

Project *brief*

Thünen Institute of Farm Economics

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QM-Dairy Sustainability Tool

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- **Objectives: define sustainability, collect facts, initiate improvement processes.**
- **Around 30 dairies and milk producer associations are participating. Nearly 15,000 milk producers have completed the sustainability questionnaire, around 4,000 of them for the second time** (as of 03/2023).
- **The results show that the dairy farms already have many strengths in terms of sustainability. However, there is still room for improvement in some criteria.**
- **The transparency gained gives the dairy industry the opportunity to provide information to customers and society.**

Background and objectives

A sustainable and responsible management is becoming increasingly important in the production, processing and marketing of food. This also applies to the German dairy industry and its international competitiveness. Against this background, the QM-Dairy Sustainability Tool (DST) was developed by scientists and practitioners (Thünen Institute of Farm Economics, QM-Milch e. V. (quality management system for milk), Projektbüro Land und Markt) with the involvement of relevant stakeholders along the milk value chain. It was used and tested in practice for the first time from 2017 to 2020. Based on the experience gained during this pilot phase, the DST has been further developed.

The aim of this joint research project with QM-Milch e. V. is to further implement the DST in practice. The DST serves as a common development tool for dairies, milk producer associations and milk producers. It is intended to support a sustainable improvement of milk production and to initiate a dialog on the relevant issues and change processes towards more sustainable milk production. It also aims to provide facts to inform market partners and society about where dairy farms stand in terms of sustainability and how their sustainability status is developing.



What is special about the DST is that it aims to put all dairy farms on the path to greater sustainability. It recognizes that each dairy farm is unique and has different opportunities to adapt. Dairy farms are not categorized as “sustainable” or “unsustainable”. Rather, the aim is to identify strengths and weaknesses and thus initiate developments towards a more sustainable management on all dairy farms.

Approach

1) Recording of 86 sustainability criteria: The dairies use the sustainability questionnaire with their milk producers. In general, the milk producers themselves enter the data into the central database via an online questionnaire. The database is maintained by the Landeskontrollverband Nordrhein-Westfalen.

2) Data verification, analysis and evaluation: This is done at the Thünen Institute. The scientists prepare reports for the dairies in which the results of their milk producers are presented in detail and in anonymized form. In addition, individual result reports are prepared for the participating milk producers. These “sustainability benchmarks” show the farm managers where they stand in relation to the other suppliers in terms of the various sustainability criteria. The results are presented to the dairies afterwards. The dairies then start their internal processes. Strengths and weaknesses are analyzed, goals for further development are derived and implementation measures are defined.

In addition to the dairy-specific analyses, German-wide reports on the sustainability of dairy farms are prepared at regular intervals and progress is measured. The overall data set is also analyzed in depth for specific issues.

3) Securing the scientific base: New research is constantly being considered for the DST and is regularly published in the Thünen Reports.

4) Ensuring multi-stakeholder participation: The perspectives of the participating dairies and their milk producers as well as the views of retailers, the processing industry, the scientific community and NGOs on the DST were taken into account. Qualitative methods (group discussions, expert interviews) are used. The results should provide starting points for the further development of the DST.

5) Ensuring international linkages: Sustainability concepts of national and international initiatives and selected dairies will be examined. In this way, important developments in the field of sustainable milk production will be monitored in order to place

and further develop the DST in a national and international context.

Selected results and conclusions

Since 2017, the DST has been used by more than 30 dairies from all regions of Germany. In total, almost 15,000 dairy farms have already participated, which is more than a quarter of all German dairy farms (as of 03/2023). More than 4,000 dairy farms have already participated in the DST twice: the first time between 2017 and 2020 and the second time between 2020 and 2022. The DST is therefore providing first insights into developments in the field of sustainable milk production. These 4,009 dairy farms currently (at the time of the 2nd survey) keep an average of 104 dairy cows and cultivate 124 hectares of land. They are mainly conventional (only 1% are organic farms), full-time farms (89%) with a focus on milk production (91%). Some sample results are presented below:

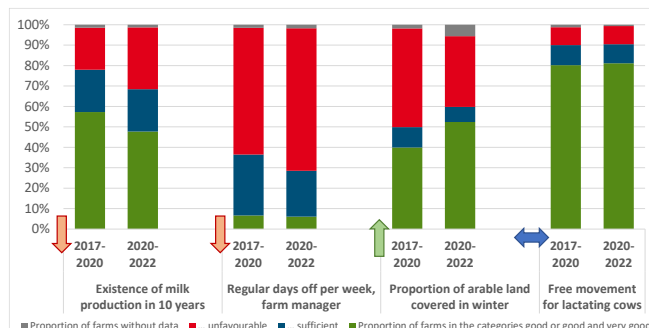
Social issues: Regular breaks are important to maintain the physical and mental health and performance of workers. In family farms, there are often no regular breaks from the daily work routine. The proportion of farm managers who do not have a regular day off per week has increased from 62% to 70% (see red area in the figure). There is also the question of how this will affect future generations. Does this have an impact on a potential succession?

Economy: (Dis)satisfaction with the economic situation in the dairy sector over the last three financial years has remained almost unchanged between the two surveys, but the subjective assessment of farm managers regarding the existence of their own milk production in ten years' time has not. A comparison of the two surveys shows that farm managers are becoming increasingly pessimistic about the future. In the first survey, 57% of farm managers said that they were very likely to still be producing milk in ten years' time, compared with 48% in the second survey (see green area in the figure). This underlines the fact that the reasons for possibly giving up milk production are complex.

Ecology: Winter green cover is important for water and erosion protection. 57% of the land in this sample is grassland and therefore covered in winter. Crop rotations based on maize, which were often used on dairy farms due to the ration structure, are a challenge for the winter greening of arable land. What can be observed: The uncovered arable land in winter decreases. A farm is categorized as unfavorable in this aspect if less than 70% of its arable land is covered in winter (see red area in the figure). In the first survey almost half of the dairy farms fell into this red area, in the second survey it was only 35%.

Animal welfare: Freedom of movement for lactating cows is a much debated issue. 82% of the farms have loose housing (see green area in the figure). In relation to the total number of cows on the farms surveyed, this corresponds to 95% of the cows. 18% of the surveyed farms have a tethering system (see red area in the figure or blue area if the combined housing criteria are met). Overall, the values remained the same between the two survey periods. This is not surprising: husbandry – a resource-related criterion – cannot be changed overnight.

Figure: Exemplary results from the areas economy, social issues, ecology and animal welfare for two survey periods: distribution of surveyed farms in the respective assessment categories (n = 4,009 dairy farms).



Reference: Calculations Thünen Institute of Farm Economics 2023, based on information provided by milk producers as part of the QM-Dairy Sustainability Tool.

Conclusions from the survey results: The small selection of results clearly shows that all dairy farms have criteria in which they are already sustainable, while in other criteria there is still potential for optimization. Each dairy farm is unique and has different opportunities for adaptation that need to be exploited: for even more sustainable milk and to maintain the competitiveness of milk production in Germany.

What the different stakeholders say: It is recognized that with the DST the dairy industry has embarked on a forward-looking path in terms of sustainability. Farm managers see the DST not only as a “annoying” task, but also as an opportunity. Important insights that the dairies have gained from participating in the DST are: the transparency gained, the opportunity to provide information to customers, the networking of the relevant players for the sustainability dialog in the dairy industry, but also the opportunity to show that sustainability is being actively addressed.

Additional information

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More information on the project and a list of publications can be found here: <https://www.thuenen.de/de/fachinstitute/betriebswirtschaft/projekte/qm-nachhaltigkeitsmodul-milch>

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External Thünen partners involved

Since 2017: QM-Milch e. V. (Berlin), Landeskontrollverband Nordrhein-Westfalen e. V. (Krefeld); 2017-2020: Projektbüro Land und Markt (Hamburg)

Runtime

4.2017-8.2020 – pilot phase/-project

7.2020-6.2023 – phase 2

7.2023-6.2026 – phase 3

Projekt-ID 1887, 2263

Last publications

Lassen B, Danne M, Genz M (2023) Die Klimabilanz kennen– und dann? DLG-Mitt 3/2023: 84-87

Lindena T, Hess S (2022) Is animal welfare better on smaller dairy farms? Evidence from 3,085 dairy farms in Germany. J Dairy Sci 105(11):8924-8945, DOI:10.3168/jds.2022-21906

Sponsors

Phases 2 and 3: Participating dairies (national, private). The pilot project was supported by funds from the Federal Ministry of Food and Agriculture (BMEL), based on a decision of the Parliament of the Federal Republic of Germany. The project sponsorship lay with the Federal Office for Agriculture and Food (BLE) as part of the Innovation Support Program.