



(b)



(c)



(d)



Figure 5. Construction of 'normal' seasonal rainfall

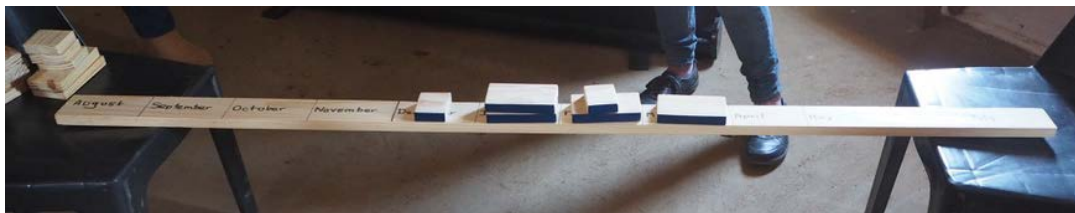


Figure 6. The output of recent seasonal rainfall



Figure 7. Constructing cropping time-lines

There was vigorous discussion about how accurate the graphs were as most participants did not believe Mr Zilwa's data (Figure 8 and Box 2) which showed that there had been significantly more rain than they remembered. This led to a discussion of spatial variability and it was pointed out that in many months in 2018 the rain had fallen on one or two days so the rest of the month would be perceived as dry. (The heavy rain in December is confirmed by Laura Conde Aller and Sithoko Yalo who were present in the area at the time. It was very effective at filling swales but in the absence of water harvesting practices much of the rain may have been lost as overland flow.) It was also pointed out that for the two months when both people were collecting rainfall the amounts and timing were similar (Figure 9), indicating that Mr Zilwa's data was correct.

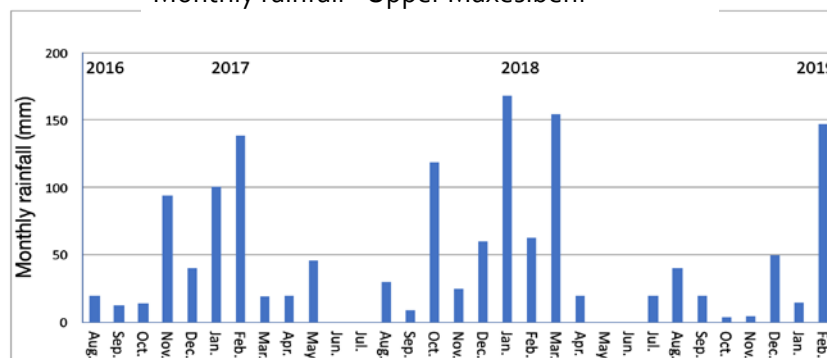
Two more gauges had been brought to the workshop. One was for Mr Zilwa. The second was taken to Upper Sinxaku. Data from a third gauge in Lower Sinxaku had been collected by the Maxesibeni vetiver monitor who had left the area and would become the responsibility of the new vetiver monitor when appointed. This will give four daily gauges in the two Sinxaku areas which should give a good indication of spatial and temporal variability and allow cross-checks between gauges to avoid arguments about accuracy. Given that temperature is almost certain to increase in the future it is

recommended that at least one monitor or CLO is equipped also with a maximum-minimum thermometer.

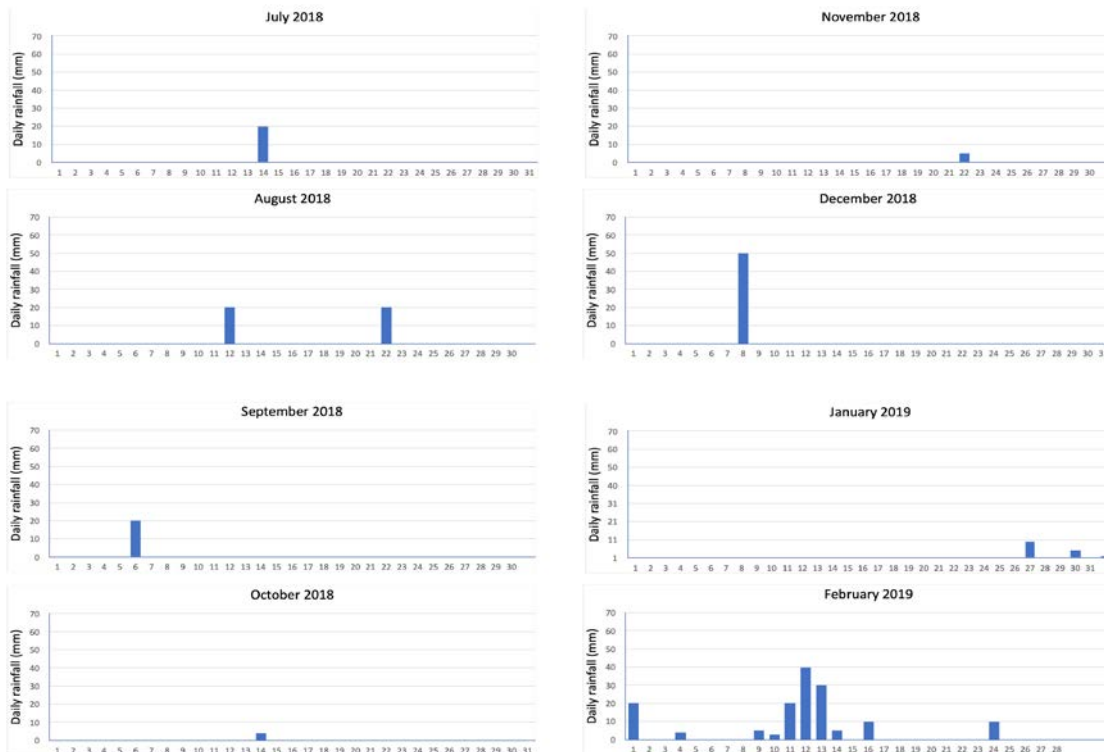
Box 2. Discussion about rainfall data accuracy

Where does Mr Zilwa get all this rain? Maybe he’s getting it from the stream next to him, since in Qulungahse there was no rain. Are we really sure of Mr Zilwa’s data? No one is agreeing with his reading since they never planted so it can’t be true. It’s impossible for him to collect data. He works according to his dam and spring, he can’t see whether it rains or not. Till in the end one participant said there was a bit of drizzle that must be what Zilwa is capturing. Everyone reckons he gets his own rain.

Monthly rainfall - Upper Maxesibeni



Daily rainfall - Upper Maxesibeni



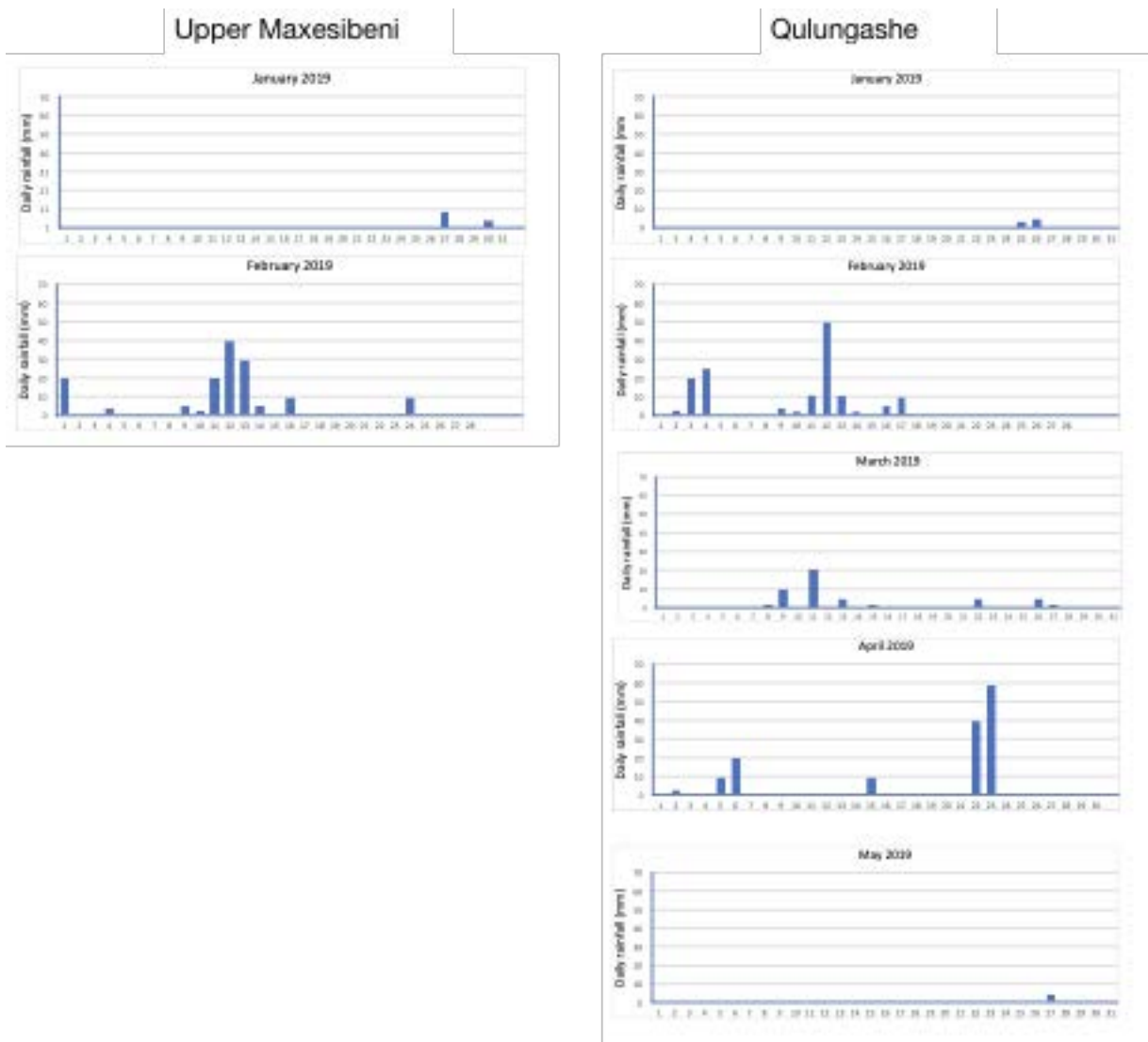


Figure 8. Rainfall records from upper Maxesibeni recorded by Mr Zilwa
Figure 9. Rainfall records from upper Maxesibeni and Qulungashe for January to May 2019

Having seen how the seasonality of observed rainfall had changed, the participants were asked to construct a new timeline of crop activities to show how they would adapt to the new conditions. Under the revised rainfall all activities were delayed in the first two groups but the third group was able to continue growing vegetables early in the season due to water brought into the garden from springs. This points to the importance of springs for future climate change adaptation.

Box 3. Weather forecasting

Are there any signs that there might be any rain soon? There are no signs to show what might happen; it is dry, there is no dew, clouds or anything, it's just dry. The weather forecast on TV is not matching what is happening in our village, all the rain percentages are not happening. The weather forecast is usually three days focus and is never accurate.

Session 3: Weather forecasting

The last session dealt with weather forecasting. We started by asking how people predicted what the weather was going to be, were there any signs that might help to predict the weather such as clouds or animal activity or whether the South African Broadcasting Service (SABC) weather forecasts were useful? The response was that there were no useful signs, nor was the SABC weather forecast helpful. They just wait to see what will happen. The weather forecast from the television does not match what happens in the area. The radio is the same. Their responses are captured in Box 3.

We then introduced the South African Weather Service's (SAWS) seasonal forecasts that give a prediction over the next four months (August to January), stressing that the prediction is uncertain. For the rest of 2019 the forecast says it will be warmer than usual, and drier, but there may be more rain than normal by December. If there is rain before that it will be heavier than normal.

Given this forecast the groups were asked to discuss how they would prepare for the expected weather pattern (Box 4). Many of the responses, such as manuring the land, adding lime and planning to buy seeds and seedlings would be normal responses not necessarily related to climate change but water harvesting is a climate change adaptation that the people are familiar with from previous Green Village workshops and land preparation for vetiver growing.

Box 4. Planning for changing rainfall patterns

We can plan but what if it changes? But we are controlled by rain, if it rains we plant if it doesn't we don't. Rain is forecasted for the end of 2019 till January next year so let's plan our ploughing, planting and harvesting according to the forecast. Why is the other group planting throughout the year on their blocks? They are bringing in water to use in the garden.

We must start fencing our gardens, put kraal manure on the fields and move our cattle to the mountain away from the fields, fix our swales and clean our vegetable patches. Get our tools ready and maintained. Keep money aside for vegetable seeds and seedlings. Add lime into the soils. Look at our village and start looking at runoff water and collect the water into ponds and gardens (swales) so that we can use this water for the dry periods.

Session 4: Reflection and Evaluation of Workshop

The objective of the last session was to reflect and evaluate the workshop. A short questionnaire that could be answered by individuals had been prepared but it was decided to run this session as a group for two practical reasons. The first was that we had not brought pens or pencils for everyone and the second was that people were getting tired and the workshop had begun late. We still had to talk about planning for the micro-catchment rehabilitation.

The questions asked were:

1. What did you enjoyed the most? Yintoni oyonwabeleyo kakhulu?
2. What was difficult? Yintoni ebinzima?
3. What do you know now that you did not know before? Yintoni oyaziyo ngoku obungayazi ekuqaleni?
4. What did you share with the group? Oluphi ulwazi oludlulisele kwigroup yakho?
5. What can we do next time to make the workshop better? Intoni esingayenza ngokuzayo, okwenza iworkshop ibencono?

The answers did not always relate directly to these questions but the general feedback was that they had shared information, they had learnt a lot and now had some idea of what the weather would be

Box 5. Group reflection and evaluation

What did you enjoy?

Although the rain is coming late we can make ways of changing the way we do things to accommodate the changing patterns.

I did not know about the new weather forecast so now at least I can be prepared.

I'm happy to learn new things and it was an eye opener for me.

To work together in a group was also very nice.

What would you like to improve/ do better on next workshop?

Attendance - how can we motivate people to be interested to coming to the workshop?

Would you like to come back and learn more and how often?

Yes, once a month if possible.

like over the next few months. Box 5 captures their responses.

Summary and reflection

The climate change workshop was attended by 23 people who represented the two villages of Qulungashi and Maxesibeni with an almost equal gender breakdown. Many of the women and two of the men worked for the Community Works Programme (CWP) and had previously learnt about water harvesting in the CWP community garden, through the Water Research Commission's (WRC) Green Village project. There were a number of people present who had established home vetiver nurseries. This group were also familiar with water harvesting as a means to augment water in the nurseries. Many of the group had therefore worked together and had attended previous workshops so were familiar with the format. This helped with group cohesion and for participants to respond positively to the different activities. It would be more challenging to work with a group with whom we were less familiar and there had not been an extended period of mutual trust building.

The learning was carried out through three main sessions. The objective of the first was to draw out prior learning about climate change. It was clear that participants were very aware of recent changes to weather patterns but had less knowledge of the predicted long term change. The objective of the second session was to explore how weather patterns affected livelihood activities, specifically gardening or farming, and how these could be adapted to changes in weather. Photographs of weather phenomena were used to encourage group interaction and wooden blocks were used to construct timelines of seasonal rainfall and cropping activities. Blocks arranged along a plank emulated a graph so that it became easier for people to understand the printed graphs of observed rainfall data. The exercises and 'real' graphs brought home the recent shift in rainfall and led on to an activity in which a second cropping time line was constructed that was adapted to the new conditions. The third session introduced the seasonal forecasts given by the South African Weather Service (SAWS). From the final responses (Box 5) these forecasts were of general interest - an important point is to stress the uncertainty of these forecasts so that people do not lose faith if they are wrong.

We worked in two group formats - a large group of all participants together and three small groups of seven to eight people. Working in small groups encouraged everyone to contribute to the activity and was appreciated by participants (Box 5) whereas the large group encouraged sharing of

information to all present. Listening to the recording of the workshop there was clearly a lot of energy (noise) in the room during the small group activities and laughter during the large group sessions.

This workshop was designed as the first workshop in a series of several. This is the format used with wild rooibos tea harvesters in the Suid Bokkeveld (Western Cape) (Oettle 2012). Follow-up workshops would also look at recent weather patterns as recorded by 'citizen' gauges and the SAWS seasonal forecast but would have a stronger focus on adaptation, incorporating field visits to demonstration sites in the village. In the longer term, once concepts of short term weather variability and adaptation have been embraced, the workshops could start to look in more depth at the local implications of future climate change.

Collection of local weather data by village residents is an important part of climate change adaptation. We should now have four rain gauges in the area and it is recommended that there should be at least one maximum minimum thermometer to record daily temperature. Local variation in temperature is likely to be less variable than rainfall.

As noted above, extending this process of climate change workshops to other areas where we have not worked intensively will bring its own challenges. The general format can probably be retained but it is likely to take longer to work through activities and achieve good group cohesion.

Embedding climate change into the Tsitsa Project is seen as a cross Community of Practice (CoP) activity. Village scale adaptation, however, first and foremost embraces a change in livelihood strategies. It is therefore important that climate change is strongly embedded in the livelihood CoP and that the climate change 'facilitator' works closely with the coordinator of this CoP. Given concerns over fire and grazing as mentioned in Box 1, it will make sense to work also with the grassland and fire CoP at the village level.

Reference list

Oettle (2012). Adaptation with a human face: lessons learnt from an ongoing adaptation and learning process. EMG, Suid Bokkeveld, South Africa. Summary Available: http://www.emg.org.za/images/downloads/rural_dev/Rural-Adaptation_with_a_Human_face_small.pdf accessed Jun 05 2019

Appendix A Attendance



Tsitsa Project Climate Change & Mini-catchment Planning Workshop (Village-based) Lower Sinxaku

Date: 21st August 2019

Name and Surname	Organisation	Area/ District/ Province	Contact Number	E-mail	Signature
GIRAGE SANDERS		Lower Sinxaku QULUNYASHE	0737882705		
MZODANA					
Notwatho Mcheto		Rulungashe	0836941166		
ELSIE SANDERS		QULUNYASHE	0632327289		
N. MATEJI		Qulungashe	0737933780		
N. Vmasq		Qulungashe	0736828977		
Anthony fry Siphakemise Mgobhana	Ru LINA RDF		0818715487 0733882117	Siphakemise@ lime.org.za	



Tsitsa Project Climate Change & Mini-catchment Planning Workshop (Village-based) Lower Sinxaku

Date: 21st August 2019

Name and Surname	Organisation	Area/ District/ Province	Contact Number	E-mail	Signature
GIRAGE SANDERS		Lower Sinxaku QULUNYASHE	0737882705		
MZODANA					
Notwatho Mcheto		Rulungashe	0836941166		
ELSIE SANDERS		QULUNYASHE	0632327289		
N. MATEJI		Qulungashe	0737933780		
N. Vmasq		Qulungashe	0736828977		
Anthony fry Siphakemise Mgobhana	Ru LINA RDF		0818715487 0733882117	Siphakemise@ lime.org.za	

Name and Surname	Organisation	Area/ District/ Province	Contact Number	E-mail	Signature
Joy GRAND	CWP	LOWER Sinxeko	064 0448360	-	JGrand
Nedobu Thembani	NO	LOWER Sinxeko	0833564894	-	NT
Tulani Kekele	NO	LOWER Sinxeko	0810490657	-	TKekele
Ayabonga Saunders	NO	lower sinxeko	0638726514	Aya98@gmail.com	A. Saunders
Wnatu Sodina	NO	lower sinxeko	-	-	WS
Zakhele mklengwana	C.W.P	lower sinxeko	-	-	ZM
NISSANA ^{SA} ndey	NO	lower sinxeko	0798735063	-	NS
SIWIVESOMBA	ENV	lower sinxeko	-	-	SS
Wavetkaho hinda	CWP	lower sinxeko	073734045	-	WH
S. Yalo	Rhodes	-	0767880920	-	SY
h. Conde	KU	-	0824151152	-	HC

