

# SOW *Wheat* GATHER *Life*

## İMECE WORKSHOPS

WHEAT

December 2022

Ankara

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# INTRODUCTION

The second 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 "Wheat".

More than 60 stakeholders, including representatives from relevant public and private organizations, agricultural cooperatives and unions, producers, academics, agricultural entrepreneurs, and farmers, came together at the Wheat Workshop that was held in Ankara on December 15, 2022 with the slogan "Sow wheat, gather life".

During the workshop, solutions regarding the most efficient production methods for wheat were discussed, which holds strategic importance worldwide as one of the primary food sources. Contributions of wheat to the economy were recognized in terms of sustainable agriculture.

*"The story of wheat, efficient production, drought, and climate resistant seed breeding have been analyzed."*

In the workshop where the story of wheat in sustainable agricultural production was presented, the following subheadings came to the front:

- Efficient production and economics of wheat
- The critical importance of wheat for sustainable agriculture
- Seed breeding studies in our country
- Effective use of technological and digital methods in production
- Collaborative solutions that are protective for both nature and farmer

# FINDINGS

The pandemic, the Russia-Ukraine conflict, domestic and international economic hardships, and drought caused by the climate crisis have once again highlighted the importance of food and agriculture.

Countries prioritize sustainable production and agricultural activities in food and agriculture to avoid food crises and strengthen their national security. In this regard, wheat stands out as one of the leading agricultural products.

*"Wheat is considered one of the strategic agricultural products worldwide due to its high value and widespread consumption everywhere!"*

In Turkey, wheat has become a critical product. Domestically, it concerns bread prices, and internationally, it concerns imports from Russia and Ukraine as a result of the grain corridor in the international arena.

The prominent findings on wheat production in Turkey are as follows:

- Between 2000 and 2020, while the population in Turkey grew by 36%, wheat production fluctuated, ranging from a 21% decrease to a 3% increase.<sup>(1)</sup>
- During the same period, wheat self-sufficiency in Turkey experienced fluctuations, ranging from a 16% decrease to a 13% increase, while wheat consumption fluctuated from a 16% decrease to a 5% increase.<sup>(2)</sup>
- Between 2000 and 2020, Turkey's average annual productivity increase was 1.6%, while the average yearly cultivated area decreased by 1.3%.<sup>(3)</sup>
- In 2022, Russia ranked first among the countries importing wheat with a 64% share, followed by Ukraine with 13%.<sup>(4)</sup>
- Turkey ranks 72nd in wheat productivity globally. <sup>(5)</sup>
- Fuel and fertilizer account for 70% of the costs in irrigated and rainfed wheat production.<sup>(6)</sup>
- Approximately 30% of the value added to wheat production in Turkey is exported. <sup>(7)</sup>
- Due to high input costs, farmers often prefer to spend less money on certified seeds.
- 75% of wheat production in Turkey occurs under dry conditions. A 10-15% decrease in rainfall is expected due to climate change, leading to more frequent and intense drought periods.

## SOURCES:

(1) TÜİK

(2) TÜİK

(3) TÜİK

(4) TÜİK

(5) TÜİK

(6) Frankfurt School of Finance and Management Calculations.

(7) Frankfurt School of Finance and Management, 2022-2023 Production Year Calculations

At the Wheat Workshop held in Ankara on December 15, 2022, with the slogan " Sow wheat, gather life," critical topics regarding the strategic importance of wheat production improvement were addressed.

Within the workshop's scope, the topics raised by participating stakeholders were categorized under the headings of "Environmental, Social, and Governance," including both financial and non-financial "problems and proposed solutions".

The actions to be taken in the short, medium, and long term for the mentioned topics were discussed in the "Highlighted Topics" section of the report.

# WORKSHOP OPENING SPEECHES

## İZLEM ERDEM

Türkiye İş Bankası A.Ş.

Assistant General Manager

*"The rise in cereal production has slowed down"*

The importance of agriculture and wheat has been more clearly understood in this period when global concerns have increased due to climate change, regional threats, the pandemic, the Russia-Ukraine war, and production constraints. Plant production in the world has increased more than three times in parallel with global production in the last 50 years. Although cereal production on an annual basis fluctuates significantly depending on climatic conditions, it generally tends to increase. However, it should be noted that the increase in cereal production has slowed down, as in other crops, especially after 2010, due to the impact of global warming.

*"Risks persist for wheat supply"*

The ongoing war between Russia and Ukraine, Turkey's leading suppliers of wheat for flour and sunflower with low sufficiency rates, indicates that there may be problems in the production and supply of these products.

The concerns have been heightened by the significant decrease of approximately 43.6% in wheat imports from Russia in the first quarter of 2022, which accounted for about 70% of Turkey's wheat imports. To prevent a global food crisis, especially for countries involved in the conflict, diplomatic efforts have formed a "grain corridor" that allows exports, particularly in the grain category. As a result, wheat imports from these two countries have continued to remain strong. However, the temporary nature of the grain corridor agreement and the complications surrounding the agreement suggest that grain imports from the region may face disruptions. Moreover, the downward revision of expectations for global wheat production in the 2022/2023 period due to adverse climate conditions and India's decision to halt wheat exports and restrict flour exports to protect the domestic market indicate ongoing risks regarding wheat supply and prices. This demonstrates that wheat has become a critical commodity for us and the world.

*"The biggest problem in agriculture is productivity."*

As in the world, the biggest problem in agriculture in our country is productivity. Therefore, the only thing that can be done against the increase in fertilizer, diesel, medicine, and energy prices is to increase productivity.

Turkey, which has great potential in the field of agriculture, is among the largest producers of 55 agricultural products in the world. Therefore, if everyone fulfills their responsibilities in agriculture, we will be able to reach a much more productive point in our country and the world in the future.

*"We want to open new and promising pages in the story of wheat."*

We are diligently working to provide increasingly impactful contributions to agricultural banking. As Turkey's Bank, we strive to be the leading private bank that brings together agriculture, finance, and technology with the purpose of benefiting farmers. We aim to provide favorable financing conditions and promote the effective use of technology, less input usage, higher yields, and more sustainable agricultural production.

Agriculture represents caring for our past, present, and future and preserving our national values. Therefore, the existence of this workshop focusing on wheat and its valuable outputs is crucial.

All stakeholders must collaborate to find and implement definitive and sustainable agricultural solutions. With the "Wheat Workshop," we aim to enhance our knowledge in alliance with experts well-versed in the industry's dynamics. We consider ourselves a part of the agricultural value chain and a partner to relevant sectors. We aspire to open new and promising chapters in the story of wheat.

## **İBRAHİM OĞUZ**

**Frankfurt School of Finance & Management Agricultural Field Research Group Manager**

*"Inadequacies can be overcome with common mind and will"*

As a result of our dependence on foreign inputs in agricultural production, one-third of the total added value from wheat production goes abroad. Accordingly, especially in fragile economies, foreign dependency causes food inflation that is difficult to control. The problems experienced in production, and their solutions are well-known. At this point, it is essential for all sector stakeholders to overcome the inadequacies by forming a common mind and will. Such workshops are precisely the opportunity for the necessary cooperation.

## **OĞUZ BARDAK**

**EFSE Development Facility Investment Manager**

*"Contribution to the sustainability of small businesses is essential "*

Every idea put forward is a ray of hope for the future of agriculture. It is also important to contribute to the sustainability of small enterprises in agriculture. In Turkey and the countries where we are active, we prioritize rural areas in agriculture and aim to support small businesses and facilitate their access to finance.

## PARTICIPANTS

	Name /Surname	Company
1	Abdulveli Yıldırım	Tekfen Agricultural Research and Production and Marketing Department - Assistant Operation Manager
2	Ahmet Kuzu	Ankara Leading Farmer - Fertiliser Seed Supplier
3	Akanay Gülkanat	Türkiye İş Bank Inc. - Agricultural Banking Marketing Department
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24	Göktu Kopmaz	Ankara – Leading Farmer

Name /Surname		Company
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26	Hacı Ömer Güler	Seed Growers Sub-union - Chairman of the Board of Director
27	Hanifi Sarı	Seed Industrialists' and Producers' Sub-union - Board Member
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35	Kamil Adem	Ulusoy Flour Inc. - Vice Chairman of the Board of Directors
36	Kayhan Ünal	TMO - TOBB Agricultural Products Licensed Warehousing Ind. and Trade Inc. – LIDAS General Manager - Board Member
37	M. Muhittin Bıyıkoğlu	Ankara Beet Planters Cooperative - Chairman of the Board of Directors
38	Mehmet Çıkrıkçılı	Hayrabolu - Leading Farmer
39	Mehmet Erol Sözen	Konya - Honorary President of Leading Farmer Association
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41	Metin Yüksel Bölüm	Türkiye İş Bank Inc. - Agricultural Banking Marketing Department
42	Mine Ataman	Author, Founder of Seed Platform
43	Muharrem Caferoğulları	Diyarbakır - Leading Farmer
44	Murat Işıkoğlu	MR Agro Agriculture Consultancy Founder
45	Mustafa Alper Devran	Türkiye İş Bank Inc. - Agricultural Banking Marketing Department
46	Nida Cihan Doğutan	Türkiye İş Bank Inc. - Agricultural Banking Marketing Department
47	Nihad İlhan	Azim Group - Vice Chairman of the Board of Directors
48	Oğuz Bardak	Finance in Motion Investment Manager
49	Önder Dede	Nuh'un Ankara Pasta Inc.- Agricultural Engineer - Purchasing Manager

Name /Surname		Company
50	Özgen Özata	Türkiye İş Bank Inc. SME and Business Banking Sales Department
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53	Prof. Dr. Saime Ünver	Ankara University - Academician
54	Prof. Dr. Aydın Alp	Dicle University - Academician
55	Prof. Dr. Engin Kinacı	TEMA Volunteer and Science Committee Member
56	Prof. Dr. Erdoğan Güneş	Ankara University - Faculty of Agriculture, Department of Economics
57	Prof. Dr. Hamit Köksel	Turkish Flour Industrialists Federation (TUSAF) - Academician
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62	Selami Yazar	Plant Breeders Sub-association - Chairman of the Board of Directors, Seed Growers Association - Vice President
63	Serhat Emre Yağlıkara	Ankara - Leading Farmer
64	Serkan Boy	Soil Products Office - Branch Manager
65	Sevim Halisyama	TÜRİB (Turkish Commodity Exchange) Director
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## CLOSING



# REPORT METHODOLOGY

- The groups have been selected under the main headings of Environmental, Social and Governance.
- The views of the participants have been kept faithful to impartiality.
- The topics discussed in the workshop are listed as "Problems" and "Proposed Solutions" by considering the groupings

# ENVIRONMENTAL FACTORS



## SEED

<b><u>PROBLEMS</u></b>	<b><u>PROPOSED SOLUTIONS</u></b>
<ul style="list-style-type: none"><li>• The lack of sufficient demand for drought-resistant seeds in the market negatively affects the focus of researchers developing seed breeding for arid areas.</li><li>• Insufficient R&amp;D support in seed breeding studies.</li><li>• Inadequate attention is given to the use of certified seeds suitable for climate and soil conditions.</li><li>• Decreased yield and productivity due to farmers resorting to cheaper or low-quality fertilizers as costs rise.</li><li>• Variation in the optimal seed quantity from farmer to farmer and from region to region.</li><li>• Insufficient seed trials conducted to demonstrate the necessity of using certified seeds.</li><li>• Inability to determine the appropriate seed quantity accurately.</li></ul>	<ul style="list-style-type: none"><li>• Seed breeding and diversification research should be supported, and breeders' rights should be protected.</li><li>• Drought-resistant seeds should be developed to improve seed quality.</li><li>• Seed varieties suitable for specific geographies and regional climates should be used.</li><li>• Resources should be created for seed development studies. Support should be provided to encourage the use of certified seeds. Awareness trainings on the use of certified seeds should be organized.</li><li>• Awareness trainings should be provided to correctly determine how much seed should be sown.</li><li>• Wheat variety should be developed in each region or district, and after being tested for 5 years in the grain field, it should be sold and produced to farmers. Field days should be organized in provinces and districts.</li><li>• A special support system should be extended to seed breeding regions, seed exchanges should be activated and price stability should be ensured.</li></ul>

# SOIL

<b><u>PROBLEMS</u></b>	<b><u>PROPOSED SOLUTIONS</u></b>
<ul style="list-style-type: none"> <li>• Soil-mechanization-efficiency problems               <ul style="list-style-type: none"> <li>– Soil analyses and plant nutrition specific to wet and dry conditions are not common.</li> <li>– Insufficient knowledge of the damage caused by over-tillage of the soil.</li> <li>– Low energy efficiency due to old machinery and equipment used in wheat production.</li> <li>– Failure to develop financial literacy and lack of widespread use of cost-reducing and productivity-enhancing practices.</li> <li>– Excessive and unconscious use of pesticides due to the lack of integrated disease and pest management, the negative impact of the above issue on the environment and ecosystem, and the consequent cost increase.</li> <li>– In regions with fertile soils, soil productivity cannot be maintained. In addition, the desired yield cannot be obtained from the unit area because crop rotation procedures and benefits must be better explained to the producers.</li> </ul> </li> <li>• Decrease in soil quality:               <ul style="list-style-type: none"> <li>– Lack of awareness about the insufficient amount of organic matter in the soil.</li> <li>– Decrease in organic matter in the soil over the years.</li> <li>– Unawareness of the negative impacts of alkaline soil, which constitutes a large portion of wheat-growing soils.</li> <li>– Low level of sensitivity towards preventing damage caused by excessive soil compaction from plowing, heavy tractors, and combine harvesters.</li> <li>– Continued practice of stubble burning, although it is not widespread.</li> <li>– Persistence of incorrect tillage techniques.</li> <li>– Insufficient attention to wind erosion.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Focus on productivity increase:               <ul style="list-style-type: none"> <li>– Soil analysis should be carried out before planting; plant nutrition recommendations suitable for the region and soil should be made easily accessible to producers through digital applications that can be made widespread.</li> <li>– Awareness of fertilizer should be raised, incentives for organo-mineral fertilization should be continued, and false information on labels by fertilizer-producing companies should be subject to strict control.</li> <li>– Plant nutrition and protection practices that increase grain quality in wheat should be widespread, and precision agriculture techniques should be developed.</li> <li>– Cost-reducing practices should be developed in wheat production and awareness trainings should be organized to improve the financial literacy of producers.</li> <li>– Energy and resource-efficient tools, equipment, and tractors should be popularized.</li> </ul> </li> <li>• Financial facilitations should be provided for accessing equipment that reduces carbon footprint.</li> <li>• Appropriate soil management methods that prioritize soil fertility should be identified and promoted to increase awareness.</li> <li>• Awareness of integrated pest management should be enhanced to encourage farmers to use fewer pesticides, and effective disease and pest control methods should be widely disseminated.</li> <li>• The use of drones can be evaluated for pesticide application.</li> <li>• Government support should be provided to producer organizations for the use of drones.</li> <li>• The proper and timely use of pesticides and fertilizers should be ensured.</li> </ul>

<ul style="list-style-type: none"> <li>• Decrease in wheat cultivation areas: <ul style="list-style-type: none"> <li>– Increased costs and inefficient production due to small and fragmented parcels.</li> <li>– Decrease in wheat cultivation areas due to other alternative crops offering higher profits.</li> <li>– Soil and water problems encountered in wheat production.</li> <li>– Increase in soil salinity due to excessive irrigation and water quality issues.</li> </ul> </li>   <li>– Industrial and environmental waste (heavy metals, toxins, etc.) mixing with irrigation water and reaching the soil.</li> <li>– Decreasing water-holding capacity of the soil over time.</li> <li>– Inadequate drainage due to unwise irrigation practices in regions prone to drought and desertification.</li> </ul>	<ul style="list-style-type: none"> <li>• Positive privileges should be granted to the financial sector to facilitate access to drone equipment for farmers.</li> <li>• The importance and benefits of crop rotation should be explained to farmers through training programs that offer different perspectives.</li> <li>• Automatic steering systems should be widely adopted.</li> <li>• Steering system software should be developed to incorporate climate suitability and planting methods.</li>   <li>• Soil quality should be improved: <ul style="list-style-type: none"> <li>– Small and medium-scale wheat producers should be encouraged to engage in livestock farming to promote integrated production, while ensuring that the resulting animal manure is returned to the fields, thus supporting the formation of carbon cycles in the soil.</li> <li>– Actions should be taken to preserve and increase the organic matter content in the soil by implementing techniques such as Conservation Agriculture (no-till farming).</li> <li>– Awareness-raising practices that promote the use of organic matter-enhancing substances such as humic acid, leonardite, green manure, and farmyard manure should be encouraged, along with providing education on these practices.</li> <li>– Mechanisms should be developed to reward enterprises implementing organic matter-enhancing practices.</li> <li>– Positive discrimination should be applied to facilitate access to finance for businesses that prioritize sustainability.</li> <li>– The use of sulfur fertilizers should be promoted to improve the properties of alkaline soils.</li> <li>– Soil blasting support should be introduced to prevent soil compaction in heavy soil structures.</li> <li>– Support should be given to each producer organization in providing soil blasting equipment.</li> </ul> </li> </ul>
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- Through restorative agriculture<sup>(1)</sup>, erosion should be prevented, the soil ecosystem should be re-functionalized, and wheat production capacity should be increased qualitatively and quantitatively.
- Deterrent sanctions should be introduced for stubble burning.
- Wheat production areas should be protected.
- The problem of small and fragmented parcels should be solved, and more resources should be allocated for land consolidation.
- Production areas should be protected, and empty lands where there is no production should be brought into production.
- In order for the incomes to be obtained in wheat production to be similar, wheat price should be determined so that it does not differ too much from the incomes of alternative crops.
- Correct irrigation systems should be used.
- The use of pressurized irrigation systems should be made widespread.
- In-field irrigation supports should be continued, and access to finance should be facilitated.
- Access to urban and industrial wastes polluting water resources to water resources should be prevented.
- The importance given to soil improvement should be increased, practices to increase the soil's water retention capacity should be developed, and the use of water-retaining products should be encouraged.
- To irrigate more wheat area, closed-system pressurized irrigation transmission lines should be extended, and more resources should be allocated to convert open canal systems into closed systems.

*(1) Restorative agriculture: It is the name given to agricultural systems that include methods that improve and enrich the soil ecosystem while producing nutritious and high quality food.*

## CLIMATE CHANGE

<b><u>PROBLEMS</u></b>	<b><u>PROPOSED SOLUTIONS</u></b>
<ul style="list-style-type: none"><li>• Sudden climate fluctuations can cause delays in phenological stages, which can lead to deviations and yield quality losses during wheat harvesting.</li><li>• The opportunities to obtain early wheat are beginning to disappear due to climate change.</li><li>• Some previously unseen fungal diseases have started to appear in wheat due to climate change.</li></ul>	<ul style="list-style-type: none"><li>• Farmers should be educated and resilient practices should be developed regarding climate change and drought.</li><li>• Drought action plans should be continually revised to raise awareness among farmers.</li><li>• Resilient production models should be established to withstand drought and cold, which pose a risk to losing our temperate climate characteristic. The capacities of wheat silos should be increased to accommodate delays in obtaining early wheat.</li><li>• Investments should be made in closed-system projects that conserve water in the transfer of water from dams to agricultural lands, aiming to reduce the impacts of drought.</li><li>• Scientific research institutions and universities should be encouraged to conduct research on disease and pest control due to climate change.</li><li>• The use of systems that provide early climate warnings should be promoted, and investments should be made in stations that detect diseases at their early stages, enabling timely and accurate spraying, leading to cost-effective measures and increased yields.</li><li>• Afforestation and prioritizing tree planting should be emphasized in the fight against climate change.</li></ul>

# SOCIAL FACTORS



## SOCIOLOGICAL STRUCTURE / CULTURAL HABITS

<b><u>PROBLEMS</u></b>	<b><u>PROPOSED SOLUTIONS</u></b>
<ul style="list-style-type: none"> <li>• Limited social life opportunities in rural areas causing migration from village to city and decrease in agricultural population.</li> <li>• Increase in input costs and farmers' inability to earn money and prefer not to produce wheat or do not sow wheat. For example, although Southeastern Anatolia is one of the regions where durum wheat grows best, there is a shift to peanut production in this region due to the increase in costs.</li> <li>• Since storage is costly, wastage can be high during the storage process, and when prices do not go as expected, the burden borne by the farmer increases with the storage cost. For this reason, farmers are forced to store wheat with traditional methods.</li> <li>• Farmers planting what their next-door neighbours are planting or planting according to the information on social media without discriminating between varieties.</li> <li>• Considering that more than 5 million loaves of bread are wasted daily, wheat production is seriously wasted.</li> <li>• In order to reduce costs, flour industrialists tend to use cheaper low-quality products instead of high-end products, and for this reason, there is no awareness of better-quality wheat production.</li> </ul>	<ul style="list-style-type: none"> <li>• The reasons for migration from rural to urban areas should be eliminated by equalizing the living opportunities in rural areas with urban areas.</li> <li>• Starting from pre-school education, climate, seed, and soil should be taught.</li> <li>• Rural supports should be increased, and the sociological structure should be preserved by ensuring permanence in rural areas.</li> <li>• The prestige of farming should be increased.</li> <li>• The importance of cooperative organizations to maintain agricultural employment and production and to enable farmers to produce more profitably.</li> <li>• The importance of wheat production should be emphasized, and incentive arrangements should be made to create economies of scale.</li> <li>• Wheat that can be sold at high prices, which will give us an advantage over other countries.</li> <li>• Export revenues should be increased by branding our varieties.</li> <li>• Waste of bread returning from markets and bakeries should be prevented.</li> <li>• The number and capacity of licensed warehouses should be increased to contribute to the farmers' economy, as inadequate wheat storage facilities are a problem.</li> <li>• The traceability of global wheat markets should be improved through digital platforms. To achieve this, the number of our representatives/agricultural advisors abroad should be increased.</li> </ul>

## USE OF DIGITAL TECHNOLOGIES

<b><u>PROBLEMS</u></b>	<b><u>PROPOSED SOLUTIONS</u></b>
<ul style="list-style-type: none"> <li>• The difficulties in yield estimation due to deficiencies in data and modeling.</li> <li>• Insufficient provision of data for agricultural areas, despite meteorological forecasts covering urban areas in Turkey.</li> <li>• Challenges observed in integrating the provided data into prediction models.</li> <li>• Difficulties in accessing guiding data on what to plant and harvest in a region, leading to the improper use of suitable seeds.</li> <li>• Limited availability of high-tech early warning systems in wheat production.</li> <li>• Inadequacies in processing production techniques accurately, safely and scientifically with real-time data.</li> </ul>	<ul style="list-style-type: none"> <li>• In order to obtain more and healthier data, the Farmer Registration System should be implemented effectively. To make accurate yield predictions, the sowing quantities should be determined early on and yield modeling should be conducted based on climate conditions.</li> <li>• The Ministry of Agriculture should be supported in transitioning to a watershed-based production model to determine what crops should be cultivated in each region.</li> <li>• The use of technology should be increased. For example, sensors used for fertilizer, pesticide, and irrigation can provide guidance to farmers and enhance productivity.</li> <li>• In the case of regional diseases, farmers in the affected areas should be alerted to potential risks through SMS or instant notifications.</li> <li>• Agricultural activities should be conducted with real-time data.</li> <li>• Digital agriculture applications should be utilized, feasibility studies should guide decision-making, satellite-based land monitoring systems should be utilized, and region-specific applications should be carried out using agricultural machinery equipped with special sensors.</li> <li>• Practical training should be provided to farmers on the correct use of smart farming technologies.</li> <li>• Smart farming practices should be rapidly implemented in irrigable areas to determine soil water capacities, measure plant moisture needs through moisture sensors, and achieve maximum yield through automated irrigation systems.</li> <li>• Phone applications, social media, and TV channels should be effectively utilized for educational purposes.</li> <li>• Digital applications that gain the trust of farmers should be promoted, and instead of theoretical knowledge that does not rely on data, practical or applicable experiences combined with expert opinions should be communicated to farmers.</li> </ul>

## INFORMATION NEED / MISINFORMATION

<b><u>PROBLEMS</u></b>	<b><u>PROPOSED SOLUTIONS</u></b>
<ul style="list-style-type: none"><li>• The need for training of farmers.</li><li>• Resource inefficiency due to low annual capacity utilisation rates of equipment and tractors due to small scale.</li><li>• Grain losses may occur due to the fact that combine harvesters are old and their drivers are inexperienced; serious losses may occur due to this situation, especially in the first harvest.</li></ul>	<ul style="list-style-type: none"><li>• Leading farmers should direct farmers in their regions towards innovation.</li><li>• Environments should be created where farmers can be informed about good agricultural practices through fairs and similar activities.</li><li>• Activities should be planned to attract the attention of not only farmers but also young people and children who are not farmers.</li><li>• In places where economies of scale cannot be achieved, agricultural techno-parks should be established to prevent the supply of more inefficient technology than needed, as in developed countries.</li><li>• In order to minimise grain losses during harvesting, calibration of harvesters should be monitored and users should be subjected to continuous training.</li><li>• The development of new generation electric tractors in our country should be supported to contribute to the reduction of carbon footprint emissions.</li><li>• Measurement of carbon footprint in wheat production and dissemination of carbon footprint practices should be ensured.</li></ul>

# GOVERNANCE FACTORS



## LACK OF POLICY

<b><u>PROBLEMS</u></b>	<b><u>PROPOSED SOLUTIONS</u></b>
<ul style="list-style-type: none"> <li>• Farmers' perception that there is no continuity and transparency in wheat production and import policies.</li> <li>• State support for agriculture is the same in all regions.</li> <li>• Failure to protect fertile wheat agricultural areas.</li> <li>• The conversion of cultivable lands to other uses such as industry, grasslands, forests, and wetlands, followed by attempts to convert them back into farmland.</li> <li>• The pressure exerted by the government on wheat prices causing sustainability issues in production.</li> <li>• The ability to adjust the selling price under the framework of duty-free and tax-free imports while not being able to adjust the costs, leading to potential losses for the producers.</li> <li>• Difficulties and limitations in the implementation of the Electronic Warehouse Receipt (ELÜS), with producers facing challenges in accessing ELÜS programs.</li> </ul>	<ul style="list-style-type: none"> <li>• Establishment of a "Wheat Producers' Association" can be a guide for decision makers during policy determinations.</li> <li>• Transparent policies that will prevent the fluctuation of wheat production and price balance from year to year and increase the reliability of the sector should be followed and its awareness should be increased.</li> <li>• National support policies should be complemented with local/regional support policies tailored to the specific needs of the areas, aiming to ensure the sustainability of wheat production.</li> <li>• The deficiencies in the implementation of Law No. 5403 on Soil and Land Conservation should be addressed to protect productive wheat farming areas more effectively.</li> <li>• Wheat price policies should be determined in favor of the producers, taking into account the costs, and should be designed in a way that instills confidence in the producers.</li> <li>• The public sector should manage input costs through effective and timely intervention and prevent practices that distort competition.</li> <li>• Since wheat is mostly preferred by farmers engaged in dry agriculture, policies should be supported to encourage farmers engaged in irrigated agriculture to prefer wheat.</li> <li>• Regulations of Turkish Grain Board (TMO) should be made by considering production-consumption-industry balances.</li> </ul>

- In licensed warehousing, in addition to product quality and quantity guarantees, the development of a secondary Electronic Warehouse Receipt(ELÜS) market and the ability to sell products through ELÜS, use them as collateral for loans, and the government support provided for storage, rent, and product analysis should be utilized to increase the benefits for all parties involved and ensure access for the producers.
- Comprehensive regulations should be implemented to ensure the benefits of ELÜS loans for all parties and to deepen the market's liquidity.
- For import/export balance, wheat production should be encouraged through incentive and support models (support models should be dynamic).
- Import policies should be regulated with a perspective that benefits sustainable wheat production, taking into consideration the interests of domestic producers. Subsidies should be balanced between industrialists and producers.
- Instead of intermediary firms, direct procurement of wheat should be conducted by the Turkish Grain Board (TMO) to reduce procurement costs.
- In the fight against food inflation, the burden of taxes in the production, marketing, and sales chain should be reduced, considering that cheap food can contribute to this goal.

## AUDIT

<b><u>PROBLEMS</u></b>	<b><u>PROPOSED SOLUTIONS</u></b>
<ul style="list-style-type: none"> <li>• It is thought that flour production and export processes are not under control.</li> <li>• Contract farming is not widespread in wheat production. Contracts do not work effectively in agricultural production.</li> <li>• There are concerns in the sector that the companies producing/selling/importing agricultural inputs (seeds, pesticides, fertilizers) are not adequately and effectively audited in terms of both the accuracy of the contents of the products they sell and their compliance with free competition conditions.</li> </ul>	<ul style="list-style-type: none"> <li>• Every stage of flour exports starting from the field should be monitored and flour production should be free from processes that cause quality loss.</li> <li>• Contract production should be increased and made widespread.</li> <li>• In contracted production, the legal authority should play a more effective role in the implementation of contract terms as "guarantor" and "supervisor".</li> <li>• Seed companies and other input supplying organisations, which are now approaching 1,500 in number, should be better and more frequently audited. Under the stairs productions should be prevented.</li> </ul>

## STRUCTURAL / SYSTEM PROBLEMS

<b><u>PROBLEMS</u></b>	<b><u>PROPOSED SOLUTIONS</u></b>
<ul style="list-style-type: none"> <li>• The fragmented structure of wheat fields prevents the utilization of economies of scale.</li> <li>• The average age of wheat-producing farmers is high due to the lack of participation of young people in agriculture.</li> <li>• The intensive use of agricultural support loans (ELUS) in certain regions beyond the target group of farmers.</li> <li>• Agricultural engineers or academics in government offices being occupied with data entry tasks in the office, which limits their opportunities to visit the field and hear the problems of farmers.</li> <li>• Insufficient support for projects that could reduce energy costs, such as solar energy, and difficulties in accessing cheap energy due to factors such as limited support and lengthy bureaucratic procedures on the public platform.</li> </ul>	<ul style="list-style-type: none"> <li>• Measures should be taken to prevent the physical division of lands due to inheritance issues, and the relevant law should be implemented without delay.</li> <li>• Comprehensive and long-term incentive packages should be offered to attract young people to agriculture, including flexibility in social security access and incentives.</li> <li>• Ecosystem models that facilitate transportation and supply processes and bring together the flour industry, licensed warehouses, and producers should be established.</li> <li>• Agricultural engineers should be empowered to be more effective in engaging with farmers and the field.</li> <li>• Support for the use of solar energy in wheat production should be provided, and procedures should be expedited.</li> <li>• Agricultural data should be made more reliable, accessible, and transparent.</li> </ul>

- Lack of transparency and real-time availability of agricultural production/consumption data, hindering the attainment of actionable insights.
- Delay in announcing the base prices for wheat.
- Insufficient development of cooperation and organization among sector stakeholders to address common issues.
- Negative impact on farmers when products are directly offered for sale on the domestic market without being processed, in cases where inspections related to imports under the inward processing regime are inadequate.
- The support payments made to farmers being initially deposited into the accounts of Electricity Distribution Companies, requiring farmers to follow a specific procedure to receive their funds.
- Flour mills operating with idle capacity. It is observed that the capacity utilization rates of flour factories, which are opened in excessive numbers without proper planning and concentrated in certain regions, occasionally drop to levels as low as 40%.

- Prices and support should be announced before production begins to demonstrate that farmers will make a profit.
- In contract farming, instead of working with numerous producers to find the required tonnage of products, main companies should be able to conduct operations with a single farmers' organization.
- Quality-based purchases should be made through the Grain Board of Turkey (TMO) by implementing contract farming.
- Free market conditions should be supported.
- Emphasis should be placed on cooperatives, and access to financing options should be increased.
- Interagency communication and collaboration should be strengthened to ensure that all stakeholders progress towards the same goal using defined methods.
- The Ministry of Agriculture should increase regional information meetings.
- Practices that facilitate the lives of farmers should be developed concerning support payments.
- Support should be provided to address the capacity-enhancing structural issues of our flour mills. In the case of new establishments, permits should be granted based on the region's capacity utilization status.
- Farmers should be encouraged to come together at the local level and engage in negotiations with other market players. In this regard, İşBank's agricultural specialty branches can create opportunities for such gatherings.
- Agricultural chambers, cooperatives, and unions should purchase modern agricultural machinery and create models that allow their members to benefit from them collectively using the "imece" method (collective work).

## ACCESS TO FINANCE

<b><u>PROBLEMS</u></b>	<b><u>PROPOSED SOLUTIONS</u></b>
<ul style="list-style-type: none"> <li>• ELUS, which contributes as a source of financing, cannot provide sufficient contribution due to the price pressure imposed by TMO (Grain Board).</li> <li>• Young people need help accessing agricultural financing, especially providing collateral such as mortgages.</li> <li>• TARSIM (Agricultural Insurance Pool) does not fully cover all the risks and losses incurred.</li> <li>• Support schemes in wheat production need to be corrected.</li> <li>• Delayed disbursement of support payments to farmers.</li> <li>• Many farmers are only familiar with direct support schemes and must be made aware of other indirect support programs, leading to issues in benefiting from the available support.</li> <li>• Financing costs during inflationary periods increase the burden on farmers and make production more challenging.</li> <li>• Limited availability of financing for land acquisition and shorter repayment terms.</li> </ul>	<ul style="list-style-type: none"> <li>• A workshop should be organized specifically focusing on ELUS as a financial source, and considerations regarding TMO's price pressure should be taken into account during this workshop.</li> <li>• A Young Agriculture Card should be established to provide special campaigns for young individuals engaged in agriculture. A more flexible approach should be adopted towards mortgage issues, and the collateral problem for young farmers should be resolved through the resources of the Credit Guarantee Fund (KGF).</li> <li>• Area-based support should be provided, and incentives should be given on a watershed/region basis. Farmers should be educated and informed about support programs.</li> <li>• Banks should finance investments in technology and pressurized irrigation. Additionally, they should take a leading role in directing farmers towards technology.</li> <li>• During inflationary periods, financial institutions should not perceive higher risk factors in agricultural loans and should establish access conditions for financing that align with this situation.</li> <li>• Banks should play an incentivizing role by diversifying credit options and offering additional advantages in financing yield-oriented investments. For example, government support should be provided for those using machines that apply fertilizers at varying rates (smart fertilization machines), and banks should support the financing of these machines.</li> <li>• In particular, financing for the purchase of agricultural land should be facilitated and long-term financing options should be offered as in housing loans.</li> </ul>

	<ul style="list-style-type: none"><li>• TARSIM application should be used more effectively. In case of compensation, the producer should be paid faster.</li><li>• The results of TARSIM Income Protection Insurance and Drought Insurance should be evaluated, and if it is confirmed that a positive picture is achieved, work should be done to expand these insurance types.</li><li>• Support payment dates should be brought earlier and farmers should be relieved.</li></ul>
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# HIGHLIGHTS

ENVIRONMENTAL FACTORS	SOCIAL FACTORS	GOVERNANCE FACTORS
<ul style="list-style-type: none"><li>• Seed</li><li>• Soil</li><li>• Climate Change</li></ul>	<ul style="list-style-type: none"><li>• Sociological Structure / Cultural Habits</li><li>• Use of Digital Technologies</li><li>• Information Need / Misinformation</li></ul>	<ul style="list-style-type: none"><li>• Lack of Policy</li><li>• Audit</li><li>• Structural / Systemic Problems</li><li>• Access to Finance</li></ul>

Within the workshop's scope, the issues raised by the participating stakeholders were listed under the headings of "Environmental, Social and Governance", including financial and non-financial "problems and solution suggestions".

When the actions to be taken in the short/medium/long term for the issues mentioned in the report are evaluated:

## • In the short term:

1. Farmer trainings should be increased.
2. Access to up-to-date statistical data should be provided.
3. Support should be provided by financing institutions for appropriate seed variety development projects.
4. Low-interest financing/credit packages should be created by funding institutions for farmers using certified seeds.
5. Arrangements should be made for a healthier functioning of the ELUS credit market.
6. Renewable energy sources such as solar power plants should be used to reduce energy costs.
7. Financial institutions should provide support for the financing of renewable energy resources.
8. Efforts should be made to popularise TARSIM.

### • In the medium term:

1. Sustainable agricultural policies should be reviewed and updated.
2. Production planning should be made to increase expected benefits and productivity.
3. Contract production should be made widespread.
4. The young population should be orientated toward agriculture
5. Fragmentation of agricultural lands should be reduced.
6. Market depth should be ensured, and licensed warehousing should be made widespread.
7. Input costs should be reduced; technology, smart agriculture, and high mechanization should be used.
8. The soil characteristics of the region and locality should determine crops and varieties.
9. Irrigation infrastructures should be improved.
10. Cooperation between stakeholders should be increased.
11. Correct soil cultivation/production suitable for the soil should be carried out.
12. Financing sources should be diversified, and financing opportunities should be increased.

### • In the long term:

1. Continuously changing climatic conditions should be analyzed, and appropriate production conditions should be studied.
2. Measures should be taken to reduce foreign dependency on wheat production.
3. Sustainable wheat agriculture and low-carbon emission wheat production should be introduced. (Burası için belki karbon ayak izi basın bültenine yönlendirme yapabiliriz eğer bültenin İngilizcesini de yayınlayacaksak)
4. High-quality wheat varieties resistant to drought should be developed.
5. Global branding should be ensured in flour, pasta, biscuits, and bakery products.
6. Bakery products with high added value should be developed.
7. Foreign dependency on input costs should be reduced.

These issues have come to the fore, and it has been observed that they need to be analyzed in more depth.

As İşbank, we are a vital link in the agricultural value chain rather than being a conventional banking institution. In this direction, we aim to increase our knowledge and insight on wheat and, thus, our ability to be a solution partner.

## ABOUT SUSTAINFINANCE

The report of the workshop, organized in cooperation with Türkiye İş Bankası, EFSE Development Facility, and Frankfurt School of Finance & Management, was compiled by Sustainfinance team Ayşe Kaşıkçı, İlkay Demirdağ and Kübra Koldemir based on the views raised by stakeholders. (*Contact: [sustainfinance.org](http://sustainfinance.org), [kubra@sustainfinance.org](mailto:kubra@sustainfinance.org)*)

SustainFinance is a not-for-profit organization with a vision to integrate sustainability into the decision-making processes of the investment industry. At the same time, SustainFinance hosts different perspectives through its platform, where multiple stakeholders can interact, express their views and share them.

*\* Throughout the report, groupings have been made under the main headings of "Environmental, Social and Governance" and the participants' views have been adhered to impartially.*

**SOW** *Wheat*  
**GATHER** *Life*

**IMECE WORKSHOPS**

**WHEAT**

December 2022

Ankara