CEPF SMALL GRANT FINAL PROJECT COMPLETION REPORT

I. BASIC DATA

Organization Legal Name: Western Cape Agricultural Research Trust

Project Title (as stated in the grant agreement): *Restoring the Biodiversity of the Roggeveld-Renosterveld: Evaluation, Multiplication, and Establishment of Indigenous Plant Species on Old Agricultural Fields*

Implementation Partners for This Project: Department of Agriculture: Western Cape

Project Dates (as stated in the grant agreement): July 1, 2005 - June 30, 2009

Date of Report (month/year): August 2009

II. OPENING REMARKS

Provide any opening remarks that may assist in the review of this report.

Species tested includes the critically endangered *Secale africanum* (Wild Rye) that is endemic to the Roggeveld-Renosterveld and is now found on a few farms only. Past poor grazing practices and ploughing of marginal lands led to degradation of the rangelands and the near extinction of palatable grass species such as *S. africanum*. Active restoration is needed to better the biodiversity. Seed of species indigenous to the area were subjected to tests to determine there germination potential and the best method of establishing it on old agricultural fields and its survival. Species with a high germination percentage has potential for use in restoration of old agricultural fields or degraded rangelands. They can also be planted in cultivations on these fields for seed multiplication.

III. NARRATIVE QUESTIONS

1. What was the initial objective of this project?

The purposes of this project were to increase our understanding and knowledge of six key plant species found in the Roggeveld and their use in rangeland restoration as well as to create awareness among the local farmers on the necessity to actively restore and manage old agricultural lands. It is believed that this project will lead to biodiversity-focused management of this unique landscape of the priority area.

2. Did the objectives of your project change during implementation? If so, please explain why and how.

No

3. How was your project successful in achieving the expected objectives?

Output 1. Six key species indigenous to the Roggeveld have been tested for their germination potential and suitability to be used for restoration purposes.

All six key species has been test for their germination potential. *Felicia filifolia* germinated very well in the nursery with the highest germination during June – August with 74% of the seeds germinating. Seed of *Ehrharta calycina* did however not germinate very well, with a low 8% germination. In previous germination tests of *E. calycina* a germination percentage of up to 35% were found. *Secale africanum* germinated very well in the nursery with a germination percentage of up to 100%, while only 20% of *Polhillia involucratum* seed germinated however after dormancy breaking tests were done, where the seeds were soaked in warm water at 80°C for 1 minute, 92% of the seed germinated. *Chaetobromus dregeanus* and *Eriocephalus ericoides* are commonly used in restoration efforts; therefore their germination potential and suitability to be used for restoration purposes were not tested in the nursery. However in previous germination tests done there germination percentage was 50% and 75% respectively.

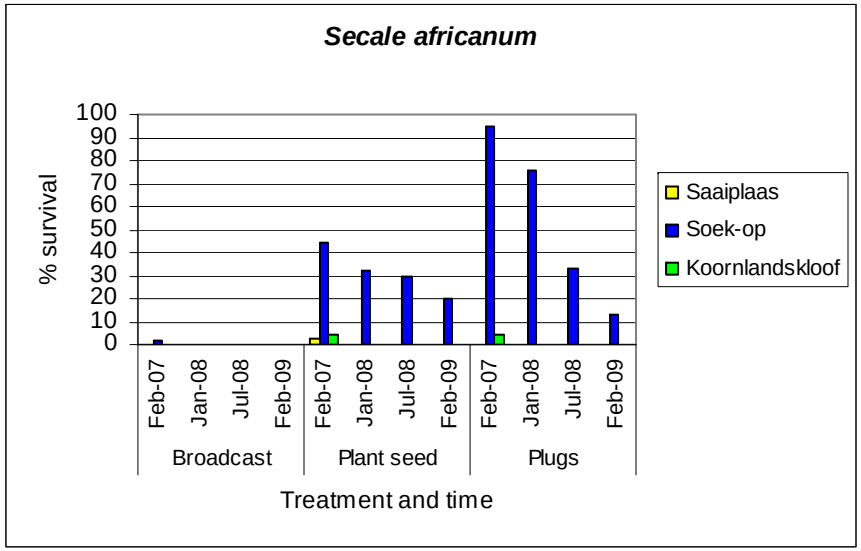
Output 2: A viable indigenous seed stock is available and utilized for re-establishment of these species in the Roggeveld.

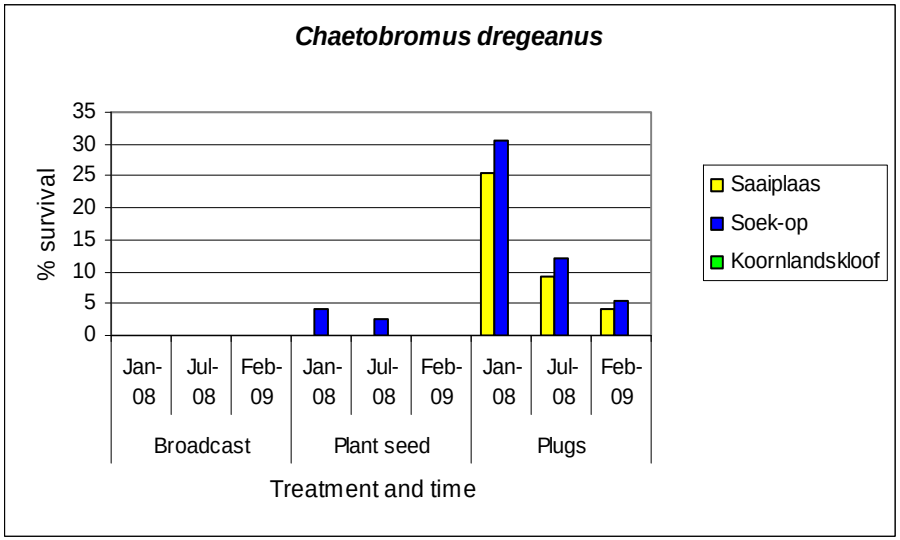
Secale africanum established well at the Soek-op site in the Hantam, with a 0.1% survival of the individuals in the 'broadcast seed'-treatment from January 2007 to February 2009. Over the same period 13.3% of the individuals from the 'plugs planted'-treatment survived, while 20% of the individuals in the 'plant seeds'-treatment survived. Plants of *S. africanum* were also found outside the demarcated study site at Soek-op. The numbers decline from the previous year, mainly because of a very dry summer and grazing by small antelope. This species can however be regarded as suitable for restoration purposes if planted at the start of the rain season (April – May) and protected from grazing until established. Planting plugs and the planting of seeds seem to be the best method of establishment including minimal soil disturbance ($F = 3.57$; $p = 0.0273$).

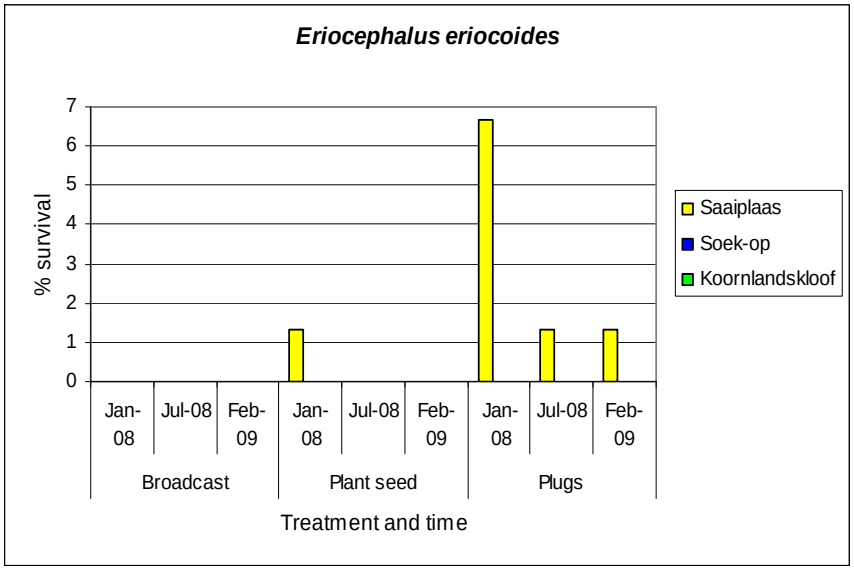
Chaetobromus dregeanus, Eriocephalus ericoides and *Felicia filifolia* were planted and sowed-in at the three sites during July 2007. In February 2009 none of these species did established at Koornlandskloof (Roggeveld site), because of competition from invasive alien grass species, as was the case with *Secale africanum*. To date it seems that the planting of plugs are the best treatment at the other two sites ($F = 29.62$; $p<0.0001$). At Saaiplaas (Klein Roggeveld) 5.3% of *F. filifolia* plugs survived and 4.0% of *C. dregeanus* and 1.3% of *E. ericoides* plugs planted survived. *Eriocephalus eriocoides* did not establish at Soek-op (Hantam site), but 5.3% of *C. dregeanus* plugs survived after two years.

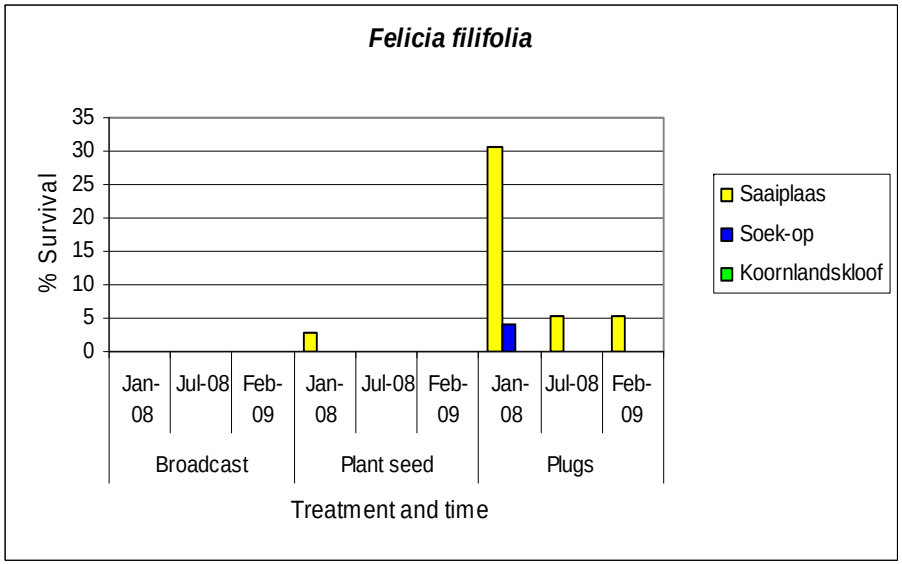
Due to a lack of seed, *P. involucratum* and *E. calycina* could not be tested for their use in restoration efforts in the Roggeveld-Renosterveld.

Percentage survival of the four different species tested at the three different sites in the Roggeveld Renosterveld.









The cost of this restoration effort was about R4800/ha ($600) of which R540 ($67.50) was for labour, soil preparation and seed and R4260 ($532.50) was for fencing material.

A radio talk was given on a national radio station, a paper was presented at the 44th Annual Congress of the Grassland Society of Southern Africa held in Roodepoort, South Africa in July 2009 and a poster was presented at the 8th International Rangeland Congress held at Huhhot, China during June/July 2008.

Output 3: The capacity of members of the local community has been built.

Laborers from the local towns and farms were used to assist with the establishment of the trials, thereby learning how to do the planting and sowing and the preparation of the soil. We gave training to two members of the Sutherland community in the preparation of soil and planting of seeds and seedlings of indigenous species in a nursery, as well as advise on restoration of the rangeland at one of there sites.

Information on starting your own nursery and to supply seed to other farmers was given at a Farmer's day held at the Soek-op site in November 2008. A pamphlet with this information was also printed to be distributed in the area in the following months.

A popular article is submitted for publication in a local magazine. "Saayman N. Hervestigingsmoontlikhede van Roggras en ander spesies in die Roggeveld. *AgriProbe*.

Output 4: The results of this research project have been effectively communicated to the regional farmers.

A Farmer's day were held in November 2008 at the Soek-op site to communicate the results of the project to the land owners and make them aware of the correct use of their rangeland and the economic and ecological benefits of it. A brochure with the relevant information on best practices, lessons learned and contact numbers were printed and distributed at the farmer's day. Local farmers also gave feed back on their restoration successes. A pamphlet with this information was also printed to be distributed in the area in the following months.

A radio talk was given on a national radio station in 2008.

2007: An A0 size poster, which summarizes the project simplistically in Afrikaans, has been displayed for two weeks at the co-operation in Sutherland and Calvinia. "Cupido CF, Visser N & Botha JC. Hervestiging van die biodiversiteit in Roggeveld-Renosterveld: Evaluasie, vermeerdering en vestiging van inheemse plant spesies op ou lande."

A popular article is submitted for publication in a local magazine. "Saayman N. Hervestigingsmoontlikhede van Roggras en ander spesies in die Roggeveld. *AgriProbe*"

4. Did your team experience any disappointments or failures during implementation? If so, please explain and comment on how the team addressed these disappointments and/or failures.

We could not appoint an MSc student to do the research and to get even more info from the project than we did, but we are satisfied with the results obtained.

5. Describe any positive or negative lessons learned from this project that would be useful to share with other organizations interested in implementing a similar project.

- Rainfall is critical – the project started during a severe drought and that prevented us from getting sufficient seed of all the species. Therefore all the species was not tested and testing of others started late. This is especially a problem when the project is time-limited.
- Small mammals (steenbuck and hare) grazed down a good stand of *Secale africanum* at the Soek-op site, preventing the harvesting of any seed. This was addressed by providing additional fencing material to the farmer to fence the site of to such an extent that the small mammals will also be kept out and not only livestock. This is important for the project, as this was the only site where *Secale africanum* established well and has the potential to harvest seed to supply to interested parties.
- The best time to plant/sow seed is during April/May after first good rains, otherwise it is to cold for the plants to germinate and establish.

6. Describe any follow-up activities related to this project.

The pamphlets with the relevant information will be distributed to Agricultural Co-operations and Farmer's associations in the Roggeveld-Renosterveld. We're still awaiting a date from the Sutherland Farmer's Association to present the information to the local farmers that could not attend the farmer's day.

7. Please provide any additional information to assist CEPF in understanding any other aspects of your completed project.

IV. ADDITIONAL FUNDING

Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.

Donor	Type of Funding*	Amount	Notes
None			

***Additional funding should be reported using the following categories:**

A *Project co-financing (Other donors contribute to the direct costs of this CEPF project)*

B *Complementary funding (Other donors contribute to partner organizations that are working on a project linked with this CEPF project*

C *Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)*

D *Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)*

V. ADDITIONAL COMMENTS AND RECOMMENDATIONS

We'd like to thank Nina Marshall and Kristina Razon for all the help and assistance provided.

VI. INFORMATION SHARING

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned and results. One way we do this is by making programmatic project documents available on our Web site, www.cepf.net, and by marketing these in our newsletter and other communications.

These documents are accessed frequently by other CEPF grantees, potential partners, and the wider conservation community.

Please include your full contact details below:

Name: Nelmarié Saayman
Organization name: Western Cape Department of Agriculture
Mailing address: Private Bag X1, Elsenburg, 7607
Tel: +27 21 808 5330
Fax: +27 21 808 5331
E-mail: nelmaries@elsenburg.com