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ZAMBIA

Landscaping the future with Irritech and Valley



by **Benine Ackermann**

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On the eastern side of the Mkushi Farming Block, the whole landscape has undergone a marked change, opening the door to growth and a huge increase in food production. Fifteen Valley pivots are already supplying water to crops on the Kakushi farm as part of this development.

With the support of Silverlands Agricultural Services Limited (SASL), a Zambian agricultural development company, an earth dam with an 11,8 million m³ water storage capacity was constructed on the Kakushi River which flows through the farm.

Phase one of the development (826 hectares) was completed late last year when the first summer soy bean crop was established with the assistance of the newly installed Valley pivot irrigation system supplied by Zambian based Irritech. Farm Manager, Niel Conradie, says Valley was the pivot of choice due to their history of reliability and quality products. Valley offers flexibility in their irrigation package design and makes provision for remote automation in the future. "It is a popular pivot in the region, with a reliable after sales and back-up service," says Niel.

The local Valley partner is Irritech Zambia. Niel says the design criteria in their tender exceeded requirements requested in the tender specifications. He says the people from Irritech were efficient and dedicated to their well-planned installation programme. "During the installation phase, they maintained good communication with us. Due to the scale of the project and the time frame in which to complete the project, Irritech encountered a few challenges which were met with urgency and professionalism."

Even with the water supply from the dam, it is a priority for Silverlands not to waste water in a country that has its share of droughts. Another priority is to use electricity as efficiently as possible. To attain both goals, it was decided to install Variable Speed Drives (VSD) on all the irrigation pumps supplying the water directly from the dam to all the different pivots.

This device allows for operational protection parameters to be set in relation to power supply, high and low voltage periods, water pressure, water requirements and demands (start up and shut down of pivots), and pump speeds. It allows pump motors to start up slowly, eliminating high power demand peaks during start-ups, and it also regulates the speed of the pumps according to the water demand dictated by the number of pivots in operation.

It regulates the number of pumps in operation in relation to the number of pivots in operation through water pressure. For example if four pumps are running to supply five pivots and one pivot is turned off, the VSD will sense the increase in water pressure in the system and will close down one pump or reduce the speed of the

pumps thus demanding less power whilst maintaining a constant water pressure to the remaining pivots in operation.

One pivot has been installed with Valley's automation system as a trial. This means the pivot can be remotely activated using a smart phone or computer. Niel says: "This will also give us the capability to monitor the pivot during operation, it will indicate the pivot speed, how much water we are applying, water pressures, direction of travel, time turned on, and estimated time of completing a cycle, to name but a few of the functions available on this programme. If this trial is successful, we will automate the entire system as we make progress with the development."

Meanwhile, the soy beans look promising and Niel expects a yield of between 2,8 and 4 tonnes/ha, with the majority of the fields being virgin land. Wheat will be planted once the soy beans have been harvested. Niel describes the after-sales service of Irritech and Valley as excellent. He is looking forward to the winter planting season, using water from a completely filled-up dam: "With the knowledge of a reliable quality Valley product and a well-designed irrigation scheme, coupled with a good product service back-up in the form of Irritech, we are confident that we will have a successful winter irrigation season."

Contact Ross O'Donoghue at Irritech on +26(0)97-125-2016, 079- 691-9623 or ross@irritechsa.co.za for your irrigation solution, or visit www.irritechsa.co.za.

Feature Photo: Mark James, Silverlands



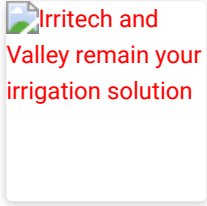
Niel Conradie, Farm Manager, expects a soy bean yield of between 2,8 and 4 t/ha from their first planting season. The double row of sprinklers is known as a boomback and

allows for low pressure sprinklers to be used to prevent run-off of water on heavy soils.

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