

Zambia Dairy

produced by the

ZAMBIA DAIRY TRANSFORMATION PROGRAMME (ZDTP)

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More milk, more money: community-funded Extension Officer model a game-changer for dairy farming cooperatives

A new way of providing extension services to dairy farmers in Zambia has proven so successful, the ZDTP is hoping it will be replicated across the country.

Trialled by three dairy cooperative unions between December 2022 and March 2023, the innovative extension services model involves cooperatives recruiting and paying for private Extension Officers (EOs) from their own communities rather than relying solely on extension support from the Government or NGOs.

EOs are agricultural professionals who are knowledgeable in good farming practices and advise farmers on how to maximise yields and profits through better production. For the pilot schemes, undertaken in Central Province (Liteta), Southern Province (Mungaila) and the Copperbelt (Kwanshama), the cooperatives recruited and paid a private EO for a set period while the ZDTP provided a motorbike and covered fuel and running/maintenance costs. During this time, the new extension services delivery model had to prove itself, said ZDTP Programme Country Manager Marnix Sanderse.

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L-R: Ignatius Zulu, the Extension Officer for the Liteta trial, with Liteta Dairy Cooperative Union members Mangwale Albelino and Gravity Hamweenda. Image by Taabo Muyunda.

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“With our start-up support, the return on investment quickly materialised through increased milk volumes and improved milk quality for all three cooperatives,” said Mr Sanderse.

A review of the pilot at Liteta, for example, revealed a difference in the collective milk output of 11,000 litres versus 7,000 litres in the same period last year. The incidence of mastitis also went down. Zammilk, the private offtaker for the Liteta Dairy Cooperative Union, also confirmed that its figures indicated higher volumes of milk, less milk rejections and “consistent improved milk quality”.

Ignatius Zulu, the EO for the Liteta trial, and a dairy farmer himself, said a big focus of his effort was helping farmers develop a learning mindset because farmers needed to have the right attitude before they could learn and apply new skills. Mr Zulu said he believed the pilot scheme’s success proved there was power in collaboration at a grassroots level.

“Working with other members in the community is the best decision any farmer can make,” Mr Zulu said, “because when ideas, resources and efforts are put together, it is easier for each member to succeed [and] this creates a positive ripple effect”. Mungaila Dairy Cooperative Society Ltd in Namwala, Southern Province, also benefitted from the trial, recording its second highest milk volume ever collected in January 2023. This was a 262 per cent increase in milk collected between the same period last year, said ZDTP Market Systems Officer Mambwe Kaluba. Overall, farmers welcomed the initiative and believed it would be sustainable long term, said Mr Kaluba. “Additional milk volumes translated into more revenue for Mungaila cooperative, far exceeding the costs associated with providing extension services.”

Mr Sanderse said the ZDTP would like to see the successful extension model replicated by other smallholder dairy cooperatives across Zambia. “We are happy to share detailed data and lessons learned from the pilot schemes with any interested parties,” he said. “Start-up support could be provided by other dairy programmes or by those with private sector interests such as processors.”

Funded by the New Zealand Government, the ZDTP has been working with smallholder farmers in Central Province and the Copperbelt to improve dairy production since 2017.

After a two-year extension in 2021, it also started working in Southern Province.

“Our aim has always been to give smallholder dairy farmers the knowledge and tools they need to make more money from their farming businesses,” said Mr Sanderse.

“As the programme winds down, we are strongly focused on embedding best practices and sustainable business models into the wider dairy industry.”



Kelvin Mulusa, Field Extension Manager for the ZDTP (pictured above right), said farmer-led and farmer-owned extension services were needed in Zambia because the current ratio of EOs to farmers was too large to manage. “Where extension services are currently available, logistical challenges such as lack of transport, fuel and training materials hinder their delivery,” he said. “With the ZDTP’s new model, the EO caters for a specific cooperative, with the sole focus on the dairy value chain rather than all farming disciplines. As a result of improved milk sales, cooperatives can provide better services to farmers, such as providing them with well-priced farming inputs, which reduces the need for them to use high-interest loans.” With extra income from better milk volumes, cooperatives could also recruit additional extension officers to widen the outreach and increase the frequency of extension services delivery to more members, said Mr Mulusa.

ZDTP staff and farmers appear on national TV



ZDTP Field Extension Manager Kelvin Mulusa being interviewed by NAIS journalists.

News segments from the National Agricultural Information Services (NAIS) appeared on national television in February and March and are now live to view on the Zambia Dairy channel on YouTube (<https://www.youtube.com/@zambiadairy>). The reports were compiled after the ZDTP hosted NAIS in the Copperbelt and Central Province in January 2023. NAIS is a specialised wing of the Ministry of Fisheries and Livestock (MFL) that disseminates agricultural information via printed media, television and radio channels. In January 2023, NAIS reporters visited smallholder farms participating in the ZDTP and documented new farming practices. Martha Mvula, Assistant Photographer for NAIS, said: "The first story aired on the 17th of February on various TV stations.

The second story aired on the 9th of March. Both stories aired on Muvi TV, ZNBC TV2, ABN on NAIS News and Prime TV. We also produced a radio program which aired on Lima Radio. I went as Assistant Photographer [with] my colleague Victor Chabinga – TV Producer. The visit exposed us to the success stories of women engaged in the domain that was a preserve of men in the past. It also gave us an insight into the great work [the ZDTP] has been doing on the ground."

IN BRIEF

New Zealand Deputy High Commissioner hears from ZDTP participants

We had the privilege of hosting New Zealand Deputy High Commissioner to Zambia Rebecca Williams in Lusaka and Chibombo on April 27, 2023.

While visiting with members of Liteta Dairy Cooperative Union, Ms Williams learnt of its recent success in achieving higher milk volumes and Grade A milk as a result of its extension pilot (see page 1). Ms Williams also attended the ZDTP Programme Steering Committee, chaired by the Permanent Secretary of the Ministry of Fisheries and Livestock.

Dairy cooperatives to screen training videos

Dairy farmers in Southern Province will soon be able to view instructional videos at their local dairy cooperative union headquarters. This is after GIZ decided to provide the cooperatives with projector kits to broadcast open-source videos from Access Agriculture. ZDTP training videos currently online at www.youtube.com/@zambiadairy will also be available to view. ZDTP Programme Country Manager Marnix Sanderse said he hoped the videos would provoke discussions amongst members and opportunities for further learning.

ZDTP stand at AgriTech Expo met with enthusiasm and curiosity

ZDTP exhibited at AgriTech Expo Zambia in Lusaka from April 20-22. The expo brought together hundreds of professionals and exhibitors from across the agricultural sector. ZDTP Communications Advisor Taabo Muyunda said it provided a fantastic opportunity to share ZDTP factsheets with interested farmers and connect them with networks that would aid them in progressing their dairy businesses. "The turnout was bigger than expected and there was a lot of enthusiasm and curiosity," said Ms Muyunda.

Making and storing hay

Hay is a good source of roughage for cattle and if made and stored correctly, can be a good source of nutrients. It is good to make your own hay because doing so is cheaper than buying it and purchased hay may bring diseases onto your farm.

Hay can be made from natural and cultivated pastures. It is best to choose pastures that are palatable and have a high leaf to stem ratio. Good options are giant star grass and common thatching grass.

As the rain season ends, there is an opportunity to cut grass from along the rivers. Or if you have pre-prepared pastures, they will be ready to harvest when half the field is flowering. This gives the best balance between nutrient content and herbage yield.

Always check the weather forecast before harvesting because you need at least 4 dry weather days after cutting your pastures for the hay to dry before baling. If it rains on the cut pasture, the hay can easily rot. Cut your grass at least 10cm above the ground; the remaining grass acts as a platform to help the cut grass dry; it also reduces soil contamination.

After cutting the grass, leave it to wilt for 1-2 days; the cut grass is known as 'swath'. Once wilted, rake the swath into ridge-like rows – known as 'windrows' – and leave it to dry for 2 more days. If the windrows are large, turn the grass occasionally to allow air to circulate and dry the hay.

Note that stems take longer to dry than leaves and legume stems take even longer. Once dry, legume leaves detach easily; for this reason, always dry your legumes in a windrow – this helps trap the leaves in the hay. On day 4, check the swath in the windrows is dry before baling; if it is not dry, leave it for another day.

To bale your hay, you will need a ball of twine and a baling box.

You can make a baling box from wood; suggested measurements are 100cm x 70cm x 70cm.

First, lay one 3m piece of twine 20cm from either end of the box. Then pack and compact your hay into the box at maximum capacity. Finally, tie and eject the bale from the hay box for storage.

Store hay bales on a raised platform and in a well-ventilated place to allow air to circulate; never let hay get wet as this can cause it to rot.

Each cow needs 5-10kg of hay per day, if also fed with silage. Each cow needs 20kg of hay per day if hay is the only source of roughage.

For more information on this subject, see fact sheet F08 at zambiadairy.com.



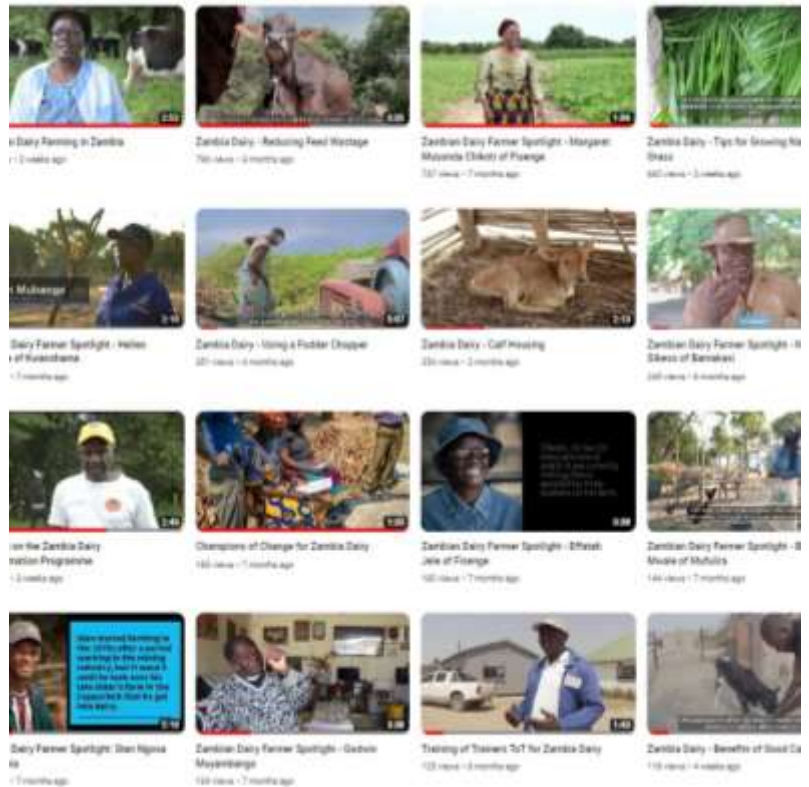
Hay is made from dried grass and/or legumes. It can be fed to cattle when pastures are in short supply, like during the dry season.

Zambia Dairy instructional videos proving popular

There are now 33 videos on the Zambia Dairy channel on YouTube, with more than 200 subscribers from across the farming community.

Recent uploads include two news items prepared by NAIS and instructional videos on growing Napier grass, feed planning for optimal milk production, climate-sensitive agricultural practices, preventing and treating mastitis, silage production and making concentrates. We are also working on making each instructional video available in Nyanja, Bemba and Tonga.

Subscribe now via <https://www.youtube.com/@zambiadairy> to make sure you don't miss out when new videos are added.



PROGRAMME UPDATES

Spotlight on gender equality in the dairy and livestock sectors

As part of ongoing programme activity in 2022, the ZDTP commissioned a desktop review of gender equality and social inclusion in the dairy and livestock sectors in Zambia.

The resultant paper, released this year, concludes that gender balance remains a pertinent issue in the dairy industry and livestock sector overall. The desktop review examined various documents from Zambia's private, public, and implementation sectors, pertaining to gender-related interventions within the dairy and livestock sectors. It determined that women have less access, ownership and control over livestock compared to men. For example, women lag behind in deciding when to sell livestock and how to use the income generated, despite being on par with men in livestock management.



Female dairy farmers in the Copperbelt during a silage-making demonstration held by the ZDTP.

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The review identified several ‘best practices’ for reducing the gender gap. They included the formation of more women-owned dairy cooperatives, investing in women-focused projects, training of female extension workers and the formation of district and regional networks for women. The report concluded that reducing the gender gap in the livestock sector would increase overall production through maximum gender participation.



Effatah Jele

‘Mama Jele’: A pioneer for women in agriculture

Effatah Jele is one of Zambia’s early female dairy farmers, having been farming in Luanshya (Fisenge) since 1975. Known as ‘Mama Jele’ in her community, she has made great efforts over several decades to advance the inclusion of women in agriculture, encouraging her peers to rise to decision-making positions in a largely male-dominated sector. Just like any farmer starting out, Effatah faced hurdles in her journey – from animal illness and death to facing challenges purchasing fresh cow’s milk for her infant son. Fortunately, Effatah is a solutions-oriented woman and these hurdles did not stop her becoming a successful businesswomen. Through farming, Effatah saw an opportunity to earn an income, sustain her family and make impactful change for women in agribusiness. In 1982, Effatah became a member of the Zambia National Farmers' Union (ZNFU), of which she

became the first female vice-chairperson. This position led her to sit proudly on the board of the Southern African Confederation of Agricultural Unions (SACAU) when it held its annual policy conference in 2010. Effatah has been participating in the ZDTP since 2017, which has seen her implement new business and farming practices – from improving on-farm record keeping to taking steps to prevent mastitis. Known for her kindness, initiative and proactiveness, ‘Mama Jele’ is committed to transforming the livestock sector in Zambia and hopes other women will feel encouraged to join her.

Follow ‘Zambia Dairy’ on Facebook (facebook.com/zambiadairy/), Twitter ([@DairyZambia](https://twitter.com/DairyZambia)) and YouTube (www.youtube.com/@zambiadairy)

Testing of e-Learning platform now under way

Testing is under way as the ZDTP moves into the second stage of developing online learning for farming change champions and lead farmers.

The learning content from the first course – ‘*Champions of Change for Zambia Small-Scale Dairy Farming*’ – has already been tested by a small group of Extension Officers and farm advisers who have given their feedback to the designers.

Development of a second course – ‘*Husbandry and Management for Zambia Small-Scale Dairy Farming*’ – is also progressing well.

Both courses draw on ZDTP’s extensive resource bank (e.g., fact sheets, imagery, video content and a dairy farming manual) to include topics ZDTP has shown to be highly relevant to small-scale dairy farming.

Participants can benefit from built in chat groups and online activities, getting automatic feedback on their progress, as well as them organising on-site practical task training.

They are currently accessed through a new service provided by Prime Consulting International but are soon to be supported by local Zambian partners in an exciting local development. Their design is supported by funding from the New Zealand Ministry of Foreign Affairs and Trade (MFAT).

Together, the two courses will make the benefits of the ZDTP available to dairy farmers and advisors across the country.

Course Outline: Champions of Change for Zambia Small-Scale Dairy Farming

The aim of this course is for participants to increase and develop their understanding of training skills in the context of Zambian small-scale dairy farming and to learn how to tailor training sessions to meet the needs of trainees and the training environment. This will enable participants to successfully transfer knowledge, practical skills and experiences to Zambian farmers. The results of effective training will improve husbandry and management, increasing small-scale dairy farm sustainability and profitability.

Course Outline: Husbandry and Management for Zambia Small-Scale Dairy Farming

This course provides an accessible online way to directly increase a small-scale dairy farmer’s knowledge and skills. The farming topics presented were selected as a result of ZDTP experiences, with content taken directly from project activities and outcomes. The course involves a mix of online learning with group discussions. It is recommended that these should be led by a local change champion adviser, who can support face-to-face local practical learning. Topics include feed management planning for dairy cows in the year round rainy and dry season cycles, how to ensure effective breeding and herd replacement for better yields, ensuring cow comfort and health, practicing milk quality and mastitis control and using management tools for better planning and profitability in the small-scale dairy enterprise.

Champions of Change group expands further

The group of change agents for the Zambian dairy industry has grown further thanks to a Training of Trainers (ToT) session held in early May 2023. The session was the 4th facilitated by the ZDTP. It was led by Dr Alan Pearson, the New Zealand-based Group Chairman of Prime Consulting International Ltd – the company implementing the ZDTP. As a result, a further 14 ‘Champions of Change’, from both Government and the private sector, are now knowledgeable in how to transfer knowledge successfully to farmers and other field extension workers. The first two ToT sessions were held in April 2022 and a third was held in September 2022. ZDTP Programme Country Manager Marnix Sanderse said he was happy to see a 50-50 split between male and female attendants this time around. Five participants were from Central Province, five were from Southern, two were from the Copperbelt, one was from Lusaka and the other was from Eastern Province. “We are excited to be expanding further into Zambia’s potential dairy regions,” said Mr Sanderse. “It’s also great to have a spread of participants from across Government, the private sector and other NGOs, recognising that transformation of the dairy industry requires input from all stakeholders.” Participants included representatives from MFL, Dairy Gold, Lactalis, SNV and World Vision. ZDTP Field Extension Manager Kelvin Mulusa said the ToT session generated interesting discussions on climate change, chopper businesses, Artificial Insemination and the availability of extension and livestock officers.

Feedback provided on Master Farmers model



Dr Alan Pearson during a discussion held as part of the Master Farmers feedback session.

Comments made during a review of the ‘Master Farmers’ model established by the ZDTP show Master Farmers have a good understanding of how mindset change is a gradual process rather than something that happens overnight. The comments were made during a feedback session held in Chisamba in early May, led by ZDTP representatives Dr Alan Pearson and Kelvin Mulusa. ‘Master Farmers’ or ‘Lead Farmers’ work closely with Extension Officers (EOs) to assist farmers in the adoption of best practice dairy farming technologies and activities.

Like EOs, they conduct demonstrations and distribute resources such as ZDTP fact sheets and instructional videos in their communities. The model was established as a solution to the limited number of farmers that formally-trained EOs can reach daily as well as the financial resources needed for fuel and transport. So far, more than 18 committed farmers from Central, Copperbelt and Southern Provinces have met the Master Farmers selection criteria, established by the ZDTP, based on their dairy farming knowledge and experience, farmer entrepreneurship and people advisory skills.

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During the feedback session held in Chisamba, Master Farmers shared their own experiences in relation to various dairy farming issues, including delivery of milk twice versus once a day and tricky loan situations. They also reported on their challenges and successes in their roles as Master Farmers so far. For example, efforts to improve animal genetics through Artificial Insemination (AI) programmes in some communities were being hindered by mindset and cultural issues. All agreed that mindset change was needed for training to be effective and improvements to be made. This was not an easy thing to achieve, Master Farmers said, because it required a special mix of empathy, patience, compassion and a consistent effort. The feedback sessions included a visit to Gilbert Mweemba's farm in Liteta, which Field Extension Manager Kelvin Mulusa said showed how impressive results could be when a consistent approach was followed. "The farmers were inspired by the work Gilbert has done on his farm and the milestones he has achieved in his farming business. Following a consistent approach has transformed their own dairy businesses as well. This is a message they're now sharing with other farmers in their capacity as Master Farmers in their communities. All of our Master Farmers are willing to help others – just for the love of it – and do not expect any monetary gain; however, the ZDTP is currently supporting them with logistics and capacity building in technical aspects of dairy farming."

INDUSTRY NEWS

Celebrating #WorldMilkDay

In 2001, World Milk Day was established by the Food and Agriculture Organisation of the United Nations to recognize the importance of milk as a global food and to celebrate the dairy sector. Each year since then, the benefits of milk and dairy products have been actively promoted around the world, including how dairy supports the livelihoods of one billion people. In 2023, World Milk Day will focus on showcasing how dairy is reducing its environmental footprint, while also providing nutritious foods and livelihoods. Catch up on the activities on social media channels by following the hashtags #WorldMilkDay and #EnjoyDairy.

Southern farmers now on board with RTM

Linda Moono, the Regional Extension Officer for the ZDTP in Southern Province, has been busy on-boarding farmers in her region to the *Farm 4 Profit* tool: a digital application that aims to help farmers use farm records to better manage their dairy businesses. Ms Moono said she was pleased farmers were showing interest in the application. "They say the tool will help them improve on-farm record keeping and, since they are in business, it will help them in terms of tracking their income and expenses," she said. "So far, I have onboarded 20 farmers from Southern Province and the process is ongoing." *Farm 4 Profit* is an extension of the Real-Time Management (RTM) initiative started by the ZDTP in 2017. Initially developed as a monitoring tool for the ZDTP's internal use, the original RTM process quickly became a valuable method to encourage better record keeping on dairy farms. It also helped kick-start discussions between farmers about how to improve their dairy businesses. The process involved collection of information on a farmer's financial and production performance on a monthly basis, via a simple two-page form. This information was fed back to farmers through easy-to-interpret reports. With the *Farm 4 Profit* tool, data entry is now completed via a desktop/laptop – still tracking parameters like feed costs and milk production. The information is available to view via an easy-to-use, web-based interface that includes graphs and statistics. As with the original RTM, the aim is to help farmers better understand key aspects of their dairy businesses, such as income, expenditure, herd structure, milk production and ultimately profit, cash flow and cost of production.

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