

WORLDWIDE  *fruit*

# Water Stewardship Case Studies

## South Africa



STARGROW

### Case Study 11:

# Kunje Farm



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Photo by Carina Wessels

Worldwide Fruit Limited are investing in Water Stewardship across their supply-base and will be presenting Water Stewardship case studies from supplying farms over the next 12 months. Their aim is to raise awareness of the challenges that South African growers deal with on a daily basis. Water management challenges and the solutions implemented to overcome them will be explored, but we will also see how growers are driving ongoing good management of water resources. Apart from water, case studies will also look at current sustainability strategies implemented and plans for improving sustainability into the future.



## Case study 11: Kunje Farm (Stargrow)

- Case study 10: Elandsrivier Boerdery (Icon Fruit)
- Case study 9: Vadersgawe Farm (Delecta)
- Case study 8: Boplaas 1743 Landgoed (Core fruit)
- Case study 7: Waterford Farm (TFFG)
- Case study 6: Morgenzon Farm (Rubisco)
- Case study 5: Cerasus Farming (Stems)
- Case study 4: Dreem Fruit (Delecta)
- Case study 3: De Keur
- Case study 2: Dennegeur Farms
- Case study 1: Boomerang Fruits

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# Summary

Kunje farm is situated in the Koue Bokkeveld region, about 200 km north east of Cape Town. They are one of the oldest farms in the region and produce mostly stone fruit, pome fruit, and citrus. They also have their own fruit drying store, as well as a packhouse that operate on solar energy. Kunje is very active in their social initiatives and have opened a nursery school and community hall on the farm. They hold annual sporting events for their staff, and their riel dance group have competed on national level in the past. Kunje gets their water from a river system that runs from the mountains into the larger Twee River system. They are concerned about the water in the Twee River region, as this scarce resource has become more and more under pressure in recent years. The Twee River is home to two critically endangered endemic freshwater fish species, and WWF and partners have been working with farmers on projects in this region to clear invasive alien plants, improve farm-level management, rehabilitate the Twee River system, and conserve these endangered fish. A major WWF focus has been on stewardship agreements with key riparian landowners, one of which is Kunje farm, to secure habitat for these fish species.



Top: Kunje's office building. Bottom: Kunje's colourful packaging in their packhouse.  
Photos: Carina Wessels

# History of the Farm

Kunje farm is situated in the Koue Bokkeveld region. Translated from Afrikaans, Koue Bokkeveld means "Cold Buck Shrubland" and is one of the areas with the coldest winters in the Western Cape. Situated 200 km north east of Cape Town, 50 km north of the town of Ceres, the plateau of the Koue Bokkeveld is farmland, producing predominantly fruits and vegetables. Some of the oldest farms in South Africa are located here and Kunje is one of them.

Kunje farm is proud of their traditions that span almost 190 years. The farm has been owned by the Hanekom family since 1834. The original farm was owned by David Jacobus van Rensburg from 1831 - 1834. Late in 1834, the first Hanekom, Eduard Jacobus Hanekom, a fifth generation Hanekom in South Africa, started farming on Kunje. He divided the property into Kunje, Tandfontein, Langrivier, and Heksrivier. In 1901, the current owners' great-grandfather, L.C. Hanekom (third generation on Kunje), expanded the property by buying a portion of Kuentje Mountain.

In the early years they farmed mostly with cattle, vegetables, and grapes. In later years, tobacco was planted, but discontinued in 2005. In 1956 Louis Hanekom (fifth generation on Kunje), currently 86 years old, started farming with his father and in 1960 planted the first apples, oranges, peaches and pears on Kunje. In 1986, Theunis Hanekom joined his father Louis, and they expanded the farm together, to the magnificent farm it is today. We had the privilege of meeting with Theunis, sixth generation on Kunje.

At Kunje, a wide variety of fruits are currently farmed, including stone fruit, pome fruit, as well as citrus. Kunje also has a fruit drying store and packhouse, which pack fruit for domestic as well as export markets. The packhouse has been operating on the farm for more than 20 years.



Theunis Hanekom, current owner of Kunje Farm, and sixth generation on the farm. Photo: Carina Wessels

# Culture & Social Initiatives

For many years the Hanekoms had been dreaming of establishing a nursery school and community hall on the farm, and on 11 September 2015 the Jabulani nursery school and community hall, of more than 400 square meters, was officially opened. The community hall is used by Kunje community for various special occasions.

Jabulani, which means cheer and praise in Zulu, is not only a crèche for preschool children, it also provides after school care for primary school children, and meals for all children. “We believe that the children are the future of tomorrow. They are a product of their environment, and we want to create a good environment for the children on the farm with the project”, says Theunis Hanekom. A safe play area has been set up, and the Western Cape Department of Agriculture subsidises a vegetable garden at the school. The department also donated equipment, plants, seeds, and fertilisers.

Some of Kunje’s staff have lived and worked on the farm for generations and continue the farm’s traditions. There are about 70 permanent workers on the farm, and an additional ±300 workers are employed in season. Kunje holds an annual sporting event on Reconciliation Day (16 December). The Kunje athletics team often compete against other regional farm and business teams and have won many local races. Rugby players from Kunje and neighbouring farm Tandfontein, also form the Barbarian rugby team.



Kunje Farm’s community hall and nursery school, Jabulani crèche. Photos: Carina Wessels

Kunje's riel dance group, the "Sneeu Trappers" also participate in the ATKV National Riel Dance Championship. A few years ago Kunje's riel dance group reached the final regional elimination round in the championship.



The riel dance is born out of traditional Khoi and San ceremonial dances. Through their movements, dancers tell stories, while showing off striking footwork in the dust. Photo: Esa Alexander, Gallo Images

### **Riel dance**

Riel (or Riel dance) is a Khoisan word for an ancient celebratory dance performed by the San (also known as Bushmen), Nama and Khoi. It is considered one of the oldest dancing styles of indigenous South Africa. Also known as Ikhapara by the Nama, the dance is often used to tell a story, and demands an energetic pace and a lot of fancy footwork. The dance was performed in the dusty sands around a campfire and thus the dance is described by a beautiful Afrikaans expression: "Dans lat die stof so staan" (Dancing so fast it results in a lot of dust).

The riel became the dance of the working classes, particularly between the 1940's and 1950's and was danced, especially in the Northern Cape, Karoo and some Western Cape regions. In an effort to preserve the riel from dying out, the Afrikaanse Taal en Kultuurvereniging (ATKV) (the Afrikaans Language and Culture Association) launched a cultural community project in 2006 – a national riel dance championship with regional elimination rounds culminating in a final competition. More info and photos: <https://mzanzitravel.co.za/dance-dust-and-energy-the-world-of-the-fabulous-rieldancers/>

# Sustainable Water Management



Water holding dam on Kunje Farm. Photo: Carina Wessels

The Hanekom family business consists of three farms – Kunje (the largest), Rotsvas, and Buffelshoek – spanning over 2000 hectares. Only 170 hectares are cultivated, while the remainder are mountainous, natural areas. Kunje gets their water from a river system that runs from the mountains into the larger Twee River system. They also have a couple of boreholes, but only use these in emergencies.

Theunis says that he is definitely worried about the water in the Twee River region. It is a winter rainfall area, and their biggest challenge is having enough water in summer. In the past they were always able to farm sustainably with a river that was relatively consistent, but it's become more under pressure. "The drought across the Western Cape and in our region made us all realise the importance of water and we started looking at water through new eyes again. The rain in the winter season was shorter and that made for a much longer, drier summer", says Theunis. Kunje adapted to the drought by cutting back on irrigation. They irrigated for shorter periods at a time, also for less total hours per week per block. They also irrigated more at night. "We managed things as best as we could", says Theunis.

In earlier years Kunje made use of flood irrigation, now they only use micro irrigation. They irrigate mostly by gravity, but do use pumps when necessary. Kunje put Variable Speed Drives (VSDs) on all pumps to optimise their irrigation system. VSDs can adjust frequency to regulate the speed and rotational force - or torque output - of a motor to match actual demand so that it does not work faster than it needs to. For example, reducing pump speed by 20% can reduce energy consumption by more than 50%.



Top: Mature orchard with micro sprinklers. Bottom: Young orchard with micro sprinklers.

Photos: Carina Wessels

Invasive alien plants (IAPs) used to be a big problem in the Twee River region. These plants have negative impacts on the environment by decreasing both surface water runoff and groundwater recharge, causing direct habitat destruction, intensifying flooding, and increasing the risk and intensity of wildfires. A few years ago WWF, in collaboration with other partners, cleared most IAPs from the Twee River system. Since then, Kunje does regular follow ups to make sure any new IAPs that appear are removed.

Kunje has their own chipper with which they chip up all cleared IAPs as mulch. They also use the pruning twigs as mulch, and have seen how this improved their soil quality. They used to spray herbicides to keep the area under the trees very clean, however they have learned that allowing the weeds to grow improved their soil quality and reduces evaporation.

Kunje is planning to start experimenting with shade nets this season. Netting structures will be designed so that the nets can be rolled up after the season, not restricting the natural movement of bees and other insects during pollination. Shade nets could result in a 15-20% water saving, in addition to providing protection against sunburn, wind and hail.

The farm has also started using “Integrate”, which is a soil surfactant that is applied through the irrigation system. It enhances initial water penetration, aids lateral movement of water, and improves soil water storage. Integrate has been registered to reduce crop irrigation requirements by up to 50%.

# Environmental & Other Initiatives



Kunje's packhouse with solar panels on the roof. Photos: Carina Wessels

The packhouse at Kunje uses solar energy. They have plans to expand their packing facility, and with that also to add more solar panels, hoping that they will soon be able to push back electricity into the grid.

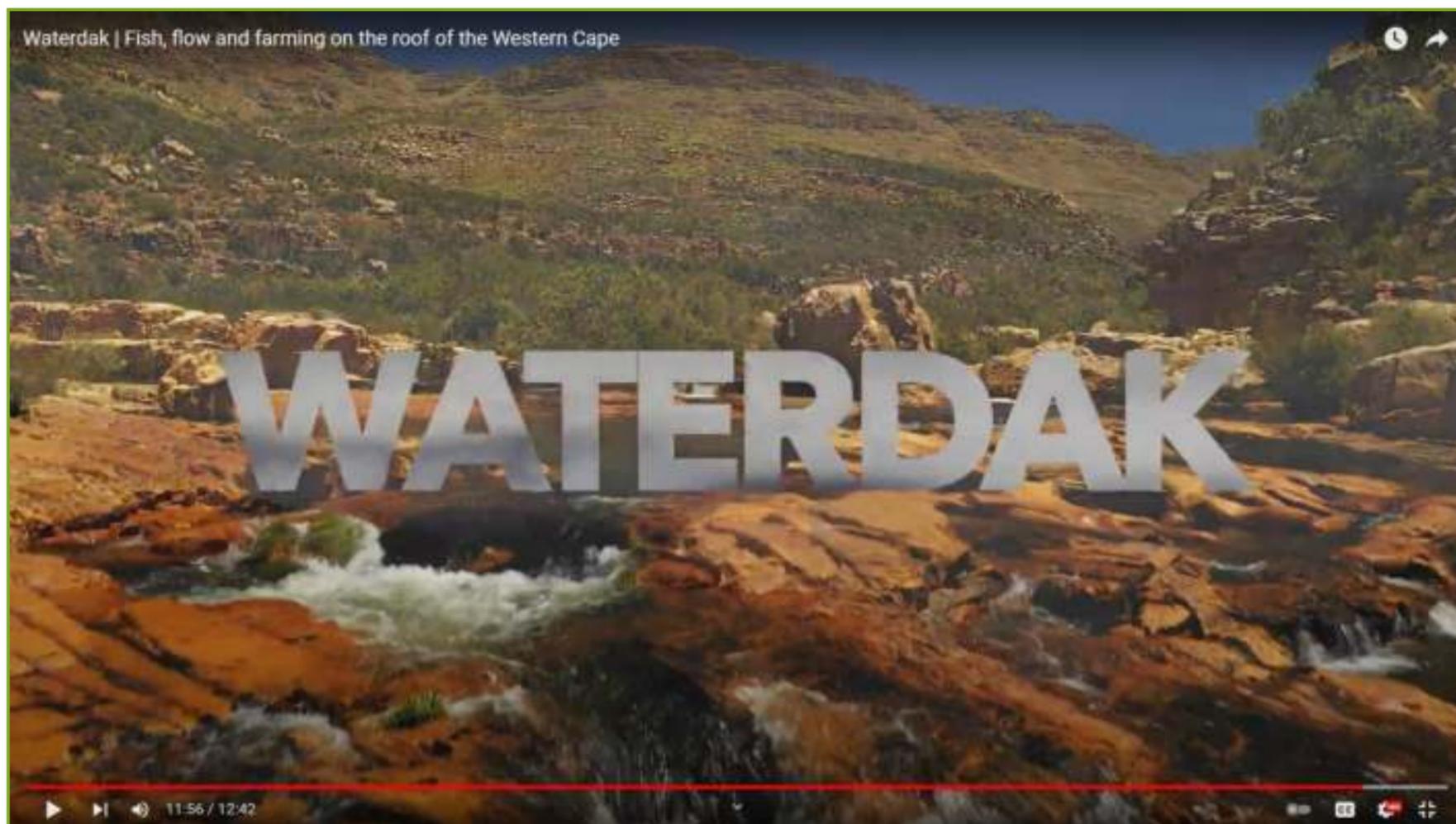
Kunje also work closely with Real IPM, a consultancy who provides Integrated Pest Management Services to the agricultural industry through biological crop protection programmes. Some of the IPM practices Kunje employ include mating disruption, nematode control, and root stimulation. Kunje has also learned the value of proper soil preparation before planting any new orchards.

Kunje farm lies adjacent to the Twee River Nature Reserve, named after the local river in the region. The Twee River is home to some of the most unique and threatened species in southern Africa. One is the Twee River redbfin – widely regarded as South Africa's most threatened freshwater fish. The other is the Twee River galaxias. Both are critically endangered freshwater fish species that inhabit the Twee River system. WWF and partners have been working on projects in this region to clear IAPs, improve farm-level management, rehabilitate the Twee River system, and conserve the redbfin and the galaxias (see this link for more info: <https://www.wwf.org.za/?uNewsID=12861>). A major focus has been on stewardship agreements with key riparian landowners (one of which is Kunje farm) to secure habitat for these fish species.



The critically endangered Twee River redbfin. Photo: <https://fynbosfishtrust.org/fynbos-fish/twee-river-redfin/>

WWF South Africa, the Freshwater Research Centre, and the Western Cape Department of Agriculture's LandCare have collaborated to produce a short documentary about the Twee River system and rising to the challenge of balancing water for people and biodiversity on the roof of the Western Cape. The film is called "Waterdak", translated from Afrikaans to "water roof", due to the location on the plateau of the Koue Bokkeveld. Kunje is a feature farm in the 12-minute film. Click on the image below to view the film.



Kunje is a feature farm in the short documentary called "Waterdak". Click on the image to view the film. Photo: YouTube Screenshot

As part of the Twee River system project, WWF, the Freshwater Research Centre and LandCare, are developing a water balance tool that will use available information sourced from national databases, as well as local information from farmers to provide an opportunity to understand and optimise water use within the catchment. A river is a very difficult habitat to manage and one of the biggest challenges of implementing an ecological reserve, such as the Twee River Nature Reserve, is to resolve the needs of many different users. The aim of the water balance model is therefore to tell how much water can be allocated to farmers, and how much can be set aside for ecosystem services.



Pear blossoms on Kunje Farm. Photo: Carina Wessels