

Water Stewardship Case Studies

South Africa



Case Study 12:

Paul Clüver

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 12: Paul Clüver (Kromco)

- 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

Paul Clüver is a family run estate that has been in ownership of the Clüver family since 1896, and forms part of larger holistic farming business called 'De Rust Estate'. Grandmother Gertrude Clüver planted the first apple orchards in 1948, and the estate is now home to 150 hectares of apple and pear orchards, 72 hectares of vineyards, a cellar, and a Hereford stud. Gertrude Clüver also established a school on the farm, De Rust Futura Academy, which has over 1000 learners from surrounding farms. As part of their curriculum, learners get practical experience on the farm, and many qualified learners return to De Rust Estate to work. The estate forms part of the UNESCO world heritage site, the Kogelberg Biosphere Reserve. Half the estate is set aside for conservation into perpetuity. Most of their water come from three streams that run off the mountain, and they are in the fortunate position to be in control of the catchment area where the streams come from. Paul Clüver's farming practices focus on actively conserving the entire water catchment area, and they make use of the latest technology, such as drones, for precision agriculture and spatial mapping, to ensure long term sustainable water use. In terms of climate change, they are concerned about extreme weather events, increase in extreme heat days and getting enough cold in winter. However, they are 100% invested in regenerative agriculture, and believe that following a more holistic approach, ensuring a healthy ecosystem, will buffer them against the worst effects of climate change.



Dr Paul Clüver in a young orchard on De Rust Estate. Photo: Carina Wessels

History and Culture

Paul Clüver forms part of a larger holistic farming business called “De Rust Estate”. De Rust Estate is situated in the picturesque Elgin Valley, which lies about 70 km southeast of Cape Town. The Elgin Valley is an intensively farmed district and is renowned for its apple and pear orchards, however Paul Clüver has also pioneered Elgin as a premium wine growing region. De Rust Estate is therefore home to 150 hectares of apple and pear orchards, 72 hectares of vineyards, a cellar, and a Hereford stud.

Paul Clüver is a 4th generation family business established in 1896. Gertrude Clüver planted the first apple orchards in 1948. The first wine grapes were planted in 1987 and the business only grew from there. We had the privilege of meeting with Gertrude Clüver’s son, Dr Paul Clüver, visionary of the business, and his son Paul Clüver (Jnr), Managing Director of the business. Dr Clüver first became a world-renowned neurosurgeon and is now one of the most prominent wine producers in South Africa. Dr Clüver and his wife have five children of which four are involved in the family business, as well as a son-in-law, who is their winemaker.



The Clüver family, with Dr Paul Clüver on the far right, and his son, Paul Clüver (Jnr), in the middle in front. Photo: Paul Clüver

Dr Clüver is a founder member of Kromco and has been chairman since 1994 until 2010. Kromco is one of the largest deciduous fruit packing facilities in South Africa and is 100% owned and supplied by producers from the Elgin region. Paul Clüver is one of 11 shareholders in Kromco.

Paul Clüver’s focus is to produce world class fruit and wine that reflect the uniqueness of the Elgin valley, but more specifically of De Rust Estate, while being mindful of their actions both on the environment and on their community.

Social Initiatives

Most of Paul Clüver's farm workers live in De Rust village on the farm. It has a large community space in the centre of the village, including a community hall and a church. The village is also at the forefront of the Thandi project, one of the first black economic empowerment initiatives in South Africa, enabling workers to own their own orchards. The Thandi Project promotes and supports community empowerment.

De Rust Futura Academy

More than 60 years ago Gertrude Clüver established a farm school on De Rust Estate. The school, now called De Rust Futura Academy, started with only 23 learners. During the years of apartheid farm owners were prohibited to have schools on their properties, so Gertrude Clüver made the school land available to the United Reformed Church of Grabouw. After some years the church could not keep up managing the school anymore and Gertrude formed a non-profit company, De Rust Futura Trust. She convinced other surrounding farms to join the project and a proper school was built. The land and the school buildings still belong to the Trust, however, the school is now formally a Western Cape Department of Education school. Today De Rust Futura School has an Early Childhood Development crèche, Grade R to 12, as well as an aftercare centre. The school currently has more than 1000 learners. Each learner gets two meals (breakfast and lunch) per day, and learners that stay for aftercare also get an afternoon snack.

Around 95% of learners come from 58 surrounding farms with a few from local towns. The school has a strong focus on agricultural oriented subjects to help learners understand the environment they come from and to create future career possibilities in agriculture. More than 300 learners are presently focusing on agriculture and are for example learning how to establish and maintain an orchard, and how to grow vegetables, conventionally, as well as in tunnels. The curriculum also includes the establishment and management of a herd of Hereford cattle. All these agricultural practices are part of the Clüver's farming on De Rust Estate and many qualified learners return to De Rust Estate to work. The school also sells its fresh produce, which makes them more self-sufficient.



Left: The school has a "Pick it up" initiative where each class is allocated five minutes after each break time to pick up litter. Right: Music classes at De Rust Futura Academy. Photos: www.facebook.com/De-Rust-Futura-Academy

Environmental Initiatives

Paul Clüver strives to be a critical thinking company, using the latest technology available to ensure long term sustainability for future generations. For example, they have been using solar panels since 2015 to reduce their grid electricity consumption.

The family-run business is also very mindful of the environment, and they manage insects without pesticides where possible, using for example mating disruption for codling moth and bands for snout beetles. They were the first farm in South Africa to pilot Integrated Pest Management.

Around 60% of the 2400 hectare farm is under conservation. The estate forms part of a UNESCO World Heritage Site, the Kogelberg Biosphere Reserve, established in 1998. Within the greater Biosphere Reserve they have formed the Groenlandberg conservancy with their neighbours. Dr Clüver is a trustee of WWF and also sits on a lot of other green boards. Paul Clüver has been a WWF Conservation Champion since 2008 and are involved in various conservation initiatives in conjunction with WWF, CapeNature, Working for Water, and Working on Fire. They have done some work with the Table Mountain Fund, which is part of WWF, on alien clearing, and also experimental work on using fungi to breakdown the stumps that stay behind when alien trees have been cut down. Over the years the Clüvers have also enabled various research projects from PhD Students.



Natural fynbos flowers in De Rust's Nature Reserve. Photo: Carina Wessels

As part of Paul Clüver's rehabilitation of indigenous vegetation, over 800 endemic trees have been planted. They are actively involved in removing invasive alien plants and have created ecological corridors that run between the farm and the mountain. They have also built over 40 kilometres of singletrack for mountain biking in the Reserve, creating employment for many people in the process.



Entrance to De Rust Nature Reserve.
Photo: Carina Wessels

Sustainable Water Management

De Rust Estate is situated in a high rainfall area. Most of their water comes from three streams that run off the mountain that is part of the farm. They are in the fortunate position to be in control of the catchment area where the streams come from. They also get a small amount of water from the district scheme, from the Eikenhof dam, and one of Dr Clüver's daughters sits on the Groenland Irrigation Board.

Paul Clüver's farming practices focus on actively conserving the entire water catchment area. Some of the water management practices they apply include:

- Removing alien vegetation in the water catchment area. You get 30-40% more runoff from natural fynbos vegetation, with no alien vegetation present.
- Mulching with chipped aliens to reduce evaporation and improve soil quality.
- Using nets to reduce evaporation, with the added benefit of reducing sunburn and promoting colour development in fruit.
- Irrigating at night to reduce evaporation.
- Only plant vines and fruit trees most suited to the climate and soil. "We tried plums in the past and it did not work here because we do not have enough sunlight hours. You need to plant what works. Identify where the coolest areas on the farm are versus the warmest areas. You need to work with nature, not against it."



A mound of chipped alien vegetation to be used as mulch in the orchards. Photo: Carina Wessels



Left: Cover crops are grown in the orchards to promote biodiversity and grow organic matter for the trees. Right: Paul Clüver uses microjet irrigation and mulching as part of their water management strategy. Photos: Carina Wessels

The Clüvers make use of microjet irrigation in their orchards as this method of irrigation allow them to also irrigate their cover crops. Paul (Jnr) says that “if you just want to give water to the tree, then drip is probably better, but we water our cover crops too, in order to promote biodiversity in the orchard and grow organic matter for the tree. For this purpose, micro is better.”

Paul (Jnr) says that “water management is critical, trying to find that optimum amount of water to use. I don’t think the optimum is using less water per hectare, it should be the optimum amount of fruit produced per litre of water used.” According to Paul (Jnr), in their region, the average yield per hectare has gone up, without increasing water consumption. This is due to improved farming practices in general, such as tree quality and rootstock improvements, better trellising methods, not over irrigating, and the use of new technology.

The Clüvers also make use of the latest technology to ensure long term sustainable water use. Some practices include:

- Weather station data to predict and manage risks accordingly.
- Irrigation scheduling via computer system. This allow them to conserve water and energy.
- Monitoring soil moisture with probes.
- Drones, for precision agriculture and spatial mapping. Drones allow visual crop inspections from above and produce stress maps to highlight areas needing attention. It also now come with software packages to view and analyse the data.



One of many water holding dams on De Rust Estate. Photo: Carina Wessels

Paul Clüver also makes use of use of Fruitlook (<https://www.fruitlook.co.za/>) as part of their water management strategy. FruitLook is an online tool that helps producers to understand how their crops respond as part of the bigger water cycle of their region. This online tool can provide insights into water use on farms, helping producers to become more resource efficient. “FruitLook really helped us to determine areas that dried out rather quickly, areas which is the most suitable to place the probes.”

Climate Change Concerns

Paul Clüver is lucky to be situated in a high rainfall area, however, they will still manage their water carefully, not over extracting their resources, and clearing alien vegetation from the catchment. In terms of climate change, they are concerned about extreme weather events, increases in extreme heat days and getting enough cold in winter. Currently, nets cover only about 5% of Paul Clüver’s orchards, but putting up more nets to prevent sunburn and hail damage might become a reality in future.

Paul (Jnr) says that they have not started experimenting with lower chill cultivars as these apple varieties do not yet do as well commercially as the cultivars they currently grow. However, there is significant research being done within the Kromco Group for lower chill varieties that could potentially do well commercially.

Paul Clüver is 100% invested in regenerative agriculture and they believe that looking at soil as a growth medium, and following a more holistic approach, will ensure a healthy ecosystem that can buffer them against the worst effects of climate change. “The healthier the system, the better it will be able to absorb extreme weather events”, says Paul (Jnr).

“I think being more sustainable requires an attitude of sometimes admitting that you may have been wrong in the past and being willing to improve. We are going to make mistakes along our sustainability journey, but the intention will always be to do good.”
– Paul Clüver (Jnr)



Right: Harvest time. Photos: Paul Clüver