

# Set your sights on better WATER AND WASTE WATER MANAGEMENT

by **Sue Viljoen**

Photographs by Sue Viljoen.

The fourth water stewardship working group field visits took place in KwaZulu-Natal in November 2019 at three venues. The working group, currently facilitated by the World Wide Fund for Nature (WWF), is an informal learning platform made up of farmers, processors, and dairy industry structure representatives, who get together two or three times a year to share information on water, waste, and natural resource management practices in a non-competitive, safe space.



From left: Gary Farr (RAS), Henk van der Hyde (Danone), Sue Viljoen (WWF), Gary Smith (Nestlé), Vaughan Koopman (Danone), Murray Bredin (Shockwave Engineering), Francois Talbot (FBF Organics), Mark Davies (Spring Meadow), John Bredin (Myhill Farm), and Andrew Baker (Glen King Trust).

## EFFLUENT TREATMENT

Spring Meadow Dairy gave us an insight into the advances they have made with the on-site treatment of the waste water from the facility, generated from producing 200–230 tonnes per day of fresh milk, yoghurt, and juices. This Midlands dairy, situated on a beef farm near

Nottingham Road, formerly known as Honeydew Dairy, re-launched with the new Spring Meadow brand in 2017 after some changes in ownership. Treating factory effluent is a much harder task when the factory is not situated in a municipal area and effluent cannot be discharged to sewer.

Instead, the effluent passes through a system of three anaerobic ponds, currently being expanded to six ponds, which have been professionally designed to ensure adequate retention time to reduce the chemical oxygen demand (COD) levels and other parameters to acceptable limits. Following close monthly monitoring and analysis by Francois Talbot, a waste water specialist from FBF Organics, an 87% reduction in COD has been achieved across four ponds so far. This reduction is achieved through good management, appropriate design, and the application of

the FBF Organics Bio-Activator. Henk van der Hyde from Danone remarked, “Spring Meadow has been a co-packer to Danone SA for many years, and due to their willingness to work with us in terms of food safety we have received a global I-Care award (an internal quality award) for our collaboration. Visiting the facility myself for the first time, I can see why working with Spring Meadow has been so successful. I was very impressed with their water and waste water management on site, plus the cutting edge and simple approach to these topics.”

Slurry dam levels at Myhill farm are remotely monitored and controlled.



### EFFLUENT TO PROFIT

Gary Farr from Regenerative Agriculture Specialisation ([rasbio.co.za](http://rasbio.co.za)) gave a presentation on converting a grudge buy (effluent treatment) into a profit with the aid of a biocatalyst that they market. A biocatalyst can more than double the effective capacity of effluent treatment ponds or slurry ponds by minimising solids, while eliminating odours. Livestock trials where the biocatalyst is fed directly to the animal through

feed or drinking water instead of treating effluent were discussed. The effluent ponds improved as before, but so did animal performance, thereby creating profit-generating potential.

In a piggery trial, animal performance improved by 3–10% due to improved feed conversion and rate of gain. Animal health also improved, resulting in a reduction in medications (30–60%) and lower mortality

or illness. Biocatalysts work by accelerating biological activity by breaking down biological toxins, thereby allowing beneficial microbes to flourish. The product is produced by means

of on-site biological fermentation and is being used by Sandra Berning and James Kean, winner and runner-up, respectively, of the 2019 MPO Nedbank Stewardship Awards.

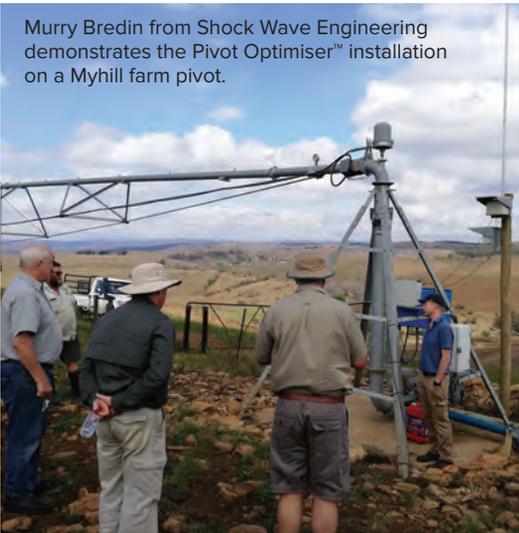
## SAVING WATER AND ENERGY

The following day, the working group and some local farmers were hosted by John Bredin on his farm Myhill near Ixopo, to look at the water- and energy-saving technologies and automation options that have been installed there by Shock Wave Engineering ([shockwaveengineering.co.za](http://shockwaveengineering.co.za)). The changes included matching pumps and motors to the required duty, altering the transfer route of water, replacing draglines with pods, removing end guns, continuously controlling pressures, and automating the system. The control and automation were achieved using the Pivot Optimiser™, which monitors and controls the pivot centre and end pressures and continuously adjusts the pump pressure using a variable speed drive. The changes allowed Bredin to increase the area irrigated by 30% using the same limited water

supply, and reduce the energy consumption of the existing pumps by 67%. The Pivot Optimiser™ also automates pumps and valves, reducing management time spent on routine tasks.

Bredin shared his feedback from his trip to New Zealand in February 2019, his prize for winning the 2018 Intelact Water Stewardship Award. Based on how negatively dairy is now regarded in New Zealand on account of river pollution issues, his take-home message was that the South African dairy industry urgently needed to improve self-regulation of water resources – rather than leaving this in the hands of enforcement authorities. This highlights the need for platforms such as the water stewardship working group to strengthen learning, information sharing, and self-regulation. 

Murry Bredin from Shock Wave Engineering demonstrates the Pivot Optimiser™ installation on a Myhill farm pivot.



Working group discussions, Spring Meadow board room.

If you would like to be added to the mailing list for future working group events, please contact **SUE VILJOEN** at [sviljoen@wwf.org.za](mailto:sviljoen@wwf.org.za). To read the Afrikaans article or access the presentations referred to in this article, scan the QR-code.

