

Like much of the early infrastructure in Oudtshoorn, Kamanassie Dam has the ostrich feather industry to thank for its construction. Lani van Vuuren traces the history of this dam, one of the first large dams to be built in South Africa.

It might be known today as the ostrich capital of the world, but long before the domestication of the 'golden camel bird' Oudtshoorn was renowned, at least in South Africa, for its irrigation. The town originally grew around the Dutch Reformed Church established near the Grobbelaar's River in 1839 to serve farmers in the area. Almost a decade later a number of erven irrigated by furrows led from the river were surveyed and sold. It is thought that the town got its name from Geesje Ernestina Johanna van Oudtshoorn, wife of the first Civil Commissioner of George, Egbertus Bergh.

Like many towns in the Little Karoo the young Oudtshoorn struggled to thrive. In the 1860s drought threatened the existence of the town and drinking water had to be delivered to erfholders with carts. Then the drought was broken by floods that washed away large parts of town.

It was the domestication of the ostrich with the invention of the incubator that saved the town from ruin. Ostriches thrived at Oudtshoorn; the climate was dry and warm, the soil with its salt and

Kamanassie Dam



lime agreed with the birds and the well watered valleys were ideal for lucerne fields, which was introduced as a fodder crop by Oudtshoorn magistrate Mr Scholtz. He imported the seeds and planted a small plot to feed his ostriches.

The birds thrived on this diet and soon all the farmers started planting lucerne followed by the construction of irrigation schemes to water ever greater fields of crops. In 1875, the district possessed only about 2 160 ostriches, by 1893 this figure had risen to 27 000.

LEADING THE WAY

The Oudtshoorn district was reportedly streaks ahead of other areas in South Africa as far as irrigation was concerned. In his 1901 report on irrigation possibilities in South Africa, William Willcocks describes Oudtshoorn as the Cape's "Garden". At that stage, at least 971 ha of land was being cultivated with

water from the Grobbelaars River. Most irrigation was done through diversion weirs. In addition to lucerne, farmers in the area produced tobacco, potatoes, with orange groves, vineyards and fruit gardens in abundance.

While the ostrich feather sector grew, the need for water deepened. When the Cape Colony's neighbours were preparing to engage in a destructive war with England, the southern colony experienced one of the greatest periods of affluence in its known history. Next to gold, diamonds and wool, ostrich feathers became the Cape's largest export product.

By the end of the century nearly 500 000 pounds of ostrich feathers were exported a year. But there was no abundance of water in the Little Karoo. The year 1896 was one of the driest on record and, by 1899, the Oudtshoorn municipality had to collect water from 18 km away. This water was sold to residents at over sixpence a bucket. To alleviate





Kamanassie, proposed an irrigation dam to be constructed on the Kamanassie River, a tributary of the Olifants River. But while the ostrich palaces were being constructed in town nothing came of the idea.

DAM PLANS REVIVED

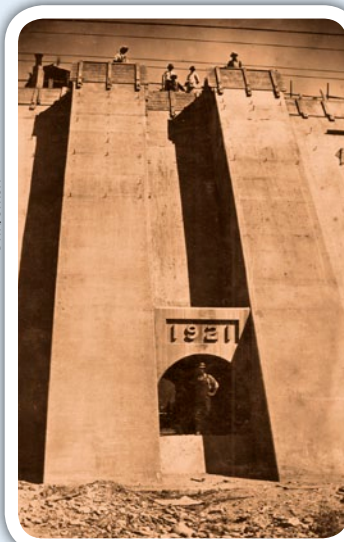
In 1913 the ostrich feather industry reached its climax only to be followed by a complete collapse of the sector with the outbreak of the First World War. Farmers who had pulled out their tobacco crops and orange trees to make room for ostriches now had to return to their crops. With the emphasis on lucerne the need for

irrigation had become more apparent, and so the Kamanassie irrigation scheme was again revived.

In 1916 an irrigation district was established and the Irrigation Department was approached with the view of preparing a suitable irrigation scheme. The irrigation board subsequently accepted the project proposed by the department and FT Patterson was appointed Resident Engineer to carry out the work with a loan granted by Parliament.

Construction of Kamanassie Dam only started in June 1919 as the First World War curbed the Irrigation Department's spending tremendously. Work on the canals was carried out simultaneously. The design called for a mass concrete gravity section dam with a crest height of 44 m above deepest foundation and 35 m above riverbed. The dam wall was to be 386 m long. The main spillway was to be on the right flank and 91 m wide with a waste weir wall 183 m long. An emergency spillway was to be constructed on the right flank. This spillway was to be 91 m long and was to discharge into a channel 46 m wide.

Patterson worked according to a strict programme that called for the storage of water to start by December, 1921. Work and finance were controlled from a central



Above: A close-up photograph of the Kamanassie Dam wall, taken in 1936.

Top right: The Kamanassie Dam shortly after its completion.

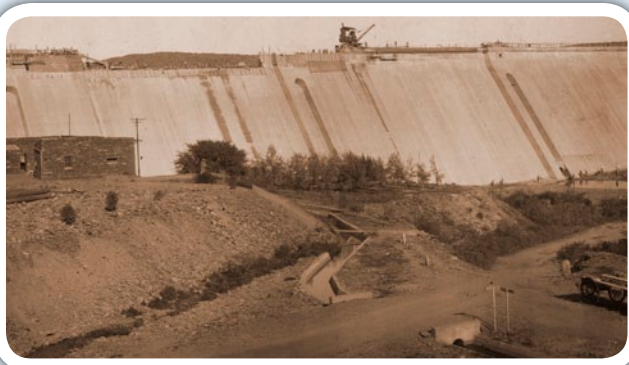
Bottom right: Kamanassie Dam as seen from the air.



the problem Danie Nel, owner of the farm *Rust-en-Vrede* was persuaded to sell his water rights and work immediately began to pipe water to town.

When there was water scarcity conflict followed. Such a situation was uncovered by Cape Hydraulic Engineer John Gamble when he visited Oudtshoorn in 1877. At that time the town was dependent on water supply taken directly from the Grobbelaar's River, led in furrows and shared by about 300 erfholders. Each erfholder was entitled to 12 hours of water a week. Gamble wrote in a report to government: "There is a great deal of fighting, those who have not time to look after the water-leading frequently give up what is an unequal contest with others who have time to watch the sluits, and see that they get their due share of water."

It was during this time that the first serious proposal was made to construct a storage dam on one of the rivers outside Oudtshoorn. ETL Edmeades, owner of the farm



Above left and right: Kamanassie Dam at an advanced stage of construction. Note the use of donkey carts and cocopans.

OSTRICH FARMING AND IRRIGATION SCHEMES

While cooperative irrigation settlement failed to take off in the nineteenth century something else did which forever changed the face of South African agriculture and lead directly to the construction of the first large dams in the country – the ostrich feather industry.

It is thought that as early as the eighteenth century farmers caught ostrich chicks in the wild and reared them as pets. However, before the domestication of ostriches between 1857 and 1864 the only way to the birds' plumes was to kill them and pluck the carcasses, and thousands of ostriches were hunted down at the start of the ostrich feather trade. In fact, in many areas the species was almost totally eradicated prior to its eventual domestication. In South Africa this destruction was checked to some extent by the passing of a special law for the preservation of wild ostriches in the Cape Colony in 1870.

Several farmers in the Karoo and Eastern Cape succeeded more or less simultaneously in breeding and rearing ostriches from the 1860s. The development of the incubator allowed the sector to grow in leaps and bounds, and soon everyone was keeping at least one ostrich in their backyard. This can clearly be seen in the increase in numbers of tamed birds and sale of ostrich feathers. The total weight of feathers exported from the Cape in 1865 was 17 522 pounds, which came mainly from wild birds, the 80 tame birds supplying only 120 pounds. Ten years later there were more than 32 000 tame ostriches in the colony. By 1895, this figure had grown to 253 000.

Effective selection and clever cross-breeding improved the quality of South African ostrich feathers until plumes from the tip of Africa became the most sought after in the world. By 1880, Cape feathers were sold at an average price of £5,8 per pound, chicks at £10 to £16, breeding pairs at £200 and exceptional birds at £1 000 each. More than 3 600 pounds of feathers were exported from the Cape in that year. Next to gold, diamonds and wool,



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ostrich feathers became the colony's largest export producer. By 1910, there were 800 000 tame ostriches in South Africa.

Farming with ostriches became extremely popular not only because it was so profitable but because it was so much easier than other agricultural pursuits. It required comparatively little capital and less work and stock increased

fast with the aid of artificial incubation. An average ostrich farm could also be managed well with few labourers.

Ostriches were difficult to herd and it was more efficient to enclose flocks in a paddock and provide them with fodder. And so ostrich farming introduced a new crop to the country – lucerne. Introduced to the Cape in the 1870s by Oudtshoorn magistrate Mr Scholtz to feed his ostriches, it is this crop that greatly boosted irrigation and the development of dams in the country. By 1907, a lucerne farmer earned £9 to £20 per acre a year (based on sales of baled lucerne hay). If he did not bale it, but used it on his farm for feeding stock (not only ostriches), his profits were even greater. With such returns, farmers, especially in the Karoo and Eastern Cape, were encouraged to lay out capital on irrigation works and lay their hands on lucerne. Lucerne gave a higher yield and protein content than grain crops grown for fodder. Once established, it was a perennial crop, so that annual sowings were unnecessary. In fact, in regions such as Oudtshoorn, one planting could last for more than seven years. No wonder then that early farmers dubbed lucerne 'a miracle crop'. By 1920, South Africa produced more than 83 000 tons of lucerne a year.

The ostrich feather sector peaked in 1913, resulting in the export of a million pounds of plumes at £3-million. Then the First World War broke out and ships exchanged their loads of feathers for guns and soldiers. The market slumped, then crashed completely. Farmers chased their flocks into the veld and turned back to conventional crops, now boosted by the development of irrigation infrastructure.



Left: Construction at the Kamanassie site progressed according to a strict programme set up by the Resident Engineer. Due to the inaccessibility of plant, mostly second-hand machinery was used.

Far left: Machinery used to crush rock for the Kamanassie Dam.

CP Nel Museum

office at the Kamanassie Dam and sub-offices on the canals. The work schedule was set down in detail in a diagram, a copy of which was supplied to each member of staff so that responsibility and control could be clearly defined. It is interesting to note that CJ Langenhoven, author of *Die Stem*, acted as legal advisor to the Kamanassie Irrigation Board (he set up practice as an attorney in Oudtshoorn in 1902), while famed water engineer Ninham Shand was Assistant Engineer on the project.

SEPARATION OF CLASS AND RACE

As was the norm at the time, two separate labour camps were constructed. The white labour camp was constructed on the one side of the river, while the black labour camp was constructed on the other. All the houses in the white village had 457-mm masonry walls, however, while single men's, married gangers' and some of the artisans' quarters had flat roofs, the first class artisans', foremen and staff quarters all had pitched roofs with porches. On the other hand, the black labour camp comprised 24 *rondawels* (traditional thatched round huts), also with 457 mm-thick walls, 5,5 m in diameter and 2,4 m high to the eaves.

The white labour camp also featured a school, a combined mess hall and recreation room and sports facilities, such as a tennis court and a rifle range. There were no such amenities available at the black labour camp. Black labourers were

very rarely allowed to bring their families with them on site, as was usually the case with white labourers. Apart from the conventional recreation and educational facilities, there was also a post office. At the height of construction there were 1 800 men working on the scheme.

SECOND-HAND MACHINERY

The board capped plant expenditure at £25 000. As construction was started at a time when it was impossible to obtain machinery from either Europe or America promptly and at reasonable prices the irrigation board decided to purchase second-hand engines and machinery and only import what could not be located in South Africa. This included concrete mixers and an air compressor. A three-ton capacity, 335 m-span cableway was obtained from Calitzdorp Dam (which had just been completed), together with a 40 HP suction gas engine, a few small crushers and other odd plant. In addition, three five-ton locomotive cranes were required from a mine in Johannesburg.

While all the machinery was finding its way to site, workers set about throwing an earthen coffer dam around the right half of the foundation on the riverbed. Excavation for the foundations was done entirely by hand. Interestingly, it was decided that all staff appointments should be advertised. There were 15 staff members in all. All white employees were to be recruited from the Oudtshoorn district and housing

was provided for 30 single men and 30 families. Unskilled (black) labour was recruited from the Eastern Cape.

By the end of November, 1919, 43 580 m³ of concrete had been placed in the dam and earthworks of 48 km of canals had been completed. And on 6 May 1920, the first concrete was poured for the dam wall. The event was marked by a ceremony in which all staff and children attending the works school dropped small stone 'plums' into the first concrete placed in the foundation. Despite the good start the rate of construction was hampered severely by the curtailment of funds, and in the end the project was only completed towards the end of 1925. □

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- Thanks to CP Nel Museum in Oudtshoorn and eWISA for photographs