

Food security and the forgotten wealth of resources available in South Africa

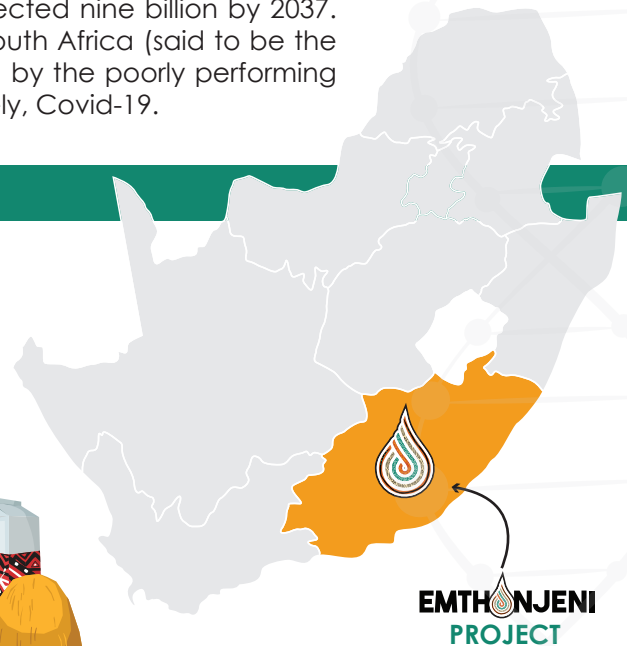
Much has been said and written about the global food security challenges caused by the global population reaching an expected nine billion by 2037. The uncertain state of food security in Africa and South Africa (said to be the most food secure country in Africa), is exacerbated by the poorly performing South African economy and more lately, Covid-19.

Our children are at great risk when it comes to food security [1]:

- For nine million of our children, school is a critical supplementary source of nutrition.
- The growth of **27%** of children under five is stunted (a condition caused by undernutrition that **affects the cognitive and physical development** of children).

School closures due to the nationwide lockdown in South Africa have worsened the already critical situation, dramatically.

Of course, there are many solutions proposed, but the one that Afrivet has embarked on is to improve the production of meat, milk, and fibre from all the country's livestock.



**EMTHNJENI
PROJECT**

There are **14 million cattle, and 30 million sheep and goats** in South Africa.

Approximately half of these are in commercial hands and the other half are owned by small-scale stock farmers, mainly in the communal lands of the former homelands. South African beef production annually is about 800 000 tons and mutton/lamb about 110 000 tons [2].



Of the meat reaching the formal markets, **90%** is produced from **commercial herds** and only **10%** from the herds of the **small-scale stock owners**. Herein lies the answer – we need to improve the production of the other half of the national herd.



The site of intervention is intended to be the **5000 State-provided dip-tanks** in the remote communal areas of the country.

These dip-tanks each serve on average **800 cattle of 80 different owners**, giving a total of approximately **4.5 million cattle** (and varying numbers of goats and sheep) owned by **400 000 households**.



These dip-tank sites are crucial as the cattle are brought here often, weekly in summer and bi-weekly in winter. When properly manned and managed, they are potentially important places for:

- disease surveillance and early detection,
- administration of traceability,
- disease observation and animal examination,
- training and technical support,
- access to stock remedies and nutritional supplements, and
- access to market (auctions) and the value chain.

Research at the Eastern Cape's Dohne Provincial Research Station has shown that poor production is not a genetic characteristic of the cattle breeds in the hands of the local small-scale owners. It is rather due to the poor animal health and -production management.

Merely by improving the management there was a **40% improvement** in all parameters measured of all individual animals in the project, namely:

- Conception rates,
- Calving rates,
- Weaning rates and weaning weights



Afrivet has piloted, very successfully, the concept in an initial project in KwaZulu-Natal at the Siyaphambili co-operative and a far bigger project, the Emthonjeni dip-tank management project. The Emthonjeni dip-tank management project is centred around 66 dip-tanks with approximately 50 000 cattle and 40 shearing sheds servicing 450 000 sheep in the Engcobo district in the Eastern Cape. This is in conjunction with Eastern Cape Veterinary Services, the Onderstepoort Faculty of Veterinary Services, and Onderstepoort Biological Products. This project aims at improving animal health and production, the health and wealth of the community, and facilitating access for these stock owners to the beef, mutton and wool value chains.

Some baseline findings from the Emthonjeni dip-tank management project

Outcome-based objective:

See a behavioural change in farmer's socio-economic circumstances through a positive shift in key Poverty Spotlight indicators



The surveys assess poverty levels using 50 indicators grouped into 6 dimensions of poverty



Income & Employment



Health & Environment



Housing & Infrastructure



Education & Culture

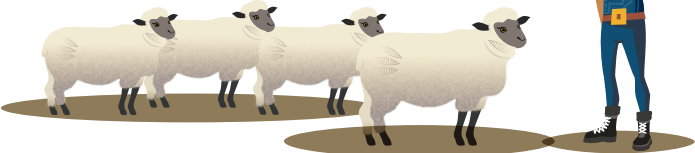


Organization & Participation



Interiority & Motivation

The majority of the farmers (71%) and CAHW's (64%) earn an income that is less or equal to R2000 per month. In the questionnaire 72% of the farmers indicated that they sell the animal's wool but don't get a good price for it as it is not in a good condition. Thus we can assume that the farmers can't currently use their animals as an effective income stream as they don't know how to properly manage their herds.



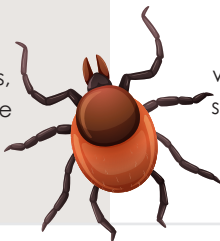
Most of the farmers (39%) indicated that they don't have a healthy herd and that the animals die due to malnourishment (89%).

Furthermore, 65% indicated that drought is the main cause of malnourishment. The other reasons for mortalities include tick born diseases (17%), liver problems including bile, lumps on liver and liver warts (15%) and the other 3% is due to lameness in lambs and kidney problems.



What is the biggest disease challenge in cattle?

64% of farmers have problems with ticks (including red water and anaplasmosis), 10% with gall sickness, 9% with cysticercosis and 7% with black quarter. The other 10% have problems with blindness, warts and pneumonia.



What is the biggest disease challenge in sheep?

54% of the farmers have problems with sheep scab, 13% with tick born diseases, 12% with pulpy kidneys, 9% with gall sickness, 6% with cysticercosis and 3% with worms. The other 3% struggle with bile and abortions.



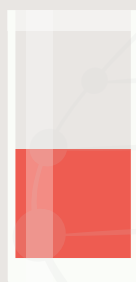
100% of the CAHWs indicated that they have an informal agreement to live on the land while 60% of the farmers have legal property rights.

The other 40% of farmers would need to get formal agreements in place to use the land for their animals. If this is not implemented, the farmers may loose the land and thus their livestock business as well.

It is positive to see that 84% of the farmers and 64% of the CAHWs have a life map and personal goals in place.

There also exists a lot of self-confidence among the families as they are excited about the future and aim to achieve their goals. They also have a positive perception of themselves and express themselves in a polite

66% of the farmers see their life glass as half full, while 34% have a negative perspective on life.



It is at these dip-tanks that Afrivet has focussed its intervention. The intervention involves:

1. Selecting and training of Community Animal Health Workers (CAHWs) from the local community (one per dip-tank) in Primary Animal Health Care (PAHC) and animal production.
2. Providing these CAHWs with local support from a qualified Animal Health Technician (AHT), one AHT per 16 CAHWs/dip-tanks.
3. Providing the CAHWs and AHTs with remote support that consists of the following:
 - o Apps on observation and examination, as well as herd composition records and products.
 - o A call centre manned by veterinarians.
 - o Animal health first-aid kits.
 - o Access to products for replenishment.
 - o Administrative support.
4. Remunerating the AHTs and CAHWs. The AHTs are salaried workers and the CAHWs earn commission on sales of stock remedies and nutritional supplements. These are sold at competitive prices as the value chain is shortened to exclude spaza shops and co-operatives that, cannot and do not provide any technical support to owners seeking assistance.
5. Facilitating auctions, on a regular basis, of the excess animals with a management history certified by the AHT and supported by Afrivet. This will increase prices offered from the current R6 000 per animal to R8 500 per animal.
6. Asset-based Community Development (ABCD) training of the community, which teaches them to understand the value of their assets and how to make a living from it.

The outcome of this intervention is measured through animal numbers and disease reporting to the local veterinary services departments, including mortalities. The following is measured and reported on:

- Animal-production-number increase,
- Herd composition, and
- Animals sold and the prices achieved.



All this is measured initially as a baseline and then every two years after the initiation of the intervention.

The impact projected is massive:

- Production is doubled, merely by improving herd composition, calf survival and supplementary nutrition in winter.
- The total income is increased as a result of the improved prices received and the number of animals available for sale.
- It is conceivable that the income from cattle can quadruple after a period of 5 years.



This intervention will:

Create
5 000
decent and
sustainable
CAHW jobs



Create **315**
decent and
sustainable AHT
jobs



Improve the
community as
animal owners **earn
better incomes**



Increase formal
beef production by
at least
300 000 tons



**Increase mutton
and wool
production** for
export, significantly

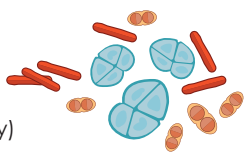


Improve the
nutritional, health,
and financial
welfare of **400 000
households**



Community wellbeing is increased as their health improves from controlling zoonotic diseases in their livestock.

- Tuberculosis
- Brucellosis
- Rabies
- Neurocysticercosis (epilepsy)



This will stimulate the animal health industry:

- Importers
- Local manufacturers
- Distributors



It will increase sales of stock remedies and veterinary medicines from the current **R3.3 billion** per annum to approximately **R6 billion** per annum.

Since its inception, Afrivet has the philosophy of providing not only quality, cost-effective livestock stock remedies but also sound technical advice. Over the past two decades it has become clear that these two aspects need to go hand-in-hand if a significant production improvement is to be achieved. From this the concept of PAHC developed. Afrivet established and currently sponsors the Chair in PAHC at the faculty of Veterinary Science, Onderstepoort, University of Pretoria. Together, the Chair and Afrivet developed a comprehensive PAHC-system, including 11 published books on animal diseases 20 PAHC-training modules (in most of the local languages), a number of mobile applications to assist with remote support, and a dedicated veterinary technical support call centre.

References:

- [1] Investec Focus. https://www.investec.com/en_za/focus/beyond-wealth/food-security-and-covid-19.html. [Downloaded: 30/07/2020].
- [2] Red Meat Producers Organisation: Overview of the South African red meat industry. <https://www.rpo.co.za/wp-content/uploads/2018/06/Co-rine-Presentation-AGM-14112017-Read-Only-Compatibility-Mode.pdf>. [Downloaded: 30/07/2020].