

Hope for **OUR FUTURE,**
Prosperity for **OUR HERD!**



IMECE WORKSHOPS

DAIRY FARMING

April 2023

Bursa

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INTRODUCTION

The third of the Imece Workshops, which İşbank started to organize with the EFSE Development Facility and Frankfurt School of Finance & Management within the scope of its activities in agriculture, was held with the theme of "Dairy Farming".

More than 50 stakeholders, including representatives from relevant public and non-governmental organizations, agricultural cooperatives and farmer unions, producers, academics, agricultural entrepreneurs, and farmers, came together at the Dairy Farming Workshop held in Bursa on 27 April 2023 with the slogan "Hope for Our Future, Prosperity for Our Herd".

Discussion topics included short and long-term risks regarding the future of dairy farming in our country and how these risks can be managed, what should be done for the safety and sustainability of dairy farming, the technological transformations needed in the field, and the steps to be taken.

FINDINGS

Milk price trends, increasing feed and operational costs, Turkey's dairy cattle population, and the security and sustainability of raw milk supply and demand have become critical topics for Turkey in recent years in terms of agricultural policies. Milk, an important food product for nutrition and public health, is exposed to risks in various domains including environmental, economic, and hygienic conditions, as well as technological advancements and societal preferences.

Over the years, the dairy industry in Turkey has evolved into a multifaceted sector capable of exporting its products, particularly following the 1970s when major enterprises became involved in the industry. With approximately 1 million dairy farms, Turkey stands as the 8th largest milk producer on a global scale and ranks as the 3rd largest in Europe. The nation also engages in the export of milk and dairy products to more than 110 countries.

According to data released by the Food and Agriculture Organization of the United Nations (FAO), as of the year 2018, out of the world's total agricultural Gross Domestic Product (GDP) of 3.3 trillion USD, 500 billion USD belongs to the livestock sector. This means the livestock sector's share of the total agricultural production was over 15%. A breakdown of the production value of the livestock sector shows that cow's milk and beef have a production value of 310 billion USD and 180 billion USD, respectively.

When examining the prices of meat and dairy products, a notable disparity becomes evident between Turkey and EU countries. Consumer prices within this category are approximately 2.5 times higher in Turkey compared to EU nations. This discrepancy becomes even more significant when considering the average national income per capita. While the EU boasts an average income per capita of €31,000, this figure is merely one-third of the EU average at €9,000 in Turkey. Consequently, the cost of meat and dairy products for Turkish consumers is roughly eight times higher in comparison to their counterparts in EU countries.

The concerns voiced by the stakeholders who took part in the workshop have been documented in the report. These concerns are categorized into sections titled "Environmental, Social, and Governance," as well as "Problems and Solution Suggestions."

The "Highlights" section encompasses the steps recommended in the short, medium, and long term to address the concerns outlined in this report.

WORKSHOP OPENING SPEECHES

İZLEM ERDEM

Türkiye İş Bank Inc.

Assistant General Manager

We have determined the main topic of our workshop as "The Future of Dairy Farming" with the slogan "**Hope for Our Future, Prosperity for Our Herd**" with the aim of reaching "**common sense**" and obtaining important outputs with the valuable contributions of experienced and knowledgeable participants from various fields such as industry, non-governmental private organizations, public institutions and organizations, dairy unions, breeding animal husbandry unions, academicians, agri-entrepreneurs, and leading farmers.

Milk holds immense significance as a nutritional and public health staple, thereby necessitating **a well-crafted milk policy** across all nations. The dairy industry, which operated largely through small enterprises and traditional production units until the 1970s, has progressively transformed into a multifaceted sector with the capacity to globally export its products. This transformation was facilitated by the integration of major enterprises into the sector post-1970s.

However, despite the pivotal role of historical data in guiding various sectors, **the dairy industry lacks readily accessible and accurate data** for immediate analysis. According to TURKSTAT data, the collective raw milk production (from both bovine and ovine sources) reached 23,200,306 tonnes in 2021. As of the last recorded figures in 2019 for dairy animal populations, there were 31,068,157 dairy animals in existence, out of which 6,580,753 were dairy cattle. This cattle figure constitutes approximately 36% of the overall cattle count.

The predominant challenges confronting the sector encompass swift surges in input costs, particularly animal feed prices, uncertainties surrounding raw milk prices, inconsistencies in subsidies, financing dilemmas, insufficiencies in the modernization and competitiveness of family-owned farms, limited technology adoption, and flawed practices concerning animal health and welfare.

There are growing concerns regarding the sustainability of family farms and small enterprises, particularly those involved in dairy farming. It's been observed that during periods when dairy production costs are high and milk prices are low, some milking animals are sent for slaughter. To ensure a comprehensive and forward-looking plan, we need to address current challenges and contemplate the future. This prompts questions such as "**What should the dairy sector look like in a decade?**" and "What should the ideal milk and agricultural policies entail? What future prospects do these policies hold?"

We believe that a more sustainable and inhabitable world can be achieved when each organization and individual take part in safeguarding the planet, shouldering their responsibilities for an environmentally conscious future. Adopting this mindset can leave a positive legacy for future generations.

As a leading bank in Turkey, our commitment extends beyond providing affordable financial solutions. We are dedicated to enhancing the efficient use of limited resources, striving to ensure their constructive utilization that aligns with the long-term sustainability of the sector. We aim to be the most advantageous private bank for our farmers, **leveraging the synergies of agriculture, finance, and technology** for maximum impact. In this pursuit, we actively collaborate with all stakeholders within the ecosystem to devise solutions for the sector's challenges. By effectively integrating technology, agriculture, and finance, we strive to achieve the best possible outcomes.

To facilitate these objectives, we find the **"İmece Workshops"** series, where key stakeholders from the agricultural ecosystem convene, to be of paramount importance. Today, we are organizing the third workshop in this series.

İBRAHİM OĞUZ

Frankfurt School of Finance & Management
Agricultural Field Research Group Manager

"The only way to sustain dairy farming is an integrated approach, from soil to fork."

The only way to make sustainable dairy farming possible is through an integrated approach from farm to table and a dynamic planning that also encompasses the red meat sector. When considering the common characteristics of successful states in terms of large-scale dairy farming, the current issues both globally and in our country can be resolved with the right policies and implementations. Moreover, achieving success in this endeavor necessitates positioning all stakeholders within the value chain of the dairy sector within a production-centric "win-win" model.

OĞUZ BARDAK

EFSE Development Facility
Investment Manager

Each proposed idea shines as a beacon of hope for the future of agriculture. Making meaningful contributions to the sustainability of small agricultural enterprises holds significant importance. In both Turkey and the other countries where we operate, we hold rural areas and agricultural development as a priority. We focus on easing access to financial resources and supporting small enterprises in these regions.

WORKSHOP FLOW

PARTICIPANTS

	Name / Surname	Company
1	Ali Serdar Uzçimen	Türkiye İş Bank Inc.
2	Ahmet Eyigören	Pınar Dairy Products Industry Inc. - Milk Regional Responsible
3	Ahmet Nazmi Durgut	Türkiye İş Bank Inc.
4	Ahmet Sarayköy	Türkiye İş Bank Inc.
5	Akanay Gülkanat	Türkiye İş Bank Inc.
6	Aksoy Kahraman	Frankfurt School of Finance & Management
7	Ali Ural Akata	Pınar Dairy Products Industry Inc. - Milk Purchasing Manager
8	Ayşegül Bican	Cowealthy – Food Engineer Consultant
9	Bilgi Aydınbelge	Apak Dairy Agriculture Livestock CEO
10	Cihat Şimşek	President of Balıkesir Milk Producers Union
11	Cumhur Acar	Tire Milk Cooperative - Chief of Staff
12	Çağdaş Keskin	Abalıoğlu Feed Industry Inc. - Sales Director
13	Dilber Kavanoz Altınörs	Türkiye İş Bank Inc.
14	Doç. Dr. Serkan Özkaya	Isparta University of Applied Sciences - Academician
15	Doç. Dr. Sibel Erdoğan	Van Yüzüncü Yıl University – Academician
16	Doç. Dr. Zekeriya Kıyma	Eskisehir Osmangazi University – Academician
17	Dr. Erhan Erkmen	TAGYAD Vice President
18	Emre Altıntaş	Abalıoğlu Feed Industry Inc. - Marmara Region Sales Manager
19	Ertuğrul Ünlü	Türkiye İş Bank Inc.
20	Göksel Gökçan	Konya Leading Farmer Association Member - Gökcan Flake Business Owner
21	Gülnur Seymen	Matlı Group of Companies - Corporate Communications Manager
22	Gürkan İlhan	Veterinarian - Founder of İlhanlar Farm
23	Hasan Çekirdek	Member of Konya Leading Farmer Association - Founder and Manager of Çekta Inc.
24	Hasan Kuraloğlu	Sürü Yönetimi Limited Company - Marmara Region Sales Executive
25	Hasan Tahsin Atasoy	Leading Farmer - Atasoy Agriculture, Petroleum and Livestock Company Owner
26	Hüseyin Doğancukuru	Konya Leading Farmer Association President
27	İbrahim Gökcan	Leading Farmer
28	İbrahim Oğuz	Frankfurt School of Finance & Management - Agricultural Field Research Group Manager
29	İlkay Demirdağ	SustainFinance
30	İlker Mehmet Sağlam	İmeceMobil Agriculture Platform Electronic Services Inc. - CEO
31	İsmail Bican	Cowealthy - Co-Founder

32	Kübra Koldemir	SustainFinance
33	Mehmet Erol Sözen	Konya Leading Farmer Association Member - Sözen Perol Chairman of the Board of Directors
34	Metin Yüksel Bölüm	Türkiye İş Bank Inc.
35	Murat Bolat	Fresh Milk and Dairy Products Industry and Trade Inc. - Managing Partner
36	Mustafa Alper Devran	Türkiye İş Bank Inc.
37	Mustafa Evran	Tire District Agriculture and Forestry Manager
38	Nevzat Gürkan Kılıç	Türkiye İş Bank Inc.
39	Nida Cihan Doğutan	Türkiye İş Bank Inc.
40	Nuran Yavuz	Veterinarian - AtaFen CEO
41	Nurettin Çakır	President of Bursa Regional Union of Livestock Co-operatives
42	Osman Öztürk	President of Tire Milk Cooperative
43	Ömer Abay	Pınar Dairy Products Industry Inc. - Regional Milk Reception Supervisor
44	Prof. Dr. Duygu Aktürk	Çanakkale University - Academician
45	Prof. Dr. Hakan Öner	Burdur Mehmet Akif Ersoy University - Academician
46	Prof. Dr. Hakan Sağırkaya	Bursa Uludağ University - Academician
47	Prof. Dr. İsmet Türkmen	Bursa Uludağ University - Academician
48	Prof. Dr. Serap Goncu	Çukurova University – Academician
49	Prof. Dr. Sibel Tan	Çanakkale University - Academician
50	Suat Ülkümen	Türkiye İş Bank Inc.
51	Sümer Tömek Bayındır	TE-TA Teknik Agriculture Limited Company - CEO
52	Tahir Selçuk Yavuz	Veterinarian - Ege Vet and Livestock CEO
53	Tolga Yavuz	Matlı Feed Industry and Trade Inc.- Marketing Manager
54	Turan Akbaş	Türkiye İş Bank Inc.
55	Ünal Örneç	TAGYAD - Education - Research External Relations Coordinator
56	Yusuf Burucu	Elite Gen Livestock Limited Company - Manager

Program



FESE
DEVELOPMENT FACILITY

TÜRKİYE İŞ BANKASI

İMECE ÇALIŞTAYLARI | SÜT HAYVANCILIĞI

27.04.2023, Perşembe

09:30 - 10:00 **Kayıt ve Açılış**

10:00 - 10:10 **Çalıştay Açılışı**
İrfan Donat *Moderatör - BloombergHT*

10:10 - 10:20 **Hoş Geldiniz Konuşması**
İzlem Erdem *Türkiye İş Bankası A.Ş.*
Genel Müdür Yardımcısı

10:20 - 10:25 **Finance In Motion**
Oğuz Bardak *Yatırım Yöneticisi*

10:25 - 10:35 **Frankfurt School**
İbrahim Oğuz *Agronomist*

10:35 - 12:00 **Çalıştay Oturumu - "Süt Hayvancılığında Verimlilik"**

12:00 - 12:10 **Kahve Arası**

12:10 - 13:30 **Çalıştay Oturumu - "Süt Hayvancılığında Sürdürülebilirlik"**

13:30 - 14:30 **Öğle Yemeği**

14:30 - 14:45 **Masslarda Çıktıların Derlenmesi**

14:45 - 15:45 **Oturumların Çıktıları - İrfan Donat**

15:45 - 16:00 **Kapanış**

 **Etkinliğimizde, fotoğraf çekimi yapılmakta ve kamera kaydı alınmaktadır.**

Closing



REPORT METHODOLOGY

- They are grouped under the main headings of "Environmental", "Social," and "Governance".
- The views of the participants have been kept faithful to impartiality.
- The topics emphasized in the workshop are listed in the "Problems" and "Solution Suggestions" sections.

ENVIRONMENTAL FACTORS



FEED

<u>PROBLEMS</u>	<u>PROPOSED SOLUTIONS</u>
<ul style="list-style-type: none"> • Deficit in animal feed supply and insufficient quality of raw materials (silage, roughage, etc.). • The decrease in feed quality leads to an equal reduction in productivity • The difficulty in accessing cost-effective high-quality roughage and concentrated feed. • Decrease in milk yield due to the preference of feeds with low nutritional value due to costs. 	<ul style="list-style-type: none"> • R&D centers should be established for feed production. • Plans should be made to protect pastures for the production and supply of quality roughage. • Plant nutrition and harvest time should be planned correctly, standards and supports should be developed according to feed quality. • A premium system should be designed for enterprises that increase milk quality by using quality feed. • Contract-based production models that will enable more efficient use of scarce resources should be developed. • In order to reduce costs, collective internal supply method should be adopted and regional joint planning should be made in roughage production. • Awareness raising on the contribution of quality forage use and pasture management to productivity should be emphasized.

CLIMATE CHANGE

<u>PROBLEMS</u>	<u>PROPOSED SOLUTIONS</u>
<ul style="list-style-type: none"> • Low awareness of water requirements for milk. • Trying to carry out activities with insufficient water resources. • Insufficient waste management considering sustainability. • Despite the rapid changes in climate conditions, livestock breeding activities cannot react to the change at the same pace and traditional methods continue to be widespread. • Failure to popularise animal nutrition techniques that reduce greenhouse gas emissions in bovine dairy farming. 	<ul style="list-style-type: none"> • The "Soil and Water Authority" should be reactivated, awareness raising activities should be carried out for farmers on soil improvement and more economical use of our clean water resources should be ensured. • Necessary controls on greenhouse gas emission, water-energy consumption, fertiliser-waste and barn management should be ensured. • Misuse of soil and water should be prevented. • Basins should be formed not only according to province/district locations, but also by taking into account areas with common components such as sun-air-water. • Decisions for implementation should be tested in pilot regions and the results should be analysed comparatively. • Disinformation about synthetic meat and global climate change should be combated. • Efforts should be made to raise awareness of producers who make cattle breeding in pastures that are more suitable for small ruminants. • Awareness should be raised on climate change, its impacts and adaptation.

	<ul style="list-style-type: none">• A sustainable cycle should be ensured with alternating grazing by carrying out improvement works in pastures.• Sustainable solutions should be developed by considering livestock and plant production together.• Efforts to recycle waste products in the ecosystem and include them in the agricultural cycle should be increased.• Studies on manure management, integration of biogas systems with livestock enterprises, recycling of cheese and milk production residues should be expanded.
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SOCIAL FACTORS



SOCIOLOGICAL STRUCTURE

<u>PROBLEMS</u>	<u>PROPOSED SOLUTIONS</u>
<p>Organization</p> <ul style="list-style-type: none"> • Failure to establish producer organization structure. • Failure to establish an inclusive and effective consultancy system and cooperation structure between public-private sector-producer organizations and farmers. • Confusion of authority and miscommunication among the institutions operating in the field of dairy breeding in Turkey. • Co-operative activities are not strong enough. • Low tendency of producers to become members of unions. 	<p>Organization</p> <ul style="list-style-type: none"> • Determination of production according to market conditions, market management, retailing, geographical marking, branding, supply, etc. Critical interventions at necessary points, protection of biological diversity, meeting the need for education and training in the sector, activities to increase employment should be carried out with the effective and competent participation of producer unions. • Qualified and professional organization should be ensured in the sector, and unions and other institutions should cooperate. • A counselling system should be established, counsellors should be assigned to each farmer and farmers should be ensured to act under the control and cooperation of counsellors. • Consultants should reveal the problems, collect data and provide guidance on solutions by taking into account the international infrastructure.

Sociological Structure

- Existence of problems related to social life and social security in rural areas.
- People living in rural areas do not have the conditions to sustain their lives in prosperity.
- Failure to ensure sustainability in small enterprises, especially young farmers' unwillingness to continue agricultural activities.
- Problems of status and professional perception for sector employment.

- Private sector, co-operatives and universities should cooperate in R&D studies.
- Cooperation should be ensured between breeding unions, milk producer unions, cooperatives and other unions and organisations.

Sociological Structure

- Rural life should be encouraged by the state and social security should be provided.
- Social security premiums in rural areas should be covered by the state.
- Social life projects should be developed to modernise village life, encourage young people to stay in rural areas and increase welfare in rural areas.
- Sustainable projects should be developed to pave the way for young farmers and their realisation and follow-up should be ensured.
- The perception towards shepherds should be improved and the awareness of the profession of zootechnician should be supported.
- Efforts should be made to eliminate sociocultural prejudices against animal husbandry and the perception that animal husbandry is an attractive profession should be strengthened.
- Technology should be brought together with young farmers.

	<ul style="list-style-type: none">• Farmers who are engaged in correct and efficient animal husbandry should be given titles such as mastership and should set an example for other breeders in the region.• Plaque-award presentation ceremonies should be organised for the enterprises that are considered as role models by all stakeholders.• Animal markets should be established where animals can be exhibited, competitions can be organised and buying and selling transactions can be made.
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USE OF DIGITAL TECHNOLOGIES

<u>PROBLEMS</u>	<u>PROPOSED SOLUTIONS</u>
<ul style="list-style-type: none"> • Not having sufficient data and therefore not being able to determine the needs in a healthy way. • Technical problems in data flow from production facilities. • Failure to utilise herd tracking management systems effectively. • Failure of producers to use technology effectively, including the applications/systems/add-ons/equipment that they have compulsorily purchased in order to receive grants. 	<ul style="list-style-type: none"> • Data on animal husbandry should be collected in a single centre and these data should be used effectively in planning for the next period. • A traceable "Animal Asset" database should be established. • Data flows provided by satellite services on digital platforms should be smooth and fast. • State institutions should establish the necessary infrastructure for healthy data flow and co-operatives should be made an essential part of data transfer. • Data-based agricultural policies should be followed, and animal registration and tracking systems should continuously feed the database. • Social media platforms and mobile applications enabling mass communication should be used more effectively and interactive communication with producers should be ensured. • New technologies for sequestering carbon emissions should be used and made widespread. • Data anomalies should be examined and analysed by experts.

	<ul style="list-style-type: none">• Domestic technological productions should be supported to reduce costs in dairy farming technologies.• Ease of work should be provided by improving working conditions through technological applications.• Herd management systems that detect heat and movement should be used to increase seed retention rate.
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EDUCATION

<u>PROBLEMS</u>	<u>PROPOSED SOLUTIONS</u>
<ul style="list-style-type: none"> • Farmers cannot access the practical training they need. • Insufficient activities to increase the interest of farmers in practical and theoretical trainings. • Inadequate public-academia-private sector co-operation, including institutes and research and development institutions, in relation to the delivery, structuring and dissemination of trainings to the field. 	<ul style="list-style-type: none"> • Practical trainings for farmers should be extended. • Environments where farmers can have information about dairy farming should be established through events such as fairs etc. • Students of agricultural and veterinary faculties should be supported to receive training in the field. • Structured training contents, especially the following, should be created and disseminated: <ul style="list-style-type: none"> ○ Feed production, plant nutrition, harvest time ○ Financial literacy, cost and profit calculation ○ Regular care of animals in labour ○ Herd tracking systems ○ Technological developments ○ Climate change • Not only public institutions and organizations, but also the private sector and non-governmental organizations should make maximum contribution to education with an understanding of social responsibility. • The number of projects to support women producers should be increased.

- In order to encourage young farmers, cooperation should be established between universities, organizations, public and private sectors and programs should be organized to enable students to practice animal husbandry in a live environment.
- In co-operation with universities, women producers should be provided with technical support.
- Activities should be carried out to increase the awareness of children and young people towards the sector.
- Practical producer trainings should be organized by the Provincial Directorates of Agriculture with master trainers who will act as mentors.
- Organizations should be carried out by unions for farmers to see examples of foreign practices on site.
- Cooperation between universities, the Ministry of Agriculture and Forestry and the private sector should be increased and field practices should be made widespread.
- Agricultural engineers working at the desk in District Directorates of Agriculture should take more effective and active roles in the field.
- The importance of TARSİM (Agricultural Insurance Pool Management Company) animal life insurance should be explained more to producers and stakeholders in the sector.

	<ul style="list-style-type: none"> • Mechanisation and modernisation integration should be ensured to support employment in the livestock sector.
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LACK OF INFORMATION

<u>PROBLEMS</u>	<u>PROPOSED SOLUTIONS</u>
<p>Reclamation</p> <ul style="list-style-type: none"> • Failure to keep the pedigree records of the semen used in Turkey and the lack of registration reduces the effectiveness of breeding studies. • The scarcity of breeding studies in our country and the fact that these studies are not carried out in a perspective that will consider the sustainability and productivity of animal husbandry. <p>Resentment</p> <ul style="list-style-type: none"> • Inadequate heat monitoring. • Hidden heat is overlooked. 	<p>Reclamation</p> <ul style="list-style-type: none"> • Since the phenomenon of progeny retention is very important in breeding studies, it should be ensured that each enterprise keeps its records in a healthy and traceable manner by considering the importance of retrospective records. • In order to increase the efficiency of breeding studies, information such as yield, artificial insemination, mother and father information, susceptibility to diseases should be recorded and recording systems should be used effectively. • In order to increase the effect of breeding, good care, feeding and modern mechanisation on yield, it should be ensured that exemplary enterprises that are successful in this regard are shown as role models. <p>Resentment</p> <ul style="list-style-type: none"> • In order to avoid problems in fertility retention, wrong feeding should be prevented and estrus monitoring should be done more consciously.

Insemination

- Insufficient knowledge of the inseminators.
- Spread of diseases among animals as a result of natural mating.

Dry Period

- In the dry period, which is the preparation period of the animal for birth; improper feeding or careless behaviours towards animal health and the development of birth problems due to these.

Breeding

- Inadequate breeding activities as well as the lack of supervision of the activities of supreme unions such as breeding unions.

- The use of technologies and herd management systems that prevent hidden heat from being overlooked and monitor the heat of animals should be made widespread.

Insemination

- Artificial insemination should be popularised to prevent diseases caused by natural mating.
- It should be taken into consideration that factors such as timing, follow-up, preparation and nutrition affect the success of insemination, and studies should be carried out to increase the awareness of producers on these issues.

Dry Period

- In order to reduce the risk of calf loss and to ensure the birth of healthier calves, the needs of the calf and the mother should be met in the best way during the dry period, which is the last two months of pregnancy.
- Care and feeding should be done well in the dry period.

Breeding

- Livestock activities should be categorised and separated into breeding and fattening.
- In breeding production, disease-free conditions should be set and enterprises should be supervised.

Calf Loss

- Economic losses due to calf deaths in our country.
- Inadequacy of activities to prevent calf losses.

Effectiveness

- Lack of effective implementation of nutrition programmes according to genetic species.

- Activities of breeding supreme unions such as purchase and sale of goods should be regulated and these activities should be supervised.

Calf Loss

- Measures should be taken to prevent diarrhoea, which is one of the causes of calf loss.
- Due to the high cost of animal production in Turkey, measures should be taken to reduce calf loss rates below the reference range of 5%.
- The places where the calves will sleep should be open, covered, dry and clean.
- Considering that the protective substances needed by the animal are passed to the calf with the oral milk, the oral milk should be given on time and as much as the calf needs.
- Pregnancy and postnatal processes of cows should be closely monitored with preventive medicine practices.
- Calves should be taken to individual rooms after birth and calf losses should be prevented by using robotic feeding systems.

Effectiveness

- Genetically appropriate accommodation, nutrition, care and hygiene conditions should be created.

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| <ul style="list-style-type: none">• Failure to provide a suitable living environment for the genetic species obtained from abroad.• Genetic and environmental factors (housing, stress, nutrition, hygiene, health etc.) affecting milk yield are not sufficiently known by breeders. | <ul style="list-style-type: none">• Animals should have access to clean water and plenty of air, breeding should be carried out in environments with suitable bedding and care should be taken to ensure that animals have contact with soil.• Showering should be given importance and animals should be provided with the opportunity to cool themselves.• Delivery rooms should be kept clean, spacious and dry.• Guidance should be given on feeding methods and feed production through preventive medicine, and farmers should be made aware to prevent udder diseases without the use of antibiotics and similar drugs.• In order to combat diseases such as brucellosis and tuberculosis, timely measures should be taken by the public authority for vaccination and follow-up.• The number of milking should be adjusted according to the amount of milk given by the animal. |
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GOVERNANCE FACTORS



LACK OF POLICY

<u>PROBLEMS</u>	<u>PROPOSED SOLUTIONS</u>
<p>Planning</p> <ul style="list-style-type: none"> • Agricultural policies are not sustainable. • Planning and subsidies are not carried out centrally. • Misuse of agricultural lands (investment, construction, etc.). • Problems arising from inheritance law in agricultural areas. • Problems in foreign trade policies regarding dairy products. • Failure to determine the current prices in milk production at levels where producers can make profit and lack of adequate support programmes. • Loss of pastures due to heavy and unplanned grazing. • Farmers do not use the subsidies they receive correctly. • Slaughter of dairy animals to meet the demand for meat. 	<p>Planning</p> <ul style="list-style-type: none"> • Data-based agricultural policy should be followed and animal registration and tracking systems should feed the data continuously. • Regional data received from institutions, unions and chambers other than public institutions should be processed at the centre. • Agricultural policies that take into account long-term foreign trade activities should be organised. • A 5, 10 and 30-year strategic planning should be made, taking into account all elements such as financing, production, technology, public, markets, incentives and risks. • Legal regulations and inspections should be planned to prevent slaughter of dairy animals. • Controls, information, guidance and support for compliance with the plans should be carried out regionally; the public, chambers and unions should be in co-operation in this process.

- The use of land for investment purposes instead of agricultural purposes should be prohibited.
- Production should be supported by preventing the sale of lands divided due to inheritance.
- Import of milk powder should be limited or even stopped.

Pricing

- The effectiveness of the "National Milk Council" should be increased and raw milk prices should be determined at levels that will not cause any loss to producers in the face of rising costs.

Incentive

- State incentives should be announced before the harvest, essential needs should be met by the state before the harvest and models should be established where producers can produce their own feed.
- Production of fodder crops should be encouraged in the regions where livestock production is carried out; support, implementation and responsibilities should be distributed to the regions and an interactive functioning should be started.

- Rural life should be encouraged by the state, social security premiums should be covered by the state and employment incentives should be provided.
- Incentives should be given by considering enterprise size and productivity.
- Grants and subsidies should be given to people directly involved in dairy farming.
- SCT (Special Consumption Tax) on diesel oil should be abolished for the sustainability of agricultural production.
- Small-scale farms should be given incentives for organic milk or organic fattening.
- The number of women farmers/producers should be increased and supports specific to women farmers should be increased.
- The effectiveness of co-operatives should be increased with government support, and data should be collected from co-operatives for production planning.
- Instead of subsidies per animal, subsidies should be provided at differentiated rates according to enterprise sizes and new enterprises should be positively differentiated in these subsidies.

	<ul style="list-style-type: none"> • Correct utilisation of subsidies should be ensured and a control mechanism should be developed.
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STRUCTURAL / SYSTEMIC PROBLEMS

<u>PROBLEMS</u>	<u>PROPOSED SOLUTIONS</u>
<p>Value Added Product Creation</p> <ul style="list-style-type: none"> • Failure to create value added products. • Insufficient branding activities, lack of internationally known cheese types. • Failure to follow foreign trade policies compatible with branding. <p>Labour Shortage</p> <ul style="list-style-type: none"> • Lack of sufficient qualified labour force. • Failure to employ experienced intermediate staff. 	<p>Value Added Product Creation</p> <ul style="list-style-type: none"> • Production and producer standards should be established. • The standards of the enterprises should be determined and the enterprises should be divided into classes that can be certified as A, B, C. • Certificate programmes should be developed and standards should be documented in order to increase and monitor producer quality. <p>Labour Shortage</p> <ul style="list-style-type: none"> • In addition to prioritising academic education, trainings for training intermediate staff should be organised. • Mechanisation and modernisation should be integrated to overcome labour problems.

Regional Planning Requirement

- Failure to maintain the supply-demand balance as a result of inadequate regional production planning.

Cost of Production

- Productivity is not taken into consideration sufficiently except for large enterprises.
- Insufficient awareness of cost-increasing issues such as spoiled feed, calf loss, loss of offspring, mastitis, lack of correct milking techniques, feeder management, employee mistakes and lack of care in dry period feeding.

Regional Planning Requirement

- The Ministry should prepare a production map; ovine and bovine breeding and dairy farming should be planned regionally.
- Producers should be directed to make the right planning.
- Cooperatives should work together for planned production, contracted production should be carried out with regional planning and producers should be secured.
- Support for the modernisation of existing enterprises should be increased.

Cost of Production

- According to the production planning, since 65-75% of milk cost constitutes feed cost, rough fodder crops cultivation should be prioritised.
- Economy of scale should be established for efficient production.
- Production planning should be made and technological enterprise areas should be established depending on the number of animals.
- Controls should be provided for excessive feed consumption.

<p>Product Quality</p> <ul style="list-style-type: none"> • Failure to establish product quality standards. • Low sensitivity of consumers towards milk quality. 	<ul style="list-style-type: none"> • Costs should be reduced by enabling the use of milk tanks, feed mixing machines and measuring devices by collective labour. • In small and medium sized enterprises, nutrition programmes should be created by paying utmost attention to fat and protein ratios. • Taking into account the cost of investments for the expansion of mechanisation and modernisation, small enterprises should be supported to come together. • Cost accounting should be made for the herd in the enterprise and costs per litre and per animal should be determined. • Unproductive and unprofitable animals in the milking herd should be excluded from the herd. • Productivity, sustainability and technology affect profitability in an integrated manner and in order to ensure profitability, it is necessary to increase fertility and milk yield and prevent calf losses. <p>Product Quality</p> <ul style="list-style-type: none"> • Quality milk should be labelled and presented to the market and the consumer's attention should be drawn to the quality issue. • In order to encourage producers to produce quality milk, factories
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<ul style="list-style-type: none"> • Lack of premium payment according to quality (milk fat, protein amount, etc.) in milk purchases in farms. • Insufficient use of technological applications and models in the world in the country. • Disinformation in the sector and its negative impact on producer and consumer behaviour. 	<p>should pay a premium for the amount of fat and protein in milk.</p> <ul style="list-style-type: none"> • Milk collection tanks should have sections where milk of different quality will not be mixed. • Since low quality milk causes yield loss at every stage of the process, a better price should be given for quality milk.
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ECONOMICS AND FINANCE

<u>PROBLEMS</u>	<u>PROPOSED SOLUTIONS</u>
<ul style="list-style-type: none"> • Increased need for external financing as a result of the increase in the prices of inputs used in milk production. • While feed prices increase, milk prices do not increase at the same rate and producers give up production. • Failure to provide low-interest and long-term financing to young producers. 	<ul style="list-style-type: none"> • Supply chain financing model should be developed. • Financial institutions and banks should take actions to offer more advantageous or discounted products/services to farmers who implement good practices. • Private institutions, which are among the stakeholders of the sector, should facilitate access to finance within the scope of social responsibility in consultation with Development Agencies. • Access to finance for disadvantaged groups (small producers, women farmers, young farmers, etc.) should be facilitated. • In order to increase the quality of financing, loans should be given selectively to qualified projects.

	<ul style="list-style-type: none"> • In order to contribute to the increase in productivity and sustainability, financing opportunities dedicated to issues such as maintenance, feeding, fertility and breeding should be provided.
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HIGHLIGHTS

Environmental Factors	Social Factors	Governance Factors
<ul style="list-style-type: none"> • Feed • Climate Change 	<ul style="list-style-type: none"> • Sociological Structure • Use of Digital Technologies • Education • Lack of Information 	<ul style="list-style-type: none"> • Lack of Policy • Structural / Systemic Problems • Economics and Finance

During the workshop, the concerns expressed by stakeholders were categorized under several headings, which include "Environmental, Social, and Governance" aspects, encompassing both financial and non-financial "Problems and Solution Suggestions."

In terms of addressing these concerns, the following actions have been evaluated across short, medium, and long-term horizons:

In the short term;

- **Data Management:** Enhancing data quality, formulating data-driven agricultural policies, and maintaining up-to-date data through animal registration and tracking systems.
- **Planning:** Developing a suitable organizational structure plan and creating regional production maps.
- **National Milk Consumption Monitoring:** Monitoring national meat and milk consumption to inform effective production, consumption, and pricing strategies.
- **Milk Price Determination:** Establishing appropriate price policies for sustainable agricultural sector production.
- **Knowledge Enhancement through Training:** Conducting farmer training programs focusing on productivity, sustainability, profitability, and awareness-

raising.

- **Sustainability:** Enforcing checks on greenhouse gas emissions, water-energy consumption, fertilizer-waste management, and barn practices.
- **Enhancing Competitive Conditions:** Promoting the modernization and technological advancement of agricultural enterprises.

In the medium term;

- **Projection Preparation:** Formulating consumption and export projections for short, medium, and long-term periods.
- **Animal Asset Projection and Production Models:** Developing projections for animal assets over these timeframes and constructing production models accordingly.
- **Enhanced Coordination:** Establishing collaborative mechanisms involving milk producer unions, breeder unions, cooperatives, producers, consumers, industry stakeholders, and relevant organizations to coordinate efforts better.
- **Rural Life Promotion:** Fostering welfare enhancement in rural areas by devising social initiatives for the youth, promoting crop cultivation and animal husbandry.
- **Supportive Public Policies:** Crafting public policies prioritizing sustainability, international competitiveness, and overall sectoral development.
- **Functional Value Chain Design:** Designing an efficiently operating value chain that optimally connects all stakeholders.
- **Incentives and Financing Models Development:** Formulating incentives and financing models that bolster sectoral growth and development.

In the long term;

- **Increasing Confidence in Public Policies,**
- Establishing a governance structure on **Merging Ethical Values,**
- Developing financial management models ensuring **the Improvement of Competition Conditions,**
- **Strengthening the Organization Structure in the International Market,**
- **Giving Importance to Branding**

The highlighted suggestions and issues have been brought to the forefront, underscoring the need for more comprehensive analyses.

İşbank is steadfast in its commitment to supporting production processes that uphold the

well-being of people, animals, and the environment, in perfect alignment with the principles of nature. Beyond our established banking activities, we are dedicated to crafting innovative solutions that merge agriculture, technology, and finance, meticulously tailored to the unique requirements of each sector and in accordance with the "Sustainable Development Goals and Indicators."

The collaborative efforts of all stakeholders hold immense importance. Through joint endeavors and a shared vision, precise and sustainable solutions can be conceived, implemented, and fortified, ultimately leading to substantial advancements within the agricultural sector. At İşbank, we aspire to enrich our understanding and insight in this realm, bolstering our capacity to serve as a solution partner. This extends beyond our role as a bank, positioning us as a robust link within the intricate tapestry of the agricultural value chain.

ABOUT SUSTAIN FINANCE

The workshop's comprehensive report, produced through a collaborative effort involving Türkiye İş Bankası EFSE Development Facility and Frankfurt School of Finance & Management, has been compiled by the SustainFinance team members: Ayşe Kaşıkçı, İlkay Demirdağ, and Kübra Koldemir. The report reflects the insightful perspectives shared by various stakeholders during the workshop.

For further information, please refer to SustainFinance's website at sustainfinance.org, or get in touch via email at kubra@sustainfinance.org.

SustainFinance is a non-profit organization driven by the vision of embedding sustainability principles into the decision-making processes of the investment industry. It provides a platform where multiple stakeholders can engage, articulate diverse viewpoints, and exchange ideas.

It's important to note that throughout the report, information has been systematically categorized under the overarching themes of "Environmental, Social, and Governance." The compilation remains impartial, upholding the perspectives expressed by participants in a neutral manner.

Hope for **OUR FUTURE,**
Prosperity for **OUR HERD!**



IMECE WORKSHOPS

DAIRY FARMING

April 2023

Bursa