

Danish Dairy Solutions Give Thai Dairy New Tools for More Resource-Efficient Production

The United Nations estimate that the global population will continue to rise for at least the next 50 years. This, along with rising incomes in many parts of the world, will lead to increases in overall food consumption and changes in consumer diets. Combined with the climate crisis, food production is bound to come under great pressure, increasing the need for a green transition towards more sustainable and resource-efficient agriculture, with focus on producing more output for less input.

Danish agriculture and food production have been one of the pioneers in driving the innovation towards more resource-efficient production. Nowhere is this more evident than in dairy production. Danish dairy cows today produce the same amount of milk in Denmark per year than before the big modernization began, but today with only 1/3 of the cows. The reasons are many, ranging from well-educated farmers, high animal welfare, strong cooperation and trust among farmers and companies, better feed systems to comprehensive use of new technology and data. It is evident that a wide range of these learnings and innovative solutions also can assist the Thai dairy farmers and prepare the dairy industry for the demands of the future.

Why Focus on Resource Efficiency?

More resource-efficient agriculture and food production is not merely about producing more for less and being sustainable for the good of the environment; it is also a great business case that directly benefits the bottom line for farmers if the incentives are implemented in the right way.

When using fewer resources to produce more output, it positively affects the profitability and competitiveness of farmers. This also enables the food production to better compete with international actors on the global exports markets, providing them with opportunities to expand their businesses and accommodate the global middleclass consumers' demand for healthy food produced in line with sustainability goals.

Achieving Resource Efficiency in Thai Dairy Industry

When trying to become more resource-efficient and set-up climate friendly production, it is important to remember that everybody can set targets, but actually achieving them is something very different. During a webinar hosted by the Danish Embassy in Bangkok, agricultural experts from [SEGES Innovation](#) in Denmark stressed the fact that, *"50% of running a resource-efficient dairy farm is about being a good manager"*. This may sound trivial, but managing a modern farm efficiently requires one to proactively utilise a number of tools. This includes using new technology and data collecting systems on a big scale and knowing how to utilise these systems to ones benefit by for example getting constant updates on milk production, animal health, stable climate conditions, reproduction etc.

Almost all Danish dairy farmers today use advanced Digital Dairy Management Systems (DMS) that continuously gather data points from several sources throughout the dairy value chain such as milking equipment, milk laboratories, veterinarians, dairies etc. The DMS then processes the raw data and turns it into advanced decision-making tools that farmers can utilise to optimise their production. Farmers can also use the DMS to benchmark their own herd's performance against other farms' herd performance comparing e.g., milk yield or calf mortality. This performance benchmarking provides valuable support on management decisions of where to make changes in the production in order to be sustainable and resource-efficient and ultimately produce more for less. Furthermore, it supports farmers staying competitive by allowing them to compare their production with each other.



"Innovation towards more resource-efficient production is nowhere more evident than in the Danish dairy production: "50% of running a resource-efficient dairy farm is about being a good manager."

SEGES Innovation Denmark

Another big focus is how to provide the dairy cows with optimal feed. This makes Danish dairy farms very resource-efficient and sustainable. Feed costs in dairy farming typically account for around 50% of costs associated with production. Thus, providing cows with the optimal blend and amount of feed can save farmers lots of money by cutting down on inputs while simultaneously increasing milk output.

The last 25 years has seen a big change in forage production on Danish farms. The amount of maize grown for silage has increased significantly, while fodder beets, grain and legumes has seen on a drastic decline. Average milk yields per cow, however, has increased almost 50% during the same period. This highlights how Danish dairy farms increasingly adjust the feed for their dairy cows as expertise and knowledge is gained. As Henrik Martinussen, Specialist in Feeding Management from SEGES, notes, there is for example a clear correlation between organic matter digestibility (OMD) of forage and increasing milk yields. Big Danish ingredients companies such as [Novozymes](#) and [Chr. Hansen](#) are also constantly bringing new innovative products to the market, which for example help with feed crop production and cow digestion.



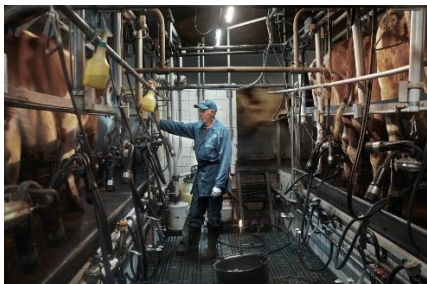
Danish red dairy cows

Furthermore, farmers utilise DMS, feed ration planning software and intelligent feed systems to continuously optimise when, what and how much feed they need to give to their cows based on e.g., health, age, time of day etc. By focusing on the small details, such as knowing how much protein or fatty acids the cows need in the feed, and constantly collecting and analysing data, farmers can save big costs by limiting feed waste.

Medicine and antibiotics consumption on Danish dairy farms is also low, with farmers often looking for more sustainable ways to make sure their cows are free or less affected from diseases. Despite potential short-term costs, ensuring that cows are less subject to diseases is a good business case in the long-term. A low calf mortality for example implies that farmers do not have to spend resources on replacing the deceased cows in their herd, while a healthy and sustainable herd allows the farmer to invest in the farm instead spending money on expensive antibiotics.

Technology, genetics and a good breeding play a big role in keeping down medicine usage, with farmers spending significant resources on innovative solutions. The farmer-owned cooperative [VikingGenetics](#) for example provide science-based genetic products that focus on animal welfare, food security and reducing environmental impact.

Solutions such as this allow farmers to continuously improve the genetic gain for each generation of their herd. Furthermore, the importance of using data collection and DMS as a way to ensure a healthy herd of dairy cows was also highlighted during the recent webinar by Lars Arne Hjort Nielsen, Senior Specialist in Farm Management Systems from SEGES. Utilising DMS tools effectively enable farmers to accurately monitor the health of their herd at all times, allowing them to dig deeper into the data and compare disease variations on an ongoing basis.



"It was good to get to know the livestock situation from a country abroad."

Participant: Dairy Webinar with SEGES Innovation and Department of Livestock Development

Thai-Denmark Dairy Cooperation Continues with Webinar

Denmark and Thailand have a long history on collaboration in the dairy sector, going back to the original Thai-Denmark Dairy Farm opened in 1962. In January 2022, Denmark and Thailand further strengthened this cooperation by signing a Memorandum of Understanding. As part of the MoU, together with the Danish Veterinary and Food Administration and SEGES Innovation, the Danish Embassy in Bangkok hosted a webinar in September 2022 with participation of more than 200 farmers and

employees of the Thai Department of Livestock Development. Danish experts from SEGES Innovation shared their knowledge through interesting presentations and gave examples of how new feed technology, farm management systems and the use of IT and data can help Thailand achieve a more resource-efficient and sustainable dairy production.

Innovative solutions such as the ones described above, underline the fact that through ambition and determination, the Thai Dairy Industry will quickly be able to establish a more sustainable and resource-efficient production system; for the benefit of the consumers and the farmers.

Resource Efficiency and the Green Transition

The agricultural sector and related land use emissions account for ~15-20% of global greenhouse gas emissions, thereby greatly contributing to climate change. Thus, the green transition towards more sustainable and resource efficient agriculture is a necessary step if we are to feed the world's growing population in the future without equally increasing GHG emissions. Many agricultural and food companies have acknowledged this task, setting goals and implementing initiatives that aim to produce more for less. For example, Arla Foods and Danish Crown, the Danish multinational dairy and meat cooperatives, have recently both set targets that will see their dairy and meat products become climate neutral (net zero) by 2050. Actions plan and incentives have been implemented and sub-goals are closely monitored in the value-chain – also on farm level.

For Thai dairy farms to transition towards resource-efficient production, some of the necessary steps to be taken may include:

- Adapt more modern technology and digital solutions in farms including data collection
- Optimise feed through continuous data analysis and technology
- Utilise innovative genetics and technology to minimise use of medicine and save costs
- Focus on the management role of farmers

Would you like to know more about Danish solutions that can help increase resource efficiency in the Thai agricultural and food sector?

The Trade Council at the Royal Danish Embassy in Bangkok works to connect Danish and Thai companies and supports collaboration and solutions to assist the transition towards more resource efficient and sustainable agriculture. Contact the Trade Council if you would like to know more about Danish solutions and be part of the shared Thai-Danish future within the food and agricultural sector.

Lene Mølsted Jensen

Minister Counsellor - Food, Agriculture and Fisheries at the Trade Council at the Royal Danish Embassy in Bangkok

- Email: ljenjen@um.dk

Learn more about Danish solutions

If you want to learn even more about innovative Danish solutions can assist the transition towards more sustainable and resource efficient agriculture, Food Nation Denmark has a large catalogue of case studies and initiatives from Denmark on their [website](#), ready for you to read about.