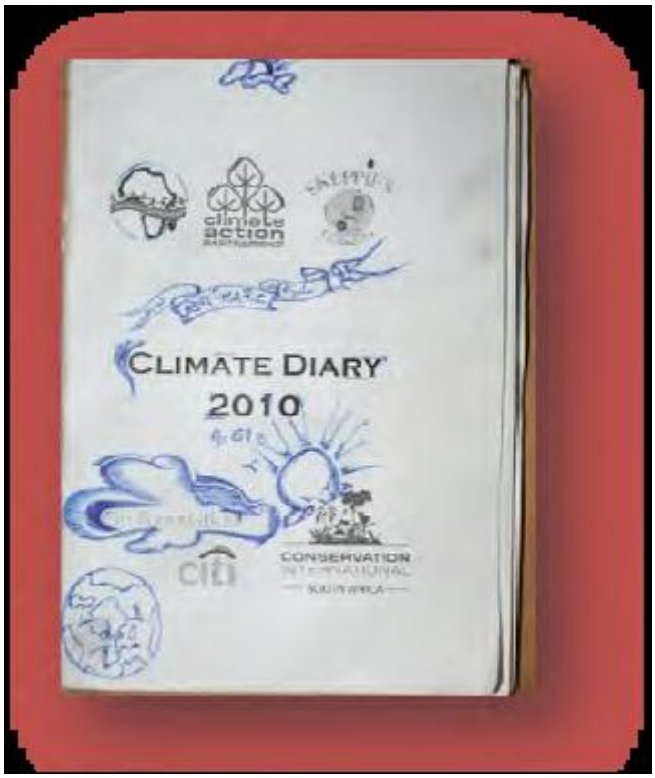
Skeppies: Building Resilience to Climate Change



Skeppies Climate Monitoring through the Climate Diary Process: Method and lessons learned

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Summary

In May 2010, CAP and CSA started monitoring local weather patterns with 11 Skeppies projects across the Succulent Karoo Biodiversity Hotspot. Monitoring involved recording minimum and maximum temperatures, rainfall, and weather observations on a daily basis, comparing these to a TV or radio weather forecast, and applying this information to climate resilient planning in each of the projects. For some projects, the process was so useful for planning that they were able to show a direct impact on profitability and other operational considerations. Without exception, the process was very highly valued by participants.

Regularly engaging with the projects around the climate diary process assisted with our planning when it came to designing climate change workshops that were relevant and appropriate, using participatory methods to identify climate adaptation technologies, and identifying priority needs and areas for action. In addition, the diaries represent the beginnings of a slowly growing database on weather patterns in the Succulent Karoo, collected by its residents, and the impact that these are having on livelihoods at the local level.

This report provides an overview of the climate diary process to date and demonstrates where climate monitoring fits into and supports the broader aims of the Skeppies-CitiGroup Building Resilience to Climate Change Programme. The lessons learned by both the Skeppies project implementers and the CAP and CSA programme implementation team are summarised here and a couple of case studies on the impact of climate monitoring on business planning are included.

Climate monitoring has been a useful tool, both for providing invaluable information for planning and implementation in the Building Resilience programme and for facilitating growing awareness around the impacts of climate change and the opportunities for climate resilient planning in the projects. Since the inception workshop in May 2010, 4 new projects have been introduced to the process and equipped with monitoring instruments. While a selection of the original projects continue monitoring uninterrupted, the new projects will begin monitoring in April 2011.

Introduction

The Climate Action Partnership (CAP) and Conservation South Africa (CSA) started monitoring local weather patterns with 11 selected Skeppies 'Building Resilience to Climate Change' projects in May 2010. CAP, CSA, the Green Connection (GC), and Nurture, Restore, Innovate (NRI) held an initiation workshop in Kamieskroon on 3 and 4 May 2010 aimed at working with the participating projects to develop plans for building climate resilience into their projects. Daily climate diaries, developed by Indigo Development and Change and designed to facilitate climate monitoring by the project members themselves, were distributed at the workshop. Completing the diaries is intended to raise awareness amongst project members about climate variability and change and how these impact on their conservation and business endeavours. Participating projects were also given monitoring instruments – rain gauges and digital thermometers – and trained in the use of these and the completion of the diaries.

Climate monitoring forms part of the broader 'Building Resilience to Climate Change' programme goals:

1. Raising awareness about climate change and providing input on climate change impacts
2. Informing the projects about the available climate adaptation tools, technologies, and techniques
3. Building ecological knowledge and understanding in the projects
4. Using participatory processes to develop climate change resilience plans for the projects
5. Mentoring the implementation of these plans
6. Assessing progress made

Initially, project members were asked to carry out 6 weeks of monitoring in order to explore the benefits of being prepared for climate variability. Due to the success of the climate monitoring process, this was extended and the projects have now been monitoring weather patterns for a year.

GC and NRI conducted a follow-up 'road show' with the projects after one month, with an overwhelmingly positive response. Since then, CAP and CSA have been providing new diaries every 3 to 6 months and monitoring their use. CAP's project officer conducted telephone interviews with 8 of the participating projects in September 2010 and then distributed diaries for the period October 2010 to March 2011. She conducted a field trip in November 2010, with CSA's project developer, visiting the participating projects, learning about their experiences with the diaries, and answering any questions that arose. CAP and CSA's intern visited some of the projects again in February 2011, interviewing them about their climate diaries, and CAP and CSA hosted a session dedicated to reviewing the climate diary process after almost a year at the 11-12 March 2011 'CitiGroup: Building Resilience to Climate Change' workshop in Port Nolloth.

At the workshop, the team introduced 4 new projects to the climate diary process, returned a

mended thermometer to one of the original projects, and supplied a second with an additional set of monitoring instruments for use at their business site. All the projects which have participated in the climate monitoring process to date gained much greater awareness of weather patterns and how much the climate actually did influence their businesses as well as their daily lives. The March workshop introduced the long-term weather forecast as a planning tool, working through the possible implications of this with participants. Regular opportunities to obtain feedback on their experiences with climate monitoring and to share lessons around their adaptation progress have been invaluable, leading directly to the identification of water as a key concern for most if not all of the project implementers and, therefore, the development of the workshop focused on climate change and water. All the above interactions with the projects also highlighted that projects would benefit from business management support and a part of the workshop therefore focused on each project's business management planning and donor reporting processes.

This report reviews the climate diary monitoring process since March 2010. Initially 11 projects participated and this report reviews the experiences of all of these pioneer projects. March 2011 sees the monitoring process continue with 5 of the original projects, for whom the process has been most relevant, and begin with an additional 4 new projects. The report looks at the methodology behind the climate diary process – why we used it and how we applied it – and then goes on to explore the lessons learned by CAP, CSA, and the participating project members. The report contains summaries of the data collected in the diaries themselves, during telephone interviews, and on field trips, using case studies to demonstrate lessons learned and the contribution made by the climate monitoring exercise towards building resilience and reducing vulnerability in the environmental enterprises that participated. The concluding section provides a brief overview of the plans going forward for Skeppies climate monitoring in 2011.

Preface

The SKEPPIES small environmental enterprises and projects generally have a minimal impact on the environment in terms of their carbon footprint and GHG emissions. They are all small-scale projects, with low water and low electricity demands. Some use donkey carts for transport while others rely on wild-collected fuel wood rather than electricity for cooking. Many of these projects will, however, feel disproportionately great impacts of climate change. Africa is set to be hardest hit by the negative impacts of climate change and the already water-stressed and marginal Northern Cape is particularly vulnerable.

Climate scientists predict that Namaqualand will be one of the areas in South Africa hardest hit by climate change. The semi-desert region is expected to experience higher coastal and inland temperatures, resulting in undesirably higher levels of evaporation, and changes in the frequency and severity of extreme weather events, such as droughts, flooding and storm surges. The Succulent Karoo veld is already resource scarce in terms of water availability, soil fertility, and agricultural productivity and under immense pressure from human activities. Should the expected climate change impacts occur, the region is likely to become increasingly stressed, with consequences for the people whose lives depend on these natural resources.

The small projects supported by the Skeppies programme are likely to suffer climate change related impacts through inevitable increases in the costs of fossil fuel reliant electricity, inflated transport costs, higher temperatures, lower or less frequent rainfall, more unpredictable and extreme climatic events, and changes in world markets. The goal of the Skeppies-CitiGroup Building Resilience to Climate Change Programme is, therefore, to identify and implement adaptations that will assist these projects with becoming more economically and ecologically sustainable, so that they can be more resilient to the impacts of climate change on their welfare.

Amongst the tools employed to achieve these goals are:

- Regular workshops with project implementers to raise awareness around climate change and its impacts, the value of ecosystem services, business management processes, and access to grant funding and other support. Workshops explore climate change adaptation tools and technologies that projects can implement to enhance their climate resilience.
- Regular site visits to the projects to monitor progress and assist with questions and concerns as they arise on site.
- The transfer of climate change adaptation technologies that assist with physically building resilience to climate change in the projects.
- Climate monitoring through the climate diary process.

The focus of this report is the final tool – encouraging participating projects to monitor the weather at their projects sites and analyse its impact on their activities using the climate diary data collection instruments and log book provided.

The Climate Diary Process

From March 2010 – March 2011, 11 Skeppies projects participated in a climate monitoring exercise as part of the Building Resilience to Climate Change Programme. They used rain gauges and digital thermometers purchased with CitiGroup funds to monitor the weather at their project sites. They were also supplied with climate diaries to assist them with recording and analysing this data and assessing the impact of the weather patterns they recorded on their projects over time. Please see a page from one of the diaries below, as an example of the kind of information they were asked to collect.

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1 March 2011

Plan vir die dag/ *Plan for the day*

Wat het die weervoorspelling voorspel (temperatuur, reenval en wind)? *What did the weather forecast say about the weather today (temperature, chance of rainfall and wind)?*
Watter voorbereidings gaan u vir more en die komende week tref na aanleiding van vandag se weervoorspelling? *What are the preparations you are going to make and your plan for tomorrow and for next week according to the weather forecast?*

Wat het u gemeet? *What did you record?*

Tyd wanneer u die waarnemings gedoen het/ *Time when the data was recorded:*
Temperatuur / *Temperature* (^{o}C): Min Max
Reenval in die laste 24 uur / *Rainfall in the last 24 hours* (mm):
Watter veranderinge het u in die weer waargeneem/ *Other weather patterns you observed (e.g., clouds, wind, frost, etc):*

Wat het gebeur? *What happened*?

Hoe het die weer die projek beinvloed? Wat het u gedoen? *How did the weather affect your work? What did you do?*
Het die voorbereidings gehelp en indien wel, hoe? Wat het u geleer? *Did your preparations help and if so, how? What did you learn?*

Indigo Development and Change (Indigo D-C) developed the climate diary concept as a tool in 2009, working closely with small-scale Rooibos tea farmers in the Northern Cape. These farmers took part in gathering and analysing local weather data and were given access to scientific information on climate and climate change predictions in order to build their capacity to create appropriate local solutions. Indigo D-C developed a daily climate monitoring diary for participating farmers to complete as part of this process. The Skeppies projects have utilised an adapted version of Indigo D-C's climate monitoring exercise in order to raise awareness around climate variability and change for the project implementers and help them to prepare for or respond to changes in the weather.

At an inception workshop in March 2011, 11 Skeppies-CitiGroup building resilience to climate change projects were given climate monitoring starter packs, each containing a rain gauge, digital thermometer, and climate diary and shown how to use the instruments to record local temperatures and rainfall. Project implementers were encouraged to complete the diaries daily, evaluating what, if any, impact the weather had had on their projects and how they could use this information for planning.

A month later, GC, CSA, and NRI staff visited the projects to follow up and film interviews about their experiences with the diaries. GC produced a DVD titled 'Namaqualand Climate Change Interviews', a compilation of the responses from the participating projects. Responses from the participants were overwhelmingly positive, with all projects highlighting how regularly monitoring the weather at their project sites had made them more aware of the impact of climate conditions on their activities. For some, monitoring had had a direct and immediate impact on their profitability and/or ability to plan. For example, keeping an eye on prevailing climatic conditions enabled KelpCor to save money on salaries and to adjust production activities to suit the weather. Eco-tourism initiatives such as the

Kookskerms and Hiking Trails found having a record of rainfall and temperature extremely useful for being able to report to tourists on current conditions when they called to book.

New climate monitoring diaries were distributed after this 'Roadshow' and the CAP project officer monitored data collection by telephone interviews with 8 of the 11 projects from 20-23 September 2010. Also in September 2010, new climate diaries for the period October 2010 to March 2011 were printed and distributed. This set of climate diaries still required projects to enter climate monitoring data on a daily basis.

Each project implementer was asked the following questions:

1. Do you still have your climate diary?

2. Are you still monitoring?

3. Do you record the temperature every day?

4. Do you record the rainfall every day?

5. Is the equipment still working?

6. Do you compare with the weather forecast every day?

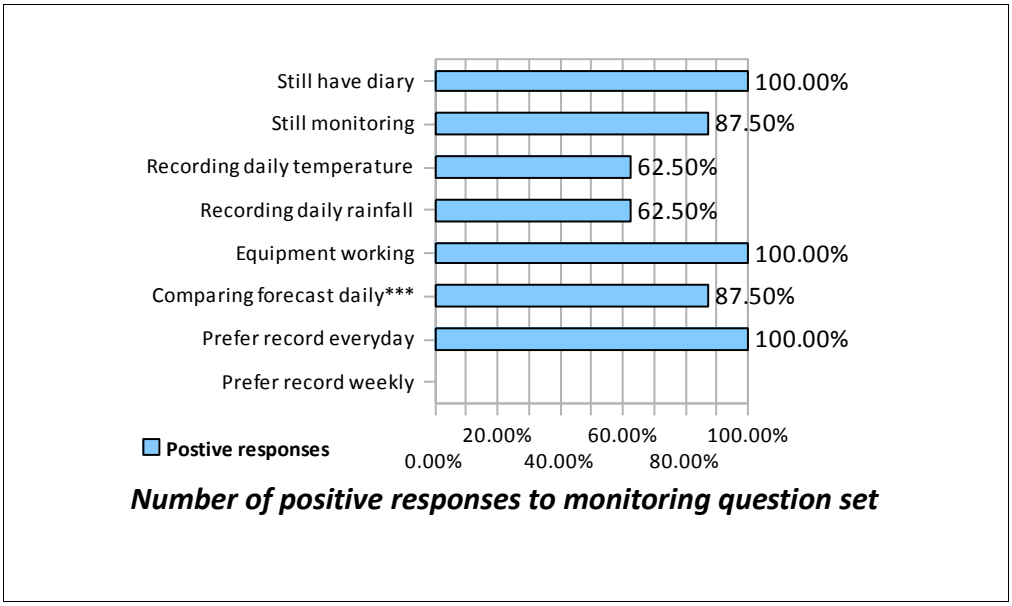
7. Are you happy with recording the information every day? Or prefer weekly for future?

All projects confirmed that they still had their climate diaries and were still using them to record temperature and rainfall readings. At the time, all of their monitoring equipment was still in good working order. We have since repaired one thermometer, for the Leliefontein Kookskerm. All but the Roodebergskloof Kookskerm and Port Nolloth Bird Park were still monitoring daily or near daily. Roodebergskloof Kookskerm explained that they found it difficult to keep up with the climate diary process and other project activities because the project implementer had broken her leg, while the project implementer at Port Nolloth Bird Park was heavily pregnant at the time.

7 of the 8 projects surveyed regularly compared the data they collected with the daily radio or television weather forecast. For many, it was interesting to note the variation between actual local conditions and general forecasts for the region and this comparison added value to the data collection and monitoring process.

All projects demonstrated an awareness of the basic principles behind the monitoring exercise and responded that they wanted to continue monitoring on a daily basis. This includes Roodebergskloof Kookskerm and Port Nolloth Bird Park, indicating that even though they found it difficult to keep up with the monitoring at times, they valued the climate diary process and found the results of interest.

The table below summarises the responses to the monitoring by telephone interview:



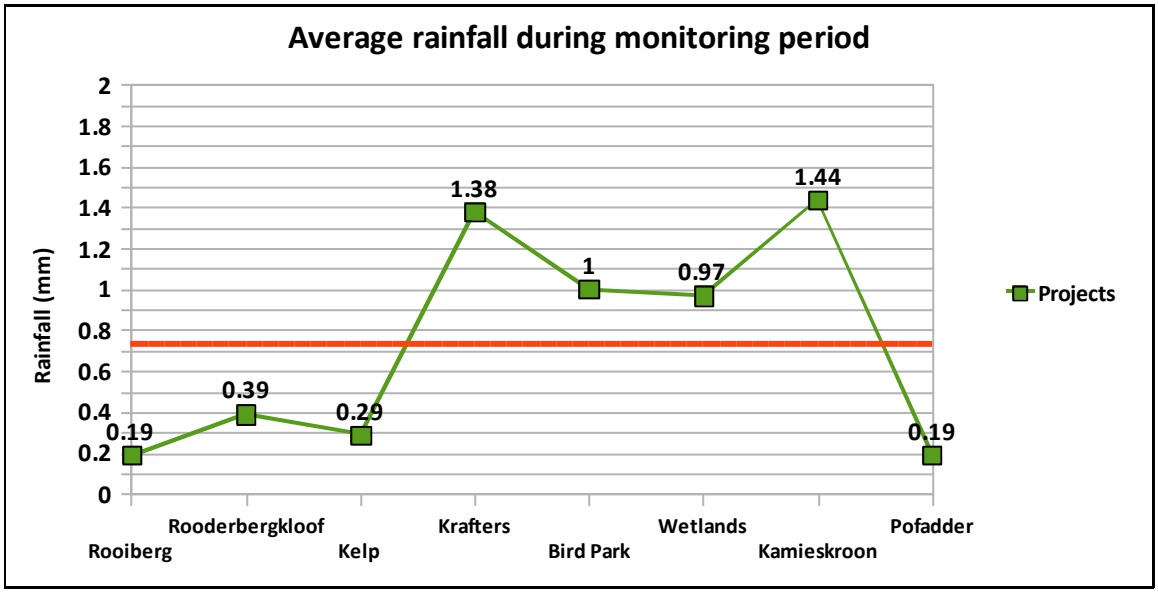
Another outcome of the telephone interviews was that projects indicated a desire to have more frequent visits from the CSA, CAP, and Skeppies teams and to have regular reviews of the climate diary monitoring process to re-energise and motivate the implementers around the process and remind them of the value of local climate data collection. To this end, the team organised a field trip to visit the projects in November 2010 and began planning for a climate change and water workshop in March 2011 where the diary process could be reviewed after close to one year of monitoring.

On 2 November and from 21-26 November 2010, the CAP project officer and CSA Namaqualand project developer visited 7 of the projects, following up with them on the use of the climate diaries and beginning to identify the specific climate adaptation needs of the projects. This trip confirmed that projects still had all the necessary monitoring equipment in good working order, had received their new climate diaries, and were completing them accurately. The CSA project developer has visited many of the projects at least once since, to work on their adaptation and sustainable business development plans.

In February 2011, the CAP/CSA intern and CSA Ecotourism Coordinator visited a further 2 projects and arranged for a damaged thermometer at one site to be repaired. February also saw the collation of the data collected from the first set of diaries into a spreadsheet for review in this report.

A digital thermometer was used to take temperature readings twice a day, once first thing in the morning and once around 4pm in the afternoon. Rainfall was measured in plastic rain gauges attached to poles on site. Rain gauge measurements were taken after rainfall events. While the objective of monitoring was not to collect strictly scientific data on local weather and indeed this was not possible due to days missed or different recording routines at the different projects, we were able to collect some average temperature and rainfall information. The tables below show that rainfall across the participating region was low for the recording period and temperatures were quite consistent. Even in the winter months of May and June, Namaqualand is warm and

dry.



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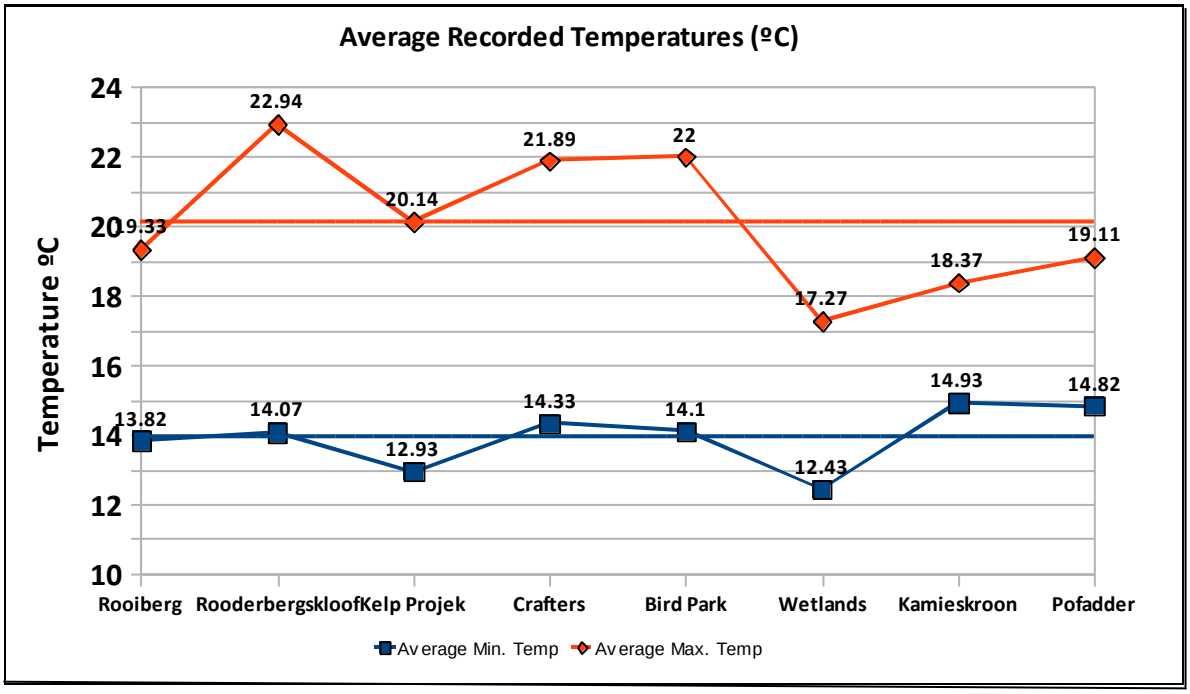

Shown with 'Average Value Lines' for comparison

The 11-12 March 2011 Water and Climate Change workshop dedicated a morning on the 11th to reviewing the climate diary process with the original projects and introducing it to the others. 4 new projects were welcomed to the climate monitoring programme and supplied with a climate monitoring starter pack (diary, thermometer, and rain gauge). The CAP project officer presented to the project implementers on the climate monitoring process and where it fits in to the aims of Building Resilience to Climate Change. She also presented some of the feedback collected from

participating projects and let everyone know how valuable the information collected in the diaries is for the Skeppies planning and project development team.

The CAP project officer trained the new project implementers on recording the information from the instruments, weather reports, and observations in an interactive session. Each implementer filled in a mock diary page, entering the temperature that morning by reading their thermometers, taking a hypothetical rain gauge reading, and noting the weather conditions outside. In a group discussion afterwards, the projects started to think about the use this process could have for planning in their projects.

Meanwhile, the Skeppies project developer facilitated a group discussion with the original project implementers on their climate monitoring experiences since March 2010. In a feedback session with the whole group, the original project implementers advised the new to complete the diaries regularly, daily if possible, to see the most benefits; to set up the rain gauge in a permanent spot outside so as not to miss any unexpected rain events; and to make completing the diary a part of the daily work routine, a part of the project. The original projects implementers argued that the recording process helps with planning and, in some projects, contributed significantly to profitability. They recommended to the Skeppies project development team that exchange visits between the projects and site visits by CAP and Skeppies should be conducted more regularly as these are very motivating and exciting. They also asked for a summary report of the data they had collected so that they could see patterns over time. The collation of the first set of data into a spreadsheet is the first step towards us being able to provide this service.

The project implementers with their new climate diary starter packs at the climate change and water workshop in Port Nolloth, March 2011

Lessons learned from the projects

The climate diary process has been invaluable from a lessons learned perspective. For the Skeppies projects, the process has provided useful opportunities for facilitating learning amongst project implementers about climate variability and change and the impacts of these on their respective project activities. For the Building Resilience to Climate Change programme implementers, the information collected from interactions around the climate diaries has informed the direction the programme has taken in workshops and technology transfers over the course of the last ten months. This section examines the value of the climate diary process for the project implementers, using feedback from site visits and workshops and including a couple of case studies, and the programme implementers from CAP, Skeppies, and CSA.

Lessons Learned: Project Implementers

In the case of the project implementers, the diary process provided the following lessons learned:

- Raised climate awareness in all projects
- Direct impact on profitability (see the Bravo Pro Kelp Project case study below)
- Direct impact on planning (see the Kookskerms Project case study below)
- Sparked an interest in climate monitoring amongst groups and individuals outside the projects
- Resulted in knowledge sharing in the local communities in which projects are based
- Was a valued process for all participants

By the time of the March workshop in Port Nolloth, the projects that had been monitoring weather using the climate diaries had all greatly enhanced their knowledge of climate variability and local weather patterns and had applied a lot of thought to the ways in which these patterns affect their small environmental enterprises. Monitoring the rainfall showed the project how little water actually falls when it only drizzles and raised greater awareness generally of the impact of the weather. Many added that the knowledge they had gained enhanced their ability to prepare for climate change. More financially sustainable and environmentally sound projects are more resilient to climate change. The two case studies below demonstrate the impact that climate monitoring had on the profitability and planning capability of two projects, the Bravo Pro Kelp Drying Project and the Roodebergskloof Kookskerm.

Bravo Pro Kelp Drying Project

The Bravo Pro Kelp Drying Project in Port Nolloth is able to produce 15-20 tonnes of dried and milled kelp in a month, weather permitting. The project is likely to be impacted by climate change because of changes in the sea temperature and currents, which could change the distribution and growth patterns of the kelp itself. The project is also very weather dependent, relying on the sun and wind to dehydrate the kelp quickly for milling. Climate variability in terms of wind direction, mist, and average temperature has the capacity to impact negatively or positively on the business.

Successful planning for the weather has the potential to have a great impact on the sustainability of the project. Bravo Pro has been using the diaries and monitoring equipment regularly, correlating their observations about the weather and the forecasts they received on

the radio with their daily planning for their business activities. The forecasts and observations were used to plan, for example, for covering the kelp to protect it from the elements, holding off from collecting kelp, and catching up on milling instead. The quotes shown below are taken directly from the diaries and demonstrate this relationship quite clearly:

"cover kelp, because of possible rain. Work indoors". (Bravo Pro climate diary)

"*strong winds favour drying of kelp, collect only before noon"* (Bravo Pro climate diary)

Bravo Pro has also been using the forecasts and their observations to manage staff time effectively by letting the staff know in advance to stay at home on days where rain or heavy mist is expected.

What did the weather forecast say about the weather today? *"35 wind South; 9 min, 17 max"*
What are the preparations you are going to make and your plan for the next week according to the weather forecast? *"continue with milling, no collecting."*
How did the weather effect your work? What did you do? *"able to mill kelp, unable to collect due to wind*"
Did your preparations help and if so, how? What did you learn? *"plan work hours & total workers needed accurately"*

The fact that the project was able to plan the day accordingly had a direct impact on the operating costs for that day. Bravo Pro has used the climate monitoring process to very effectively reduce their overhead business costs through effective planning. According to Bravo Pro project implementer, John Basson,

'it has been very useful to monitor the weather using the thermometer and rain gauge and diary, as we have been able to plan the day ahead more effectively. For example, we can only mill the kelp once it is dry and we need hot weather in order for it to dry; however if the day is too cold and wet, we cannot employ people that day (we employ people only on an casual basis). Thus we were able to plan the work schedule more effectively with the weather'

Roodebergskloof Kookskerm

One of four regional Kookskerms in the Kamiesberg area, the Roodebergskloof Kookskerm operates on the grounds of the Roodebergskloof municipal farm, also the start of the Rooiberg hiking trail. Guests can hike the trail and then camp on the farm grounds in fixed A-Frame tents. The Kookskerm provides traditional Namaqualand food cooked on open fires in traditional Nama huts for the guests in the evenings. The site is managed by the Kamiesberg Municipality and permits must be purchased from the municipality in advance for the access to the trail as the road takes you through private farm land. In favourable conditions for walking, there is still the possibility of receiving guests at the Kookskerm, even on evening where there has been no reservation.

The Roodebergskloof Kookskerm operates during the flower season to take advantage of the large numbers of tourists in the area at that time. During this period, they monitored the weather regularly and found the monitoring equipment and diary process very useful for planning purposes. The quotes extracted from their climate diaries clearly demonstrate this:

What did the weather forecast say about the weather today? *"Very cloudy, 100% rain, cold, min 5,max 10"*
What are the preparations you are going to make and your plan for the next week according to the weather forecast? *"We are going to move the kookskerm to a dry place"*
How did the weather effect your work? What did you do? *"We are going to tell stories and do rieldans"* (traditional dance)
Did your preparations help and if so, how? What did you learn? *"The guests enjoyed it"*

Other weather patterns you observed? *"no rain, no clouds, just cold"*
What are the preparations you are going to make and your plan for the next week according to the weather forecast? *"pay attention to the weather and act accordingly. The stock is enjoying the weather because they've been waiting a long time"*
How did the weather effect your work? What did you do? "*we let the guests know that they can come. They came and walked and we gave them food"*
Did your preparations help and if so, how? What did you learn? *"we learned that every day climate changes and this plays a big role"*

These comments highlight an economic benefit from employing weather forecasts and observations for appropriate planning. The Kookskerm implementers were able to plan stories and traditional dances to entertain the guests indoors during bad weather, ensuring that guests had a positive experience despite the rain. As the diary extract below demonstrates, the project was also able to save money by not preparing food on days when the weather forecast and their observations indicated that there would not be many guests.

What did the weather forecast say about the weather today? *"rain, strong northwest wind, min 10, max 20"*
What are the preparations you are going to make and your plan for the next week according to the weather forecast? *"tomorrow it will rain so we won't prepare anything. Goats go to the field but we do not pen."*
How did the weather effect your work? What did you do? *"it was very wet and cold - we couldn't do anything*"

Did your preparations help and if so, how? What did you learn?
"the tourists did not go walking"

The case studies above clearly show the significant impact that climate monitoring had on the ability of project implementers to plan for project activities in the short term and to make operations decisions that saved them money. Vera Engelbrecht, project implementer of the Leliefontein Kookskerm and regional coordinator of the Kookskerms as a group, also found the diaries helpful for planning. The monitoring made her more aware of the weather forecasts and her own observations and she indicated that she would not have thought to check these prior to participating in the climate diary exercise. In addition, she found the diaries provided a useful record, stating that '*the diary was very useful to the project as many tourists asked what the weather had been like the week before and I could just look through the diary and give them the information*'

The climate monitoring carried out by the project implementers sparked an interest in climate monitoring amongst groups and individuals outside the projects and resulted in significant knowledge sharing in the communities in which the projects are based. The Pofadder Extreme Adventures Hiking Trail found the diary useful and even showed it to the local weather station. There was much information sharing and interest expressed over the usefulness of the climate diary at this meeting. She also showed it to the municipality and took it to a local school 'to the school to teach them the importance of monitoring the weather'. For Hanna Claasen from the Kamieskroon Kookskerm, 'the diary was useful and the rest of the community thought it was interesting too.' The projects have been sharing what they have learned with other people in their communities, and the use of the thermometer and rain gauge has piqued the interest of their neighbours and other members of the community. These driven and passionate individuals have enabled the rapid spread of information to non-targeted people.

Overall, participation in the diary process has been highly valued. In the previous section of this report we demonstrated that projects unanimously agreed that they would like to continue daily monitoring. Many valued the information they now had access to and the contribution this makes to their planning, looking forward to learning more. Others took this even further. The very dynamic project implementer from the Pofadder Extreme Adventures Hiking Trail had her own thermometer already but found the new digital thermometer so interesting and useful that she took it to Cape Town with her to compare the weather between Pofadder and Cape Town. In the text box on this page, Bravo Pro Kelp Drying Project spoke of developing their climate monitoring even further to include the monitoring of wind speed and direction as well as ocean temperature

Bravo Pro Kelp Drying Project

'*We would like to monitor the wind as well because it has a relationship with the temperature and can also help us with planning'*

'We would also like to monitor sea temperatures'

'We want to use the diary to compare wind and weather over a few years and look for patterns'

Lessons Learned: Programme Implementers

In the case of the CAP, CSA, and Skeppies programme implementers, the diary process provided the following lessons learned:

- Regular follow-up monitoring is a very important opportunity to interact with project implementers regularly
- The records in the diary and the interactions with project implementers around the diary process has informed us of the particular needs of each of the projects
- Likewise, this process has helped us to identify priorities for planning and implementation. For example, our interactions with project implementers around the diaries identified water as a something very important in all the projects, leading to the hosting of a water focused workshop in March 2011.
- Likewise, this level of engagement helped us to identify core business and marketing training needs
- The process has directly informed the next phase of project support, the transfer of appropriate and project specific climate change adaptation tools and infrastructure
- The process has helped us with appropriate planning
- The process provides a valuable data record that continues to build over time
- We were also able to identify additional needs and adapt the diary process to suit these.

Monitoring of the climate diary process formed the basis of several site visits to projects, follow-up phone calls, and training and knowledge exchange workshops with project implementers. Regular face-to-face meeting with the project implementers are highly valued by participants in the programme but also provide a valuable source of information and important opportunity to learn from and review the successes and challenges of the programme to date. These interactions also gave us as the programme implementers additional opportunities to learn about the particular challenges each project faces and develop our programme to address these needs.

Our early interactions with project implementers alerted us to the importance of water security in many of the projects and led us to plan the March 2011 workshop around Water and Climate Change. We also dedicated a half day to addressing concerns that the implementers had expressed regarding their financial and narrative reporting requirements. In addition, regular conversations with the project implementers directly informed the next phase of project support, the application of appropriate climate adaptation tools and technologies at the project sites. Using the awareness raised by climate monitoring to identify water as a key priority area for action has resulted in a focus on supplying water saving technologies such as rainwater collection and storage tanks for the Kookskerms and a wind break to prevent evaporation from the Port Nolloth Bird Park's indigenous garden.

We have also been able to adapt the diary process to respond to requests for more information as they have arisen during the process. Many of the project implementers asked for longer term weather forecasts to better assist with planning and to compare to their own observations. The CAP project officer presented a long term forecast for the first time at the March 2011 workshop – a three-month forecast from South Africa Weather Services – and will produce a monthly document in colour for circulation to the projects. Projects have also asked for a summary report of the data they have collected in the diaries, so that they can see on one page the weather patterns and trends they have recorded over a couple of months. It is difficult to

form an idea of these patterns when the data is all recorded in a ‘page-a-day’ format. The information collected in the first round of diaries has been recorded and sorted and will be made available to the project implementers. The programme team is keen to continue to provide this service as well.

Overall, the climate diary process has been informative for all involved and an exciting and successful initiative. Due to the positive feedback we received from the original projects, we have been able to confidently expand the process to 4 new projects.

Conclusion: Climate Diaries for 2011

The climate diary process has been very successful. Project implementers from a variety of environmental enterprises found the monitoring process, log book, and instruments very useful. Participation in the climate diary process and the climate change awareness workshops that were associated with it raised climate change and other environmental awareness in projects across the board. For some projects, the process was so useful for planning that they were able to show a direct impact on profitability and other operational considerations. Participants in the programme took their new knowledge with them to the rural communities that they live in and shared it with others. Without exception, participants valued the process highly, wanted to continue with the monitoring after the pilot phase, and even proposed ways that they could extend their monitoring where appropriate.

Regularly engaging with the projects around the climate diary process assisted with our planning when it came to designing climate change workshops that were relevant and appropriate, using participatory methods to identify climate adaptation technologies, and identifying priority needs and areas for action. The diaries represent the beginnings of a slowly growing database on weather patterns in the Succulent Karoo and the impact that these are having on livelihoods at the local level.

The climate diary process is constantly evolving in response to the requirements of participating projects and we now provide a 3-month weather forecast to further assist with planning and comparisons. At the workshop in March 2011, 4 new projects were introduced to the process and handed thermometers, rain gauges, and diaries to install and use at their project sites. Original project implementers advised the new projects on the process and the value of completing the diary every day.

In 2011, we will continue to work with these projects on their climate monitoring. The dairy format remains as a ‘page-a-day’ log competed in 3 month cycles. CAP and CSA will capture the data collected in the diaries and produce regular summary reports. CAP and CSA will continue to use the diary process as an environmental learning tool and as an opportunity to engage projects around their climate change adaptation needs and priorities.

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