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DEVELOPMENT ?**

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## **RABBIT PRODUCTION IN CISKEI - DO MORE THAN TEN YEARS OF EXISTENCE PROVE SUSTAINABLE DEVELOPMENT ?**

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### **ABSTRACT**

Rabbits have been widely used in production systems for rural areas in developing countries. However, little is known about the sustainability of these projects. If they fail the failure is often attributed to animal related problems. A rabbit project in Ciskei, South Africa, initiated in 1985 survives to this day. It was started with only six rabbits and developed on demand of the rural people to a breeding station with more than 100 does. Between 1988 and 1991 3487 young rabbits were produced, of which 15% were sold as breeding stock, 85% as slaughter rabbits. In July 1991 the initiator handed the project over to a group of women trained at the breeding station, who continue to manage and maintain the existing structures. To this day in early 2000, the project is tied in with the regional government. The sustainability of the project must be attributed to the enthusiasm and the support of the rural people created by dedicated promotion of the idea, successful training of local staff and most of all training and coaching of rural farmers.

### **INTRODUCTION**

The Ciskei is one of the reserve areas or former homelands in South Africa. It is situated in the region of the Eastern Cape and traditionally home to the Xhosa people. According to central statistics (1990) the population is 99% black, dominantly Xhosa, 0,7% coloured and 0.2% white.

It covers an area of 8 300 km<sup>2</sup>. Population density is 128 person/ km<sup>2</sup>, which is about 6 times higher than in South Africa as a whole. 48% of the households are landless, average household size is 5.5 person. Life expectancy is 57 years, child mortality 9% (1986), male/female ratio in the age group 15- 60 is 1:7. In some areas children up to the age of 15 represent 45% of the population. This is due to labour migration, which leads to the fact that women have to carry more than 70% of food production and 100% of food processing, not to mention the gathering of wood and water, as well as child rearing. One in four households is headed by a pensioner.

In 1985 the household subsistence level (poverty line) in South Africa was set at R 345.-/ month. 76% of Ciskeian households lay well below this figure. During the 80s a major policy directive of the Ciskei Government was to ensure "one meal a day" for each Ciskeian. In 1987 agriculture in Ciskei was only able to supply 28% of the nutritional needs of the population. A study done by Operation Hunger in 1987 found, that in this region, 40% - 70% of children under 14 were underweight and stunted for their age. One in ten children suffered from Protein-Deficiency-Disease.

Bearing this in mind, to help increase the protein supply for the population had to be a major concern in agriculture. A student project concerned with improving nutrition of needy families in rural Ciskei based on vegetable gardening, was chosen to integrate small livestock to ensure protein supply. Rabbits were suggested due to their small size, high fertility, fast growth and most of all their ability of being able to utilise garden-waste for feed, allowing production at little to no costs.

## **MATERIAL AND METHODS**

### **First Trial Unit**

In 1982/83 the Ciskei Agricultural Bank tried to introduce large scale commercial rabbit farming in Ciskei and failed, due to insufficient preparation, lack of knowledge and proper management. The surviving rabbits and equipment were handed over to Fort Cox Agricultural College in 1984. The rabbits were put into a pen and left to multiply freely, but not utilised.

In 1985 permission was given to integrate those rabbits in a student project aiming at improving the nutritional status in rural areas in Ciskei. A demonstration unit breeding with 6 does, was set-up at Fort Cox Agricultural College. As the use of rabbits as farming animal was totally unknown to rural people, intensive promotion was necessary. To help overcome misconceptions rabbits were shown, slaughtered and prepared at agricultural shows, field days and on invitation at women meetings, giving people a chance to get to know the animal, see the advantages and try the meat.

In 1986 the first trial unit was set-up at a village, to test rabbit production under field conditions. The unit was made available free of charge, but was to be paid for once production was successful. It consisted of a 3-tier wooden cage, made out of scrap wood, in which a nestbox and bedding was used. Two does and a buck were individually caged. The animals were solely fed on garden greens, collected leaves and wild plants. Young were weaned at the age of six weeks and either caged or kept in pens, built by the rabbit keeper. Does were remated after weaning, allowing for up to four litters/year.

For this field trial one woman was trained at Fort Cox College in a one day seminar. During the first production cycle the site was visited on a weekly basis to monitor the progress and to discuss any problems arising.

### **The Ciskei Rabbit Breeding Centre - CRBC -**

In July 1988 the rabbits moved from Fort Cox College to the newly established Ciskei Rabbit Breeding Centre – CRBC -.

Main objectives of the CRBC were:

- training of staff, extension services and rural farmers,
- all aspects of promotion of rabbit production
- breeding of suitable breeding stock,

#### **A. Training programme**

##### **1. Training of CRBC staff**

During the planning phase of the CRBC a group of 6 women was selected and trained at Fort Cox College in basic handling and breeding of rabbits. The women, aged between 21 and 34 years, came from different districts in Ciskei, and had between 3 and 5 years elementary school education.

Staff training continued up till July 1991, on all aspects of rabbit production, including slaughtering, training of rural farmers and promotion of rabbit meat at cooking demonstrations and agricultural shows. Courses were held to impart basic knowledge in record keeping, principals in marketing and the possible use of by-products. All women were also involved in trials of home tanning of skins.

In 1989 a young woman, who had graduated from Fort Cox College, joined the original group and was specifically trained to take over in 1991. She continues to manage the CRBC. Except for one, all of the initial staff is still living and working at the rabbit centre.

## 2. Training of governmental extension officers

A specific training programme was developed for government extension officers to ensure the support of rabbit production throughout Ciskei.

## 3. Training of local people interested in rabbit rearing

Basic training concerning the rabbit, -handling, breeding, its feed and hygiene requirements, appropriate housing, etc...-, was offered in form of one to three day seminars at the CRBC, as well as on spot training if initiated by the villagers. After the first initial training the interested rabbit-keepers-to-be had to prepare housing and get the place ready. The CRBC would then supply mated females and inspect the unit once a week during the first rearing session. Unless serious problems had been encountered during this cycle, the villagers felt safe to continue on their own, once they had successfully reared and slaughtered their first litter. Continued support was given by a rabbit extension officer, who came to each region once a month to stay in touch and help if necessary.

## B. Promotion

With the establishment of the CRBC, promotion was increased by:

- setting up small demonstration units at elementary schools and day care centres, teaching children to rear rabbits,
- organising cooking demonstrations for women groups,
- continued presence at agricultural shows, field days and women gatherings.

In cooperation with Radio Ciskei interviews were held and a rabbit recipe was broadcast every week over a period of six month.

## C. Breeding

### 1. Management

Except for the initial breeding stock of 17 animals, which came from Fort Cox, all does were bred at the CRBC. Does were first mated at the age of 5 month, and remated 4 weeks after kindling, achieving 5 – 6 litters/year.

Initially problems were encountered with the acceptance of New Zealand White rabbits due to the coat colour, - white animals are traditionally used for rituals only -. As coloured rabbits were only available from hobby breeders in South Africa and could not be bought in large numbers, various male rabbits, such as Flemish Giant, Agouti, New Zealand Red and Rheinlander were introduced and bred to crossbred females of unknown origin.

The most accepted type, by outward appearance, was then selectively bred for high temperature tolerance, using good resistance and fair production under extensive conditions as parameters. The rabbit became known as the "Ciskei Veldthumper".

For interested Ciskeians the price for breeding stock was R 13.- (government subsidised), which could be paid once production was successful. Buyers from outside Ciskei paid R 30.0.

### 2. Housing

From July 1988 to January 1989 all rabbits were housed in a shed 15 m x 5 m x 2,5 m, with concrete floor, corrugated iron roof, open on one side. Caging consisted of a 3-tier wire mesh cage system, manufactured locally according to requirements. Breeding females were supplied with a permanent nestbox with sawdust bedding. In February 1989 the animals moved into a bigger shed, 27 m x 9 m x 4,5 m, with concrete floor, both sides open for ventilation at 1,2m height, corrugated iron roofing, same cage system.

In August 1989 a second shed , 27 m x 9 m x 4,5 m, was completed to house the breeding stock and weaners up to the age of 8 weeks. Breeding rabbits were kept in cages,

the weaners were grouped, up to 15 animals, same sex, in concrete floored boxes, 1,2 m x 1,2 m, with sawdust bedding. After 8 weeks they were moved to the other shed. Young chosen as breeding stock were individually caged. Slaughter rabbits were grouped in concrete floored boxes, 1,8 m x 3 m, with sawdust bedding, in groups of up to 35 animals according to age and sex.

### 3. Feeding

All rabbits were fed commercially produced rabbit pellets, *ad libitum*, plus vegetable greens in the afternoon, collected from the fields of a vegetable project nearby.

Feeding trials were carried out establishing the difference in growth and carcass composition, comparing three types of feeding:

- commercial feed *ad libitum*
- 50g commercial feed plus green feed *ad libitum*
- green feed *ad libitum*

The groups consisted of 18 animals each, randomly selected, age 34 – 42 days, weighing between 700 g and 1420g respectively, repeated twice.

## RESULTS AND DISCUSSION

### First Trial Unit

Two litters were successfully reared and rabbits, not consumed by the family, were used to pay for the cage and the initial breeding stock. The satisfying result of this trial created a need for further units. Initial set-backs due to negative publicity and prejudice concerning the white coat colour were quickly overcome by the success of 8 more family units in the field by July 1987. Interest snowballed and led to a waiting list. Major constraint was the lack of suitable breeding stock, as the mother unit at Fort Cox bred with six does only. By September 1987 38 families in 5 Ciskei districts were anxious to start breeding rabbits. Additionally a demand for slaughter rabbits had developed, which could not be met.

Due to the circumstances the Ciskei Government approved the construction of the Ciskei Rabbit Breeding Centre – CRBC - . The development of the CRBC was directly initiated and supported by the increasing demand in the field.

### CRBC

#### **Training & Promotion**

A detailed training programme involving rural families, staff, extension services and schools, - to name just a few - , was translated into action. This included regular visits to schools and day care centres, where small rabbit units were established to teach children. A colouring-in book as teaching aid was printed in 1989. The success of rabbit recipes broadcast weekly by Ciskei Radio over a couple of months, led to the publication of a small recipe booklet and a tremendous increase in the demand for slaughter rabbits.

#### **Breeding**

The Ciskei Rabbit Breeding Centre was established in 1988 to supply breeding stock as well as slaughter rabbits to Ciskei and surrounding areas. Production started in July 1988 and developed along with the requirements.

Starting with 17 does in July 1988, breeding stock of the CRBC was built up to 101 does in 1991 (table 1). The production increased from 61 litters, and 365 young raised in 1988, to 394

litters and 1756 young raised in 1990. The increasing production was barely able to meet the demand. Between 1988 and 1990, a total of 3197 rabbits was raised and sold for breeding or consumption. Approximately 15 % were sold for breeding, the other 85 % were sold as slaughter rabbits at R 3.0/kg live weight.

**Table 1 : Evolution in breeding does number and production of the CRBC Unit, between 1988 and 1991**

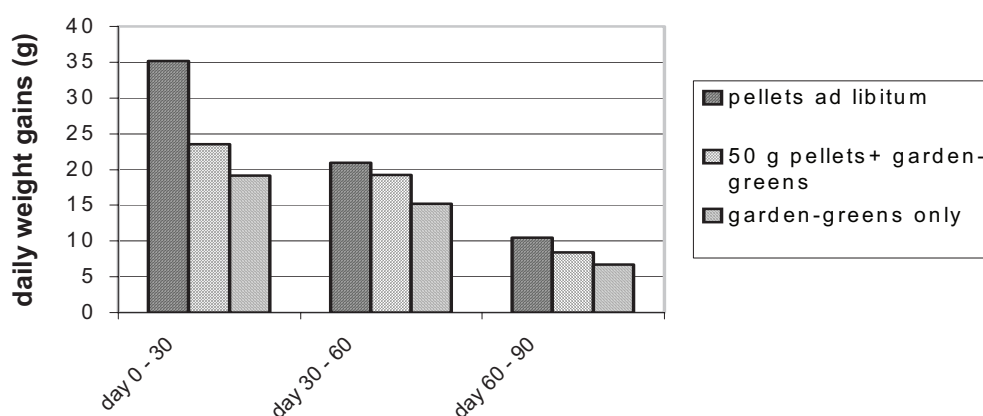
Year	Number each year		
	Breeding does	Litters	Young raised
1988	17	61	365
1989	51	270	1076
1990	81	394	1756
1991	101	-	-

By then, 116 families in 28 of 42 districts in Ciskei bred rabbits for home consumption. The demand for slaughter stock and rabbit meat from outside Ciskei had increased to such an extent, that an abattoir was planned and built on site. However, the impact of political change in South Africa, causing a breakdown of local administrative structures, prevented the installation of a cool-room. The abattoir has not been utilised up to today. As the demand is undiminished the CRBC continues to market slaughter rabbits alive.

As more and more families started breeding rabbits, under extremely varied conditions, it became necessary to look into suitable requirements concerning caging and housing. At that stage rabbits in the field were bred and reared in wire mesh cages as well as solid floor wooden cages with bedding required, single or in groups. Raising was also done in groups in pens with concrete floor or on soil.

### Feeding

Feeding trials at the CRBC established growth rates of weaners reared with commercial feed *ad libitum*, 50g commercial feed/day plus garden-greens *ad libitum* and garden-greens only.



**Fig.1 : Influence of different types of feeding on daily weight gains of weaner rabbits, during a 90 days fattening trial**

Weaner rabbits achieved average growth rates of 22.2 g/d when fed on commercially produced pellets, 17.0 g/d with the combination of pellets and garden-greens and 13.7 g/d

with garden-greens only (Fig. 1). Although the group fed only on garden-greens grew significantly slower, rabbits eventually reached a weight of 2.5 kg after 150 days fattening. This is definitely not interesting for commercial farming, but where rabbits are kept in needy families, time is not a relevant factor as long as there will be meat at the table eventually.

All research came to a halt in 1991 due to tremendous unrest in the wake of political changes in South Africa. This also included the tanning of rabbit skins which had been successfully tried with various recipes. Intention was the setting up of a home industry, creating much needed jobs, specifically for women.

## **CONCLUSION**

I left the Ciskei Rabbit Breeding Centre in July 1991 because of the political unrest. On my recommendation one of the women at the project was appointed manager in charge. Over the years I stayed in contact with the project and visited the area in February 2000. I was excited to find, that almost all of the originally trained staff members were still there, despite tremendous administrative problems. In all these years production records have been kept meticulously. The interest in rabbit production is still high and the demand for rabbit meat stronger than ever. I have been told that quite a number of families are still producing in the districts.

Together with the collected records from the initial phase between 1985 and 1991 it is therefore possible to look back at 15 years of existence and development. I have started a research project analysing the original data with reference to the sociocultural and socioeconomic impact on the live of families involved and the region as well. An evaluation of the situation today would provide further data to allow a comparative analysis. This should deliver key-factors for sustainable development.

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