



Zambia Dairy Transformation Programme

SEPTEMBER 2020 NEWSLETTER



Welcome to the latest edition of our monthly newsletter, which summarises activities carried out under the Zambia Dairy Transformation Programme (ZDTP) in September 2020.

Left: Fisenge farmer Berringtone Musonda features in the ZDTP's latest video about the benefits of silage for milk production. Check it out at <https://vimeo.com/470914717>.

Start preparing for the dry season

We continue to encourage farmers to plan now for their herd's feed requirements during the drier months of 2021. Our extension staff are encouraging farmers to plant fodder crops as soon as there is sufficient moisture content in the soil for harvesting in the New Year and using to prepare silage, which can be fed to animals during the dry season. Check out our latest video about how feeding silage to dairy animals has helped farmers reduce their on-farm costs and support optimal milk production here: <https://vimeo.com/470914717>. Fact sheets are also available at www.zambiadairy.com. Specific ones of interest include silage production (F01) and planting sunflowers (F02A) and soya beans (F02AB), both of which can be used to make a Dairy19 substitute.

Engagement within the Zambian dairy sector continues to keep us busy as we not only work alongside our partners to implement ZDTP activities but also as we share information and lessons learned with other industry stakeholders. In this issue, as well as future ones, we'll be asking different organisations to share more about what they do. This month we have articles highlighting the work of the Zambia Bureau of Standards (ZABS) and EcoGas Zambia. Please get in touch if you'd like your organisation or work to be featured in a future edition.

Empowering youth in Luanshya

A group aimed at improving farming practices amongst youth in Luanshya is going from strength to strength following its formation a year ago. Grafali Youth Group was established in October 2019, under the umbrella of the Fisenge Dairy Business Cooperative Union. Charles Zimba, the ZDTP's Business Support Officer for the Copperbelt, has been supporting the group since its inception. This has included helping the group develop a forage chopper business, using a chopper donated by the Dairy Association of Zambia, to generate income for its 36 members. "They provide a service to cut forage and contribute to farmers having enough feed for animals during both the dry and rain seasons," Charles says. "They have been helped by ZDTP Extension Officer Wesley Chilambe, who has been linking them to farmers that need a chopper service and providing support and advice on the efficient running, repair and maintenance of the machine." Charles says the Grafali Youth Group is using money from the chopper service to invest in a village chicken 'pass on' programme and also cultivating maize and soya beans. He has helped the group to develop 'SMART' (specific, measurable, attainable, relevant and time-bound) objectives, leading up to December 2020, and has also been coaching its members on governance and leadership, as well as the importance of good record keeping i.e. filing, taking minutes at meetings and using a receipt book. "The group has money in the bank, which it can use to invest in the development of its business." Charles says it is important to have young people involved in the Zambian dairy industry because they have the energy to work, good ideas and are open to new innovations. "They are the future of tomorrow."



Above: Members of the Grafali Youth Group recording the number of hours they have worked in the field on behalf of the group's chopper business.

Biogas - turning waste into fuel

Arriving at Thulani Farms, you are greeted by a large black, bloated plastic bag in the backyard. Upon closer inspection, the bag seems to be filled with air and has a pipe connected to one end. The other end of the pipe leads into the farm's kitchen, where workers and their families use biogas to prepare meals.

Biogas is a clean and smokeless form of energy generated by a digestion process from anaerobic bacteria. EcoGas Zambia is promoting its use in rural areas suffering from regular power shortages and Thulani Farms is one of its demonstration farms, in partnership with the Dairy Association of Zambia. The company has also held demonstrations in Lusaka, Mapepe, Mazabuka, Kabwe, Mbala, Ndola and Mkushi. The use of biogas is expected to increase significantly in Zambia in the next 10 years, especially in dairy producing areas.



Above: A biodigester, filled with gas on the top layer, ready for use at Thulani Farms.



ECOGAS ZAMBIA
Today's Waste is Tomorrow's Energy

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Below: Pamela and Makabaniso Ndhlovu in their kitchen with a new gas stove. Thulani Farms is located 45 kilometres from Lusaka, in Palabana, Chongwe district. "We have created a kitchen at our farm where our four farm workers' households come to cook."



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EcoGas Zambia Director Leandro Oryejovsky says the aim of the demonstration farm at Thulani Farms is to showcase benefits such as daily supplies of cooking gas and liquid fertiliser. Makabaniso and Pamela say they have stopped collecting firewood and cutting trees for charcoal since implementing their biogas system.

"Before, we used to require a lot of firewood and charcoal which was costly and dangerous for our health," Pamela says. "Now we have a clean energy source which is also helping us preserve our trees."

With the EcoGas system, fresh cow dung gets added to an airtight, black material 'tent' and then mixed with water in a one to one ratio. After about 21 days of natural reactions, methane gas is generated along with other gases like sulphur. The gas is then ready to be used for cooking or heating purposes. The bio-slurry from the anaerobic reaction can also be pushed out through a pipe and used as a high-quality, organic fertiliser.

Pamala says the biodigester on their farm produces enough gas to cook non-stop for more than five hours every day. She and her husband also collect about 60 litres of bio-slurry from the system each day, which is helping them grow more vegetables and reducing their reliance on expensive commercial fertiliser.

Leandro says there are multiple innovative features in the biodigester, "starting with the fact that it works at low pressure, contradictory to the high-pressure gas generation a conventional system demands".



Above: EcoGas director, Leandro, showing farmers how the biodigester operates at Thulani Farms. The biodigester is highly portable and durable. "The material used has been tested in the harsh desert climate in Israel – and we can guarantee the quality for 10 years." For further details about EcoGas Zambia, contact Leandro on 096-8995559 or Natasha on 097-5305999.

Spotlight on the Zambia Bureau of Standards

Established by an Act of Parliament in 1982, the Zambia Bureau of Standards (ZABS) is an organisation of national importance serving Zambia in the field of standardisation and quality assurance. Its head office is located at Lechwe House in Lusaka and it has regional offices in Chipata and Mongu. ZABS' main functions include facilitating the development of standards, through working with technical committees comprising stakeholders such as manufacturers, suppliers, consumer groups, regulators and academics, as well as training, testing and certification activities.

The organisation's main roles in the dairy sector can be summarised as follows;

- Preparing dairy and dairy product standards and promoting their application;
- Making arrangements, or providing facilities, for the examination and testing of commodities, materials and substances from which commodities may be manufactured, processed, treated or finished that are related dairy and dairy products;
- Providing quality control and quality assurance schemes for commodities in order to promote and improve trade in the dairy sector value chain; and
- Providing training and consultancy in standardisation, quality management and quality assurance to the dairy sub sector.

For example, ZABS imparts knowledge in standardisation and quality assurance to stakeholders in the dairy industry and sub sector value chain to contribute to the quality and safety of dairy products. It also provides training on standards on milk specifications, hygiene, handling, labelling and packaging.

ZABS is also able to test raw and semi-processed materials, as well as finished products, using internationally recognised laboratory methods. This helps assess the conformity of materials and/or products to the minimum requirements of set standards as well as good manufacturing practices.

The standards that support the dairy sector value chain in Zambia are:

- ZS 730: Specifications for raw milk
- ZS 732: Specifications for pasteurised milk
- ZS 735: Specifications for UHT milk
- ZS 731: Specifications for yogurt
- ZS 734: Specifications for dairy ice and dairy ice cream
- ZS 033: Labelling of pre-packaged foods
- ZS 897: Specifications for milk cans

Products that have passed certain standards through a thorough audit of production process, including testing, are issued with a quality mark which references the number of the particular standard.

The benefits of implementing standards include protecting consumers from hazards to their health and safety, inspiring trust and consumer confidence in one's business, creating a competitive advantage by improving the quality of goods and services and providing access to new markets.

It is important for dairy sector stakeholders, such as farmer cooperatives, to contribute to the standards development process and get involved in testing and certification processes.

This will not only help them address quality issues but also give consumers confidence in relation to the safety of their products.



Above: A staff member at ZABS testing products. ZABS is a member of several regional and international standards development organisations such as the International Standards Organisation and the African Organisation for Standardisation.

Collaboration between dairy industry stakeholders continues in Mumbwa District

Following our story on Mumbwa in the June 2020 newsletter, the ZDTP's Field Extension Manager Kelvin Mulusa visited the district to meet with the Mumbwa Dairy Cooperative and find out more about its members' needs.

The cooperative asked for training and advice on how to keep dairy animals as some of its members are awaiting the arrival of 30 dairy cross animals purchased through a grant from the Zambia Agribusiness and Trade Project (ZATP).

Kelvin then returned to Mumbwa a second time and conducted training with farmers in line to receive animals. He shared copies of ZDTP fact sheets and past newsletters, as well as details of the programme's Real-Time Monitoring (RTM) initiative and WhatsApp groups.

"The animals purchased are cross breeds and the board will put in place the 'pass on a cow model' so that other farmers can benefit too," Kelvin says. "Artificial Insemination will be used for the next pregnancies to ensure controlled breeding."

Mumbwa Dairy Cooperative was formed in 2018 with support from the Ministry of Fisheries and Livestock (MFL) and its membership comprises about 80 farmers.

The cooperative runs two Milk Collection Centres (MCCs) – Senzo and Sempe.

Sempe is tracking well, with the number of smallholder farmers delivering milk there steadily increasing. Senzo is receiving only small amounts of milk.

Kelvin says the farmers who supply Senzo and Sempe are keen to learn as much as possible and are "overwhelmed" by the ZDTP's support.

The challenges they face include the long distances to their MCCs (the furthest farmer is about 30 kilometres away from an MCC and the average distance is 17km) and low milk volumes due to the use of local breeds milked for only six months at a time rather than year-round. There is also a lack of suitable milk testing procedures in place, something ZDTP Milk Quality Specialist Friday Sampa is now helping to address.

"Training is needed because many farmers in the district are new to dairy farming and farm workers are equally unknowledgeable," says Kelvin.

ZDTP Programme Country Manager Tania Thomson says both the ZATP and ZDTP are administered by Swedish firm NIRAS International Development, "so it's great to see a collaboration like this ensuring that donor funds go even further".

ZDTP Programme Country Manager
Tania Thomson



"Although our main support is targeted to six cooperatives and farmers who have been in the dairy industry for a while, we've always had a focus on sharing with others across the dairy industry. So, it was a great opportunity for us when we were contacted by the MFL Livestock Officer in Mumbwa to support him to provide training and advice to farmers who are new to dairy. It's one thing to look after a traditional or beef type animal, but another to care for a dairy cow and support her to optimise her lifetime milk production and thus income to a farmer. All too often we have seen donated animals not able to reach their full potential due to lack of farm resources or farmer capacity. Discussions with the ZATP team on ways to mitigate this resulted in us setting up a WhatsApp group for recipients of ZATP dairy animals so they are able to ask questions and get advice. As a programme, careful budget management and skilled and organised staff mean that we are able to provide support to the Mumbwa farmers within our current programme. The organisation and commitment of the Mumbwa farmers and the local MFL team are also a big help and mean that we are able to co-fund (with them) two demonstration plot sites where we'll showcase a number of crops from 'seed to feed'"

The ZDTP is focused on supporting dairy farmers to improve their productivity, milk quality and linkages to urban markets. The views expressed in this publication are those of the implementers of the programme and do not necessarily reflect those of the New Zealand Government. For further information, please contact ZDTP Country Manager Tania Thomson on tania@primeconsultants.net or +260 96 456 4206.