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ESG REPORTING IN UKRAINE'S AGRICULTURAL SECTOR: EMPIRICAL INSIGHTS AND PATHWAYS TO INTEGRATION WITH THE FSDN

ESG-ЗВІТНІСТЬ В АГРОСЕКТОРІ УКРАЇНИ: ЕМПІРИЧНИЙ АНАЛІЗ І ШЛЯХИ ІНТЕГРАЦІЇ ДО FSDN

Abstract. Introduction. *As a result of Russia's full-scale invasion, Ukraine's agricultural sector has entered a state of deep systemic crisis. Damage to production and logistics infrastructure, labour shortages due to population displacement, loss of access to agricultural land, and disruptions to supply chains and export operations have created unprecedented challenges for the sector's functioning. At the same time, Ukraine was granted candidate status for accession to the European Union and committed to implementing the European Green Deal. One of the key instruments of this policy is the introduction of mandatory non-financial reporting by the CSRD, the EU Taxonomy, and the ESRS standards. Thus, Ukrainian agricultural enterprises face a dual challenge: ensuring transparency and compliance with European reporting standards under the difficult war and post-war recovery conditions.* ***Purpose.*** *The article aims to analyse the readiness of Ukrainian agricultural enterprises to implement ESG reporting in the context of post-war recovery, the "green" transformation, and European integration. The study covers two components: empirical findings from interviews with company executives and chief accountants regarding sustainability practices and reporting barriers, as well as a comparative analysis of Ukrainian statistical, environmental, and tax reporting against the indicators of the FSDN system.* ***Methods.*** *The research methodology is based on semi-structured interviews with 30 executives and chief accountants of agricultural enterprises from 18 regions of Ukraine. The interviews were conducted between April and July 2024. Thematic grouping and quantitative analysis made it possible to identify the main barriers and drivers for implementing ESG reporting. Additionally, a comparative analysis was carried out between the indicators of Ukrainian reporting and the corresponding FSDN indicators, classified into environmental, economic, and social dimensions.* ***Results.*** *The results of the study showed that many Ukrainian agricultural enterprises are in fact implementing ESG practices, particularly in the area of sustainable soil management; however, these practices are rarely formalised in official reporting. The main reasons for avoiding non-financial reporting include the absence of regulatory requirements, low levels of digital integration, lack of professional expertise, and distrust in state institutions. The war, mobilisation, and risks – particularly those related to land turnover – also act*

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as constraining factors. At the same time, economic incentives such as access to financing and entry into sales markets remain the primary motivating factors for reporting. The comparative analysis with the FSDN framework revealed partial alignment of Ukrainian reporting forms (59.5%), with a high level of coverage for economic indicators but low coverage for environmental and social indicators. The most significant gaps concern data on emissions, biodiversity, energy consumption, certification, social integration, and worker well-being. ***Conclusion.*** *The further development of ESG reporting in Ukraine's agricultural sector should be based on harmonisation with the European FSDN system, considering national specificities. Expanding the coverage of environmental and social indicators, standardising reporting formats, and establishing a unified digital framework for data collection and transmission by the FAIR principles is necessary. Key prerequisites include strengthening institutional capacity, supporting training programs, introducing independent auditing, and linking non-financial reporting to access to finance and markets. The formalisation of non-financial information and its reflection in ESG reports should become a regulatory requirement and a component of enterprises' competitive business strategy under wartime economic conditions. This will not only enhance transparency and investment attractiveness of Ukraine's agribusiness sector but also ensure its full integration into the EU's Common Agricultural Policy and the financial mechanisms of the "green" recovery.*

Keywords: *post-war recovery, green transition, European integration, sustainable development, ESG reporting, CSRD, FSDN.*

Анотація. *Унаслідок повномасштабного російського вторгнення аграрний сектор України опинився в умовах глибокої системної кризи. Пошкодження виробничої та логістичної інфраструктури, дефіцит трудових ресурсів через міграцію населення, втрата доступу до частини сільськогосподарських угідь, порушення ланцюгів постачання і функціонування експортних каналів створили безпрецедентні виклики для функціонування галузі. У той самий час Україна отримала статус кандидата на вступ до Європейського Союзу і зобов'язалась імплементувати політику Європейського зеленого курсу. Одним з ключових інструментів цієї політики є запровадження обов'язкового нефінансового звітування відповідно до вимог CSRD, таксономії ЄС та стандартів ESRS. Таким чином, українські аграрні підприємства опинилися перед подвійним викликом: забезпечити прозорість і відповідність європейським нормам звітності у складних умовах війни та післявоєнної відбудови.* ***Метою статті*** *є аналіз готовності аграрних підприємств України до впровадження ESG-звітності в контексті післявоєнної відбудови, «зеленої» трансформації та євроінтеграції. Дослідження охоплює два компоненти: емпіричні результати інтерв'ю з керівниками і головними бухгалтерами підприємств щодо практик сталого розвитку та бар'єрів для звітування, а також порівняльний аналіз української статистичної, екологічної та податкової звітності з індикаторами системи FSDN.* ***Методологія дослідження*** *базується на проведенні напівструктурованих інтерв'ю з 30 керівниками та головними бухгалтерами аграрних підприємств з 18 регіонів України. Інтерв'ю проведено впродовж квітня-липня 2024 року. Тематичне групування і кількісний аналіз дозволили виявити основні бар'єри та драйвери впровадження ESG-звітності. Додатково здійснено порівняльний аналіз показників української звітності з відповідними індикаторами FSDN, класифікованими за екологічними, економічними та соціальними вимірами. Результати дослідження засвідчили, що низка аграрних підприємств фактично впроваджують ESG-практики, зокрема у сфері ощадливого обробітку ґрунту, однак не формалізують їх у звітній документації. Основними причинами уникнення нефінансового звітування є відсутність нормативних вимог, низький рівень цифрової інтеграції, нестача фахових знань і недовіра до державних інституцій. Війна, мобілізація та ризики, зокрема, пов'язані з обігом земель, також є стримуючими факторами. Водночас саме економічні стимули, такі як залучення фінансування та вихід на ринки збуту, залишаються ключовими мотиваційними чинниками для звітування. Порівняльний аналіз з FSDN виявив часткову відповідність українських звітних форм (59,5%), з високим рівнем охоплення економічних індикаторів, але низьким рівнем екологічних і соціальних показників. Найбільші прогалини стосуються даних про викиди, біорізноманіття, енергоспоживання, сертифікацію, соціальну інтеграцію та добробут працівників. Подальший розвиток ESG-звітності в агросекторі України має ґрунтуватися на гармонізації з європейською системою FSDN з урахуванням національної специфіки. Необхідно розширити охоплення екологічних і соціальних індикаторів, уніфікувати звітні форми, створити єдиний цифровий контур збору та передачі даних відповідно до принципів FAIR. Ключовими умовами є: розвиток інституційної спроможності, підтримка навчальних програм, впровадження незалежного аудиту, а також прив'язка нефінансової звітності до доступу до фінансування й ринків. Формалізація нефінансової інформації та її відображення в ESG-звітах має стати не стільки вимогою регуляторів, скільки елементом конкурентної бізнес-стратегії підприємств в умовах воєнної економіки. Це дозволить не тільки підвищити прозорість і інвестиційну привабливість українського агросектору, але й забезпечити його повноцінну інтеграцію до спільної аграрної політики ЄС і фінансових механізмів «зеленої» відбудови.*

Ключові слова: *післявоєнна відбудова, «зелена» трансформація, євроінтеграція, сталий розвиток, ESG-звітність, CSRD, FSDN.*

Statement of the problem. As a result of the Russian armed aggression against Ukraine, 5.6 million Ukrainians left abroad, which caused a labour shortage in the agricultural sector of 1 million workers [1]. Losses to the agricultural sector of Ukraine exceed $80 billion, and the need for restoration amounts to $55.5 billion [2]. Ukraine has lost over 20% of its agricultural land. 2 million hectares are mined, leading to annual budget losses of more than $11 billion [3]. The harvest of grain and oilseed crops decreased from 107 million tons in 2021 to 77 million tons in 2024, and an additional drop of another 10% is expected in 2025 [4]. The devaluation of the national currency during the war period amounted to more than 25% [5]. Against this background, Ukraine was granted candidate status for accession to the European Union and undertook to meet the requirements of the European Green Deal.

Over the past two years, Ukraine has begun implementing its commitment to European integration in sustainable development, which is reflected in regulatory documents. In particular, the Strategy for the Development of Agriculture and Rural Areas in Ukraine until 2030 sets 7 strategic goals, including climate-oriented agriculture [6]. In addition, the National Energy and Climate Plan (NECP) until 2030 sets the task of reducing greenhouse gas emissions by at least 65% compared to the 1990 level [7]. In 2025, the government approved the Action Plan for establishing an emissions trading system, which provides for the launch of a carbon market by 2027 and the development of a system for monitoring and reporting greenhouse gas emissions [8]. In turn, the National Renewable Energy Action Plan until 2030 sets a benchmark of 27% of the share of renewable energy sources in final energy consumption [9]. To

monitor progress, the Ukrainian government also adopted a decree to ensure the achievement of the 17 Sustainable Development Goals, which contains a list of sustainable development indicators [10]. A Strategy for introducing sustainable development reporting by enterprises was also approved, which provides for harmonisation with the requirements of the CSRD and ESRS [11]. At the same time, the Entrepreneurship Development Fund implemented an Environmental and Social Management System (ESMS) for enterprises-beneficiaries of World Bank projects [12]. Finally, the National Bank of Ukraine published a White Paper on ESG Risk Management in the Financial Sector in 2025 [13].

Despite the strategic documents adopted in Ukraine, most agricultural enterprises remain outside the scope of such regulations as the Corporate Sustainability Reporting Directive (CSRD), the European Union Taxonomy for Sustainable Activities (EU Taxonomy), and the European Sustainability Reporting Standards (ESRS). Only large agricultural holdings are covered by these requirements, while other actors in the agricultural value chain can apply them voluntarily. We have already taken the first steps to study this issue, in particular by examining the state of sustainability reporting and the motivation among agricultural enterprises [14], but this problem remains not fully resolved.

Analysis of recent research and publications. Recent studies of ESG reporting practices among leading companies in the EU and the UK demonstrate business adaptation to CSRD/ESRS requirements by disclosing dual materiality, providing information on costs and turnover according to the taxonomic criteria for sustainable activities and providing limited assurance [15]. However, an analysis of the first CSRD reports for 2024 of companies present in the EU revealed several shortcomings: the dominance of risk assessment over opportunities, superficial disclosure of indirect emissions in the supply chain (Scope 3), lack of justification for the dual materiality methodology, failure to provide information on their positive impact, lack of forecasts and goals for the future and a low level of digital reporting of information (tagged data (XBRL)) [16].

In this context, Ukraine has a high level of declarative support for ESG initiatives with low actual readiness for "green" transformation. Thus, only 7-9% of Ukrainian companies are familiar with standards such as IFRS, GRI, CSRD, UNGC, and 71% of respondents indicate that the main barrier to implementing sustainable practices is the lack of information. Despite this, 87% support introducing ESG standards, but only 5% are ready to report now. Among the main challenges are the lack of qualified personnel (77%) and the complexity of digitalising processes (65%) [17]. At the same time, the Ukrainian banking sector focuses its attention on the assessment of double materiality (DMA), which takes into account not only the evaluation of financial risks and opportunities from environmental and social factors (financial materiality), but also the impact of banking activities on the environment and society (impact materiality) [18].

Sectoral studies draw attention to the fact that Ukrainian agricultural companies are increasingly actively implementing climate approaches under pressure from projects of international financial organisations and regulatory requirements (such as CSRD), and not on the internal initiative of the business. Some companies (Kernel, Astarta) keep records of greenhouse gas emissions by the GHG Protocol Corporate Accounting and Reporting Standard (Scope 1, 2, sometimes 3), submit reports to the Carbon Disclosure Project (CDP) and are guided by the Science Based Targets (SBTi) initiative. However, the level of detail of reporting varies significantly. There is also growing interest in participating in the voluntary emission reduction market (Gold Standard, Verra). However, unified verification guidance (Land Sector and Removals Guidance) is expected only by the end of 2025. In addition, the lack of a reliable monitoring, reporting and verification (MRV) system, as well as the risks of double counting of emissions, limit the ability of Ukrainian agricultural companies to attract financing through such mechanisms, in particular, emission reductions within their supply chain (insetting) [19].

Overcoming these barriers is particularly relevant in preparing Ukraine's carbon budget, in which the agricultural sector is not only a priority sector for cost-effective emission reduction [20], but also a source of cheap energy. For example, the cost of a unit of energy from burning straw bales or corn stalks (137 UAH/GJ with VAT) is 95% cheaper than the cost of traditional electricity for non-household consumers (2,778 UAH/GJ with VAT) [21].

The literature review proves that overcoming barriers to increasing ESG accountability and considering European sustainable reporting requirements in the Ukrainian agricultural reporting system are unresolved scientific problems for the agricultural sector of Ukraine.

The purpose of the article. The article aims to assess the readiness of Ukrainian agricultural enterprises to implement ESG reporting and to find ways to implement EU legislation in sustainable development for post-war recovery and modernisation purposes. The study is based on the empirical results of interviews with managers and chief accountants and a comparative analysis of Ukrainian reporting with the FSDN (Farm Sustainability Data Network) system. The researchers paid special attention to identifying motivations for the voluntary implementation of sustainable development practices and reporting as a factor in attracting international "green" financing. It is expected that the result of this study will be recommendations for the unification, digitalisation and institutional support of the sustainable reporting system in the agricultural sector.

Methods. The research methodology combines qualitative and comparative analytical methods. The empirical block was based on semi-structured interviews with agricultural enterprises. The questions were formulated according to the principles of an open interview with thematic prompts. When compiling the questionnaire, elements of logical-semantic structuring were used. The researchers used the structural-content comparison method to analyse the reporting forms of Ukraine and the FSDN system, and logical classification, generalisation, and comparison to interpret the research results.

Presentation of the main research material. The post-war restoration of Ukraine's agricultural sector is inextricably linked to European integration and increased accountability of economic activity. To respond to the demands of international investors and EU markets, Ukrainian companies are gradually developing and implementing ESG strategies. However, the level of such implementation depends on the size of the enterprise and its integration into global markets for goods (services) and capital.

To understand the nature of these issues, we interviewed 30 agricultural enterprises in 18 regions of Ukraine during April-July 2024. A third of those surveyed have an area of 1 to 2 thousand hectares under cultivation (Figure 1). Their main specialisation is the cultivation of legumes and industrial crops.

The largest share of respondents among those surveyed is comprised of respondents aged 46–55 who hold the position of chief accountants (Figure 2).

We asked respondents whether they understood the concept of "sustainable development," and we received a completely different interpretation. So, 20% of respondents believe that sustainable development consists of preserving the environment and ensuring the stability of activities or implies a positive process. Another 17% of respondents answered that they do not know what sustainable development is at all. However, this does not mean their enterprises do not implement sustainable agricultural practices.

"I understand that sustainable development is about […] negative environmental impact, which should be included in the price of the finished product through taxation. The price of high-carbon products should become high, and such a manufacturer will start losing customers if it does not change its technologies".

(Respondent 2)

"I think it's about the latest technologies and environmental protection".

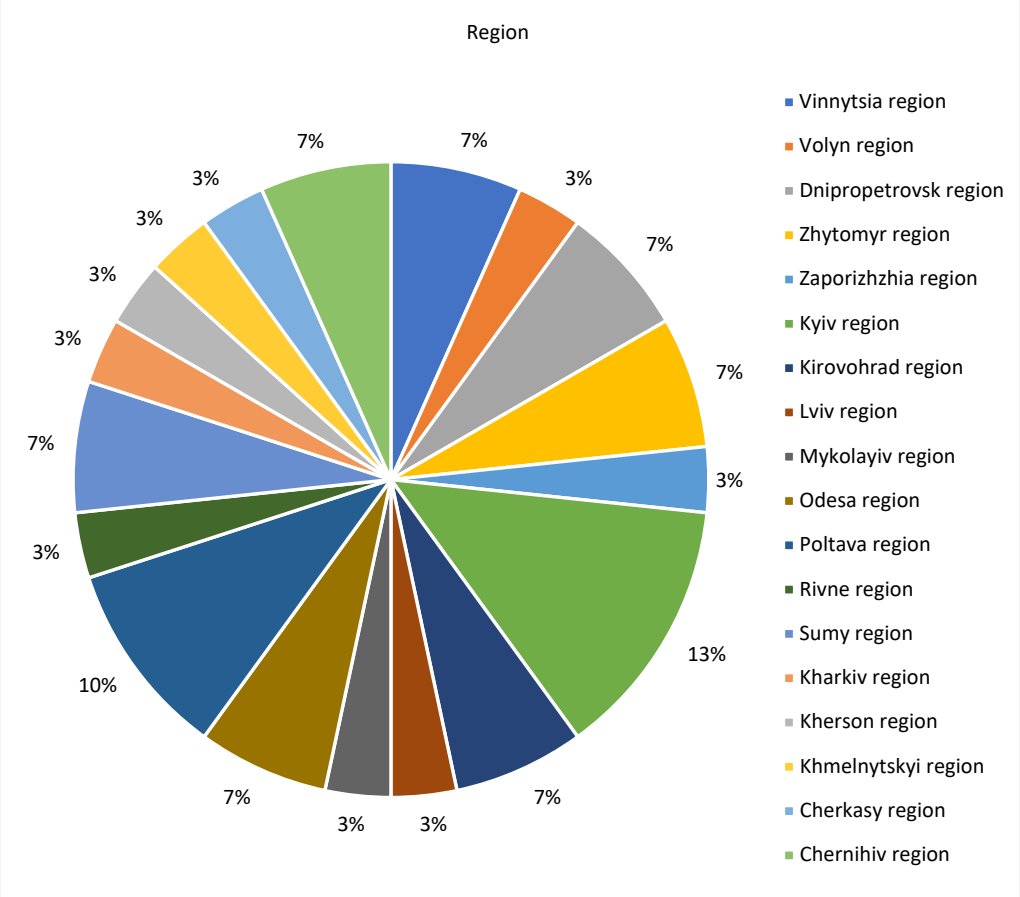
(Respondent 5)

The survey results show that the main problem during martial law is solving social issues. The majority of respondents assist the community, and half assist the army. Timely payment of salaries also plays an important role. However, answering the question where this information is presented, we come to the conclusion that this information may not be disclosed anywhere. This is especially true for micro, small and medium-sized enterprises. After all, they are not interested in disclosing such information if they do not see real benefits from this disclosure: financial (additional income from increasing prices for low-carbon products, selling carbon certificates, lower credit rates) and non-financial, such as creating a positive corporate image of the enterprise (i.e. an enterprise that cares about the environment for future generations and the local community).

"We help the community by repairing roads and schools, clearing snow from roads in winter, painting buildings, and landscaping. We also help families in need".

(Respondent 6)

Regarding the environmental aspects of their activities, respondents mainly focused on updating their machinery and tractor fleet and implementing innovative approaches to resource management. In particular, this concerns reducing energy consumption and implementing precision farming systems, including remote sensing and digitalisation. Due to the rapid increase in the price of mineral fertilisers, some farms are increasingly using organic sources of nutrition. However, smaller enterprises are often deprived of access to plant protection products and fertilisers due to limited financial resources. At the same time, those producers who have switched to minimal or zero tillage are considering



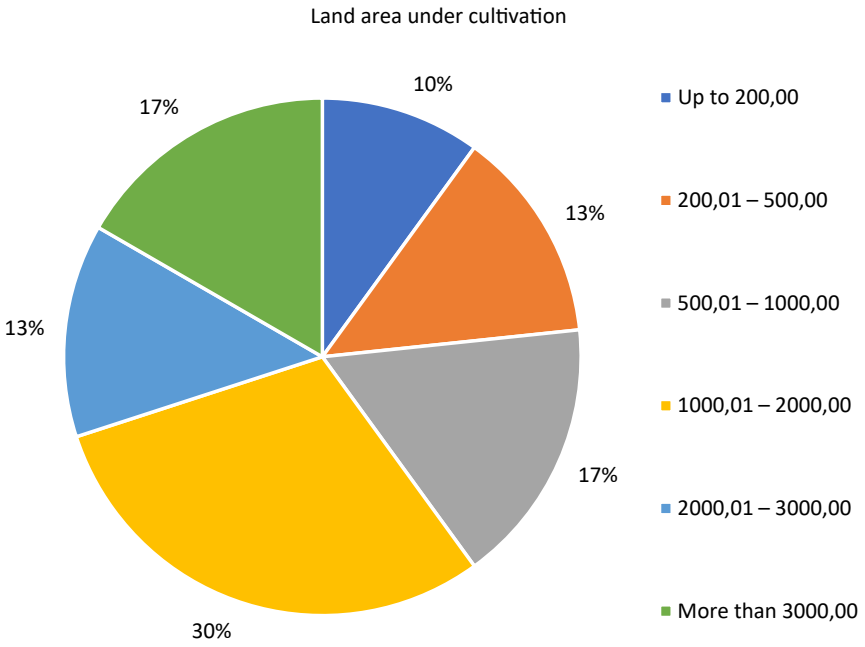


Figure 1. Regions in which enterprises carry out economic activities and the amount of land under cultivation

Source: developed by authors based on survey data

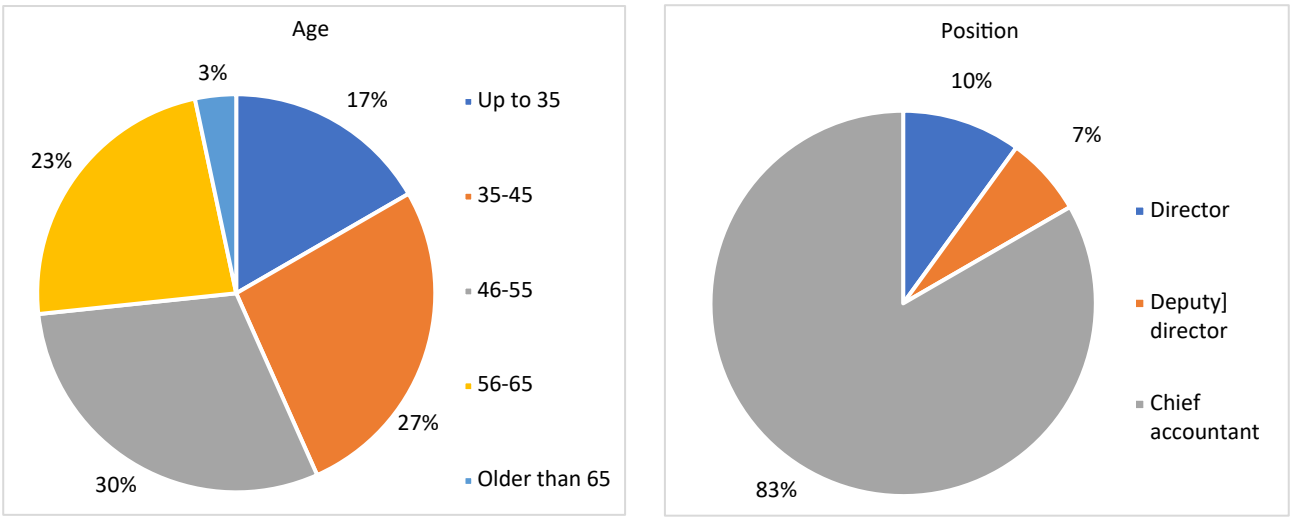


Figure 2. Age and position of respondents

Source: developed by authors based on survey data

the possibility of monetising sustainable practices through participation in carbon trading systems (Figure 3).

"We apply bird droppings from the poultry farm to the soil. We use crop rotation and do not turn the soil. Our equipment […] is New Holland, with the latest technologies".

(Respondent 13)

The most significant risks during martial law for most businesses are cancellation of reservations and mobilisation of employees, military operations near agricultural lands, and logistical problems with product sales. At the same time, businesses face an unfavourable economic combination: rising resource prices and falling sales prices. The low level of state support, the directions of which are difficult to predict, only deepens this crisis (Figure 4).

"Constant shelling and mined territories pose a significant risk to people. Therefore, buyers do not want to come to us and export our products. As a result, product prices are low. Also, we currently have a labour shortage due to mobilisation. In particular, 14 men were mobilised".

(Respondent 14)

"The biggest and most terrible risk is war. The problem is the rising cost of fuel and low prices for products"

(Respondent 16)

Regarding investment priorities, many respondents reported a complete lack of access to resources for capital investments. Only a few companies with larger land banks or access to external financing could finance infrastructure upgrades. In particular, some companies focused on

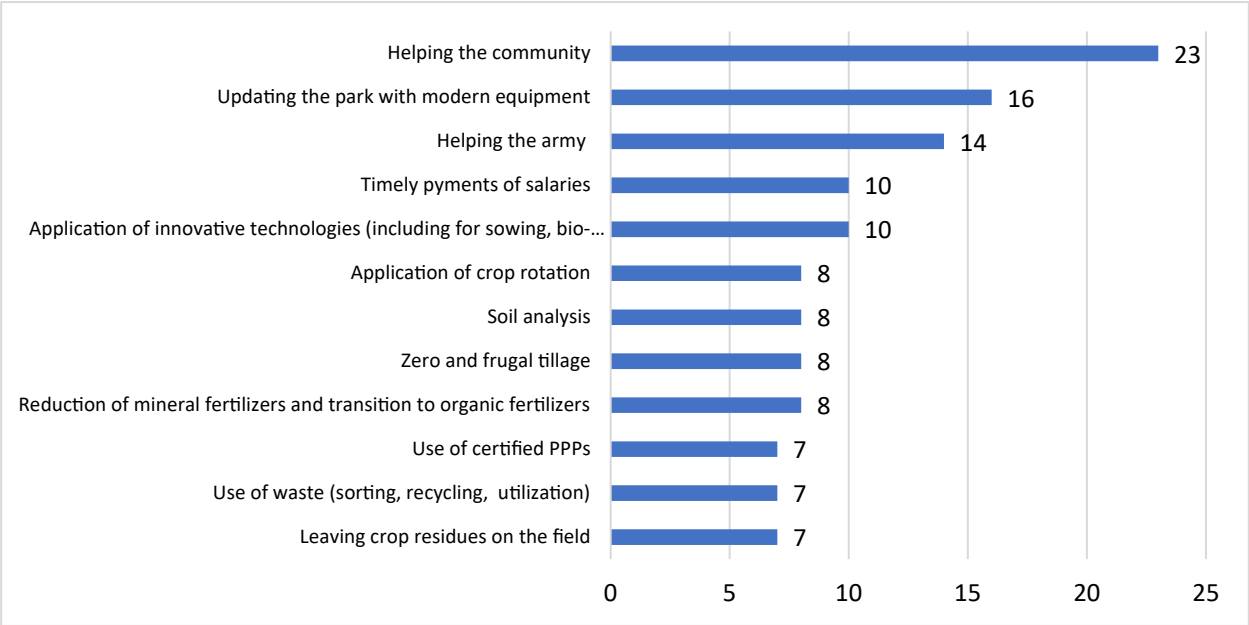


Figure 3. Sustainable agricultural practice: ecology and social sphere

Source: developed by authors based on survey data

building processing or geographically dispersed storage facilities to minimise the risk of crop loss due to shelling and drone attacks (Figure 5).

"We are investing now in dairy processing. We are investing in the construction of a cheese-making complex. We are starting to make cheese."

(Respondent 5)

According to the respondents, hostilities and general instability related to the war are the most deterrent factors for investments in sustainable development. The study participants hope for more decisive support from the state, particularly through the creation of stable financial instruments. Although farmers currently receive loans at preferential rates under the state program "5-7-9%", in practical terms, these volumes cover only part of the sector's needs. In addition, widespread distrust in the implementation of state initiatives, due to the risks of non-transparent resource allocation, restrains enterprises' willingness to invest in long-term sustainable solutions (Figure 6).

"We work in a border region, so there are risks of being hit and losing equipment. There is no guarantee that we will be able to harvest everything that has been sown. There are also problems with personnel. Most of our employees are pensioners. Young people do not really want to come to work for us, because it is seasonal work. The main work lasts from March to December, and then there is downtime and preparatory work. There is not enough infrastructure in the region for young people to find additional employment during downtime. […]. In addition, corruption is a deterrent factor."

(Respondent 11)

"The country lacks control over land use and product quality. There are no clear regulations and controls over what is added to the soil, what fertilisers are used, how the

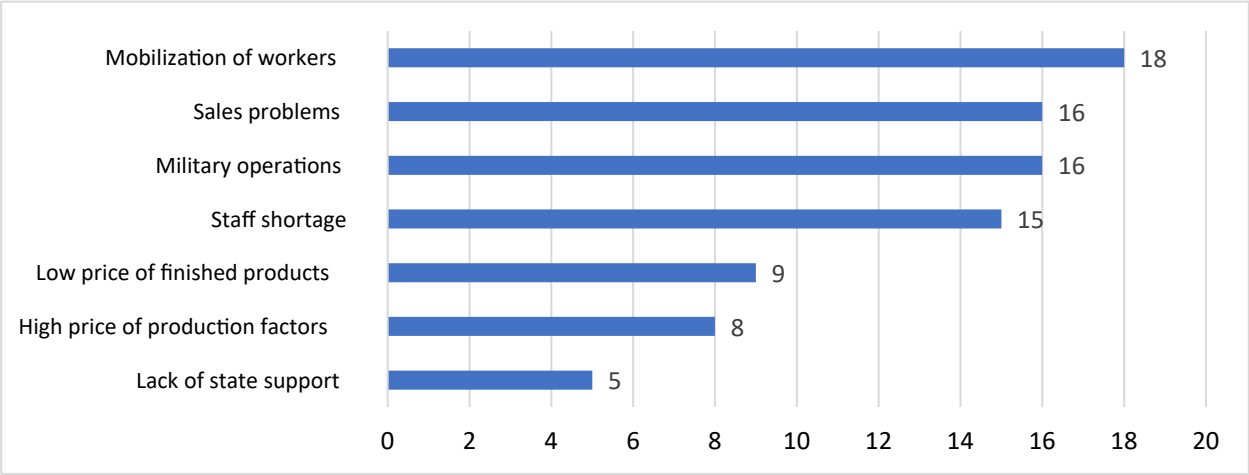


Figure 5. Investment directions

Source: developed by authors based on survey data

land is used, and what technologies are applied. There is no balance between the prices of the necessary means and materials during the cultivation of agricultural products and the prices for their sale".

(Respondent 17)

During the survey, it became clear that the agricultural land market does not have a direct, unambiguous impact on the "green" transformation of enterprises. Despite the emergence of the possibility of purchasing agricultural land by enterprises from private ownership of individuals since the beginning of 2024, a significant part of the respondents continues to work exclusively within the framework of leases and does not purchase land plots. At the same time, a steady trend is recorded for purchasing land plots from trusted persons of enterprises to protect the land fund from potential raiding. Some farms also noted that due to legal instability, they may lose control over the leased areas if the owner decides to terminate the contract or change the tenant. These circumstances create additional risks for long-term planning of sustainable investments (Figure 7).

'There are cases of people being deceived […] to buy their land. Buyers promise the shareholders one thing, and then it turns out that the money is not the same, but everything has already been signed. Although we, as tenants, have the priority right to buy the land. However, some shareholders do not contact us, […] sell it to others, and then regret it".

(Respondent 11)

"Before the war, we bought plots of land that were put up for sale. But now this territory has become occupied, and we have lost access to it. Therefore, there is no certainty about the future regarding the purchase of land at the moment. Now, we are looking for new lands to rent".

(Respondent 27)

Analytical data show that the European Union remains the most important trading partner for the Ukrainian agricultural sector. In 2024, agricultural exports from Ukraine to the EU increased by 11% and reached 13 billion Euros, which provided 8% of the total volume of EU agri-food imports and brought Ukraine to third place among suppliers of agricultural products to the EU [22]. The largest growth was observed in the segments of vegetable oils (+946 million Euros) and oilseeds and protein crops (+709 million Euros), while the value of grain exports decreased by 12%, despite an increase in physical volumes by 6%.

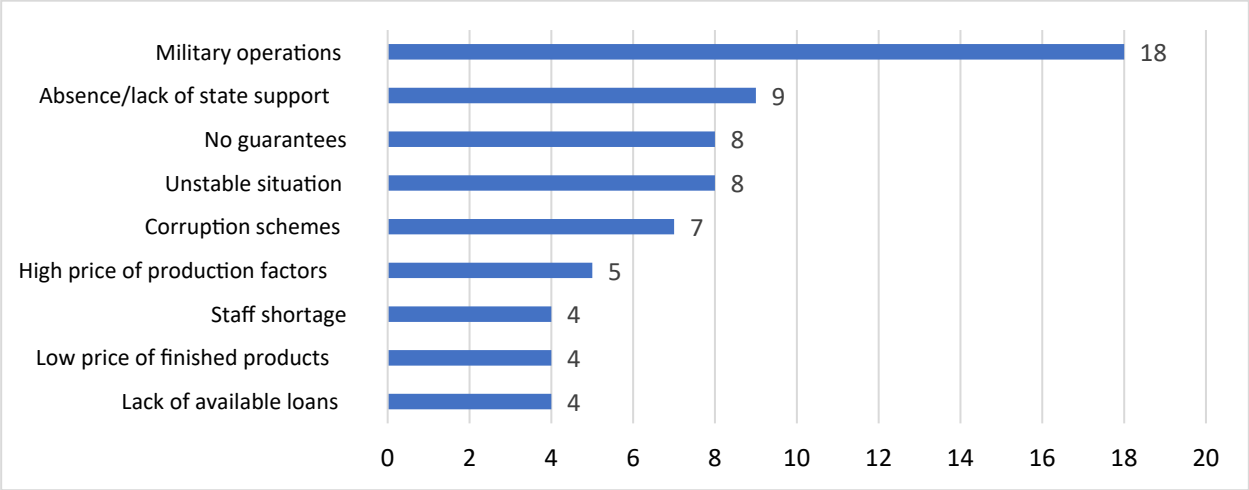


Figure 6. Risks for investments in sustainable agricultural practices

Source: developed by authors based on survey data

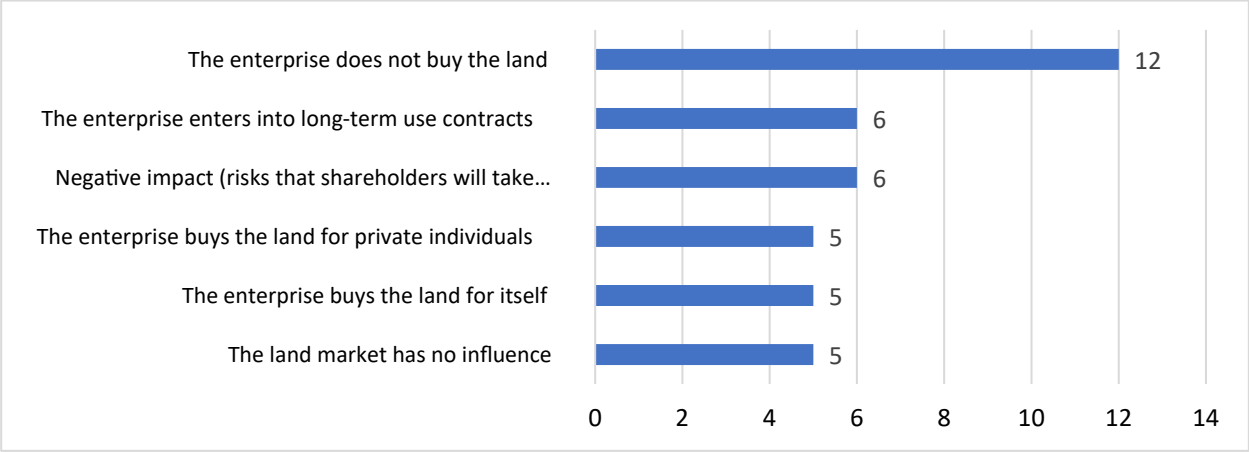


Figure 7. Impact of the agricultural land market

Source: developed by authors based on survey data

Against this background, we asked respondents to assess the challenges and opportunities arising in the context of European integration. Most agricultural enterprises view integration into the EU market as a chance to expand sales, attract investment, access preferential financing, and increase welfare (Figure 8). These expectations are supported by political steps, particularly granting Ukraine EU candidate status in 2022 [23] and approving financial support for 50 billion Euros for 2024–2027 [24].

"We expect a simplification of the export process and product certification from the European integration of Ukraine. Customs clearance will be simplified. This will help open up sales markets, […] there will be more grants, and available loans".

(Respondent 25)

"We expect the opening of markets for losses and improved logistics. […], as well as accessible loans. Prices should be regulated, but at the same time, European norms should be studied and implemented".

(Respondent 30)

The key objective of our interviews was to identify factors that influence the decision to prepare and publish sustainability reporting. As indicated by the respondents' answers, the main incentive for preparing a Sustainability Report is profit, obtaining additional income for the enterprise. Tangible factors influencing the decision to prepare non-financial sustainability indicators are professional consulting support and training in precision agriculture, crop rotation, use of plant protection products, restoration of biodiversity and operations with carbon certificates. Participation in educational activities significantly increases confidence in obtaining satisfactory indicators (Figure 9).

"We are not yet ready to prepare an ESG report. Will this bring additional income to the company? We need financing and affordable lending to develop and implement new technologies".

(Respondent 14)

"We are 90% ready to prepare a Sustainability Report. We are trying to keep the enterprise in order and strive to create civilised farming and working conditions. But we need information and training on protection measures, crop rotation, biodiversity, and soil research".

(Respondent 27)

The analysis of interview data shows that data on sustainable practices that agricultural enterprises actually implement often remain outside the scope of official statistics, are not integrated into electronic reporting systems and are not presented in a format convenient for analysis by external users. Thus, an institutional gap between practice and accountability needs to be overcome, given Ukraine's European integration course. Thus, it is necessary to overcome the institutional gap between practice and accountability, given Ukraine's European integration course. To examine the scale of this gap, we propose to consider the example of the Farm Sustainability Data Network (FSDN), which was established in the EU based on the Farm Accountancy Data Network (FADN). At the same time, it is important to note that the FSDN is only one part of a broader data collection system for the development and implementation of the EU's Common Agricultural Policy, and it itself includes only a specific set of sustainability indicators. It is primarily aimed at meeting the needs of policymakers as stakeholders, whereas a broader sustainability reporting system must also take into account the requirements of other stakeholders – such as creditors, certification bodies, and commercial banks, who often set additional or stricter requirements, especially for large corporate enterprises. For small farming operations, such requirements may have only an indirect impact. In addition, participation in the FSDN does not require the actual implementation of sustainable practices – within this system, it is possible to report even their absence.

In this context, we will complement our study with a comparative analysis of Ukrainian statistical, tax and environmental reporting with the FSDN structure to assess the potential for integration and identify areas for adaptation.

It is important to note that, unlike the FADN, which focused mainly on accounting data, the FSDN system covers a wider range of sustainability indicators. For EU candidate countries, including Ukraine, implementing FSDN is a mandatory step under the negotiating chapter 11 "Agriculture and Rural Development", as stated in the European Commission's Analytical Report on Ukraine's EU Membership Capability [25]. Moreover, the Operational Plan of Action for the Implementation of the Strategy for the Development of Agriculture and Rural Areas in Ukraine



Figure 8. Expectations from the European integration of Ukraine (opportunities and threats)

Source: developed by authors based on survey data

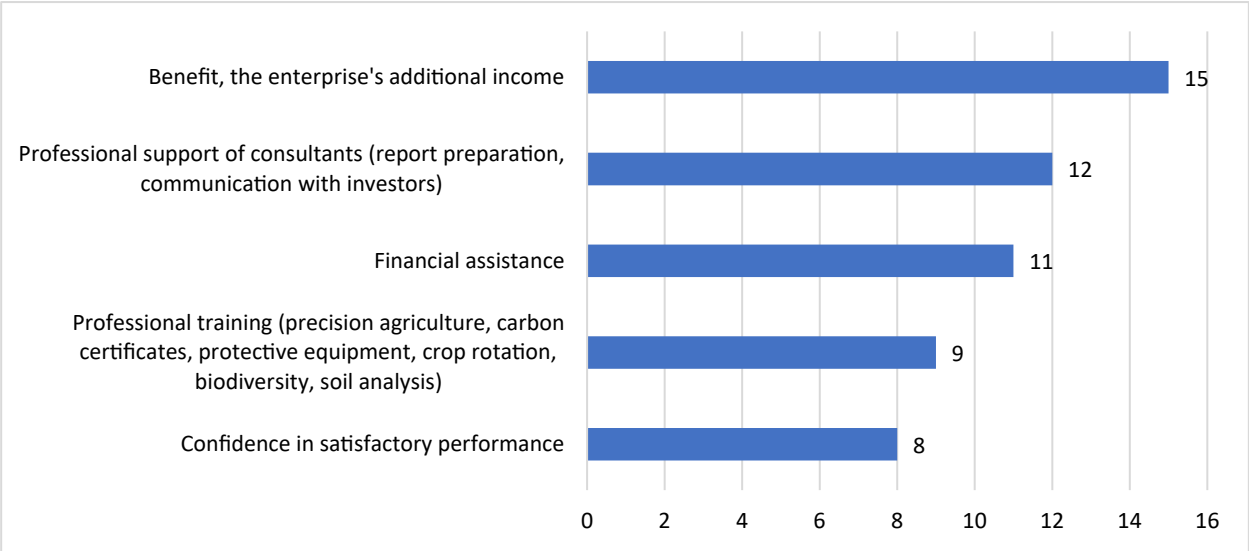


Figure 9. Incentives for the preparation and publication of the Sustainable Development Report

Source: developed by authors based on survey data

until 2030 in 2025–2027 envisages "the establishment of a system of agricultural enterprise data accounting based on the Farm Sustainability Data Network (FSDN) principle" [6]. To this end, Ukraine needs to harmonise the basic EU regulations [26, 27, 28, 29].

At a practical level, Ukraine is already taking the first steps towards adopting FSDN. Thus, in 2024, a pilot experiment on data collection using the FSDN methodology was launched in the Poltava region within the framework of EU support (Institutional and Policy Reform for Smallholder Agriculture (IPRSA) project) [30]. This experience aims to develop a national model for FSDN implementation adapted to Ukrainian realities.

Given this, our assessment of the convergence of Ukrainian reporting with the indicators defined in FSDN is quite informative. Thus, only 59.5% of all European indicators are fully or partially reflected in the existing statistical, environmental and tax reporting of agricultural enterprises in Ukraine. Of the 42 FSDN indicators covering three key dimensions – economic, social and environmental, 17 indicators were not covered.

We recorded the highest level of compliance in the social dimension – 62.5% (5 out of 8 indicators), which indicates the presence of reporting forms related to labour, remuneration, working conditions and gender structure. The economic dimension is covered by 61.1% (11 out of 18), where the main information concerns assets, investments, VAT, expenses, and land use. At the same time, the environmental dimension has the lowest coverage, only 56.3% (9 out of 16 indicators). Firstly, this is explained by the lack of formal data collection on carbon agriculture, biodiversity, certification, energy management, antimicrobials and food losses (Table 1).

The identified gap in official data creates risks for Ukraine's participation in European sustainable development programs, access to "green" financing and full integration into the European agrarian information space. Therefore, the introduction of new forms of reporting and the unification of existing ones under European require-

Table 1

Correspondence of FSDN indicators and reporting in Ukraine

Economic indicators		Environmental indicators		Social indicators	
FSDN Indicator	**Form (Ukraine)**	**FSDN Indicator**	**Form (Ukraine)**	**FSDN Indicator**	**Form (Ukraine)**
1	2	3	4	5	6
General information on the holding	50-sg, annual	Farming practices	9-sg, annual; 29-sg annual; 37-sg monthly; 2-ferm, annual; 21-sg, monthly	Labour	1-PV, monthly, quarterly
Type of occupation	1-PV, monthly, quarterly	Soil management	9-sg, annual	Education	–
Assets and investments	2-OZ INV, annual	Nutrient use and management	9-sg, annual	Gender balance	Tax payroll calculation, monthly
Quotas and other rights	–	Carbon farming	–	Working conditions	1-PV (working conditions), annual; 3-debt, monthly
Debts and credits	–	Greenhouse gas emissions and removals	2-TP (air), annual	Social inclusion	–

Продовження таблиці 1

1	2	3	4	5	6
Value added tax	VAT tax return, monthly	Air pollution	Environmental tax return, annual	Social security	Tax payroll calculation, monthly
Inputs	4-mtp, monthly, annual; 9-sg, annualф	Water use and management	Tax return of rent for special water use, quarterly; Tax return of rent for subsoil, quarterly; 7-GR (groundwater), annual	Infrastructure and essential services	1-IKT, annual
Land use and crops	Tax return of a single tax payer of the 4th group, annual; Tax return on land payment, annual; 4-sg, annual	Plant protection use	9-sg, annual	Generation renewal	–
Livestock production	24-sg, monthly, annual	Antimicrobial use	–		
Animal products and services	11-zag, quarterly; 13-zag, quarterly; 24-sg, monthly	Animal welfare	–		
Market integration	1-grain, monthly; 21-sg, annual, monthly	Biodiversity	–		
Quality products – geographical indications	–	Organic farming	Report on issued certificates, annual		
Membership in producer organisations	–	Certification schemes	–		
Risk management	–	Energy consumption and energy production	–		
Innovation and digitalisation	2-investments, quarterly; No. 1 and 2-innovation, annual	Food loss on primary production level	–		
Other gainful activities related to the holding	–	Waste management	Waste declaration, annual		
Subsidies	Calculation of the share of agricultural production, annual				
Indicative share of off-farm income	–				

Source: developed by authors

ments should become part of the strategy of "green" reconstruction and agrarian integration into the EU.

Conclusions. Russian aggression against Ukraine not only exacerbated the existing problems of its weak institutional position in the sphere of economic activity and information disclosure, but also showed a clear pragmatic approach to this issue on the part of Ukrainian agribusiness. The interviews with Ukrainian agricultural enterprises show that the understanding of sustainable development remains fragmented, and the existing practices of environmental and social responsibility, although implemented, are not always officially recorded. At the same time, the level of environmental practices varies significantly depending on the size of the enterprise and access to finance. Full-scale war, mobilisation, and the risks of hostilities are effectively paralysing investment activity in implementing sustainable practices. Distrust of state institutions and weak regulatory control create additional barriers. In addition, the land market generates more risks than provides opportunities for "green" transformation. Despite this, the European integration course is viewed by agrarians as a chance for growth, although it requires adaptation to European standards. The most substantial incentive for ESG reporting remains economic benefit, particularly the possibility of obtaining financing and access to new markets. This indicates that to stimulate the transition to sustainable agribusiness and reporting in Ukraine, it is important not only to strengthen the institutional capacity

and transparency of state support instruments, but also to create accessible mechanisms for assessing sustainability, implement training programs, and ensure the connection between reporting and access to markets and financing.

Today, the state policy of the EU countries is increasingly focused on stricter environmental regulation, particularly in increasing carbon taxes and encouraging enterprises to disclose information on their impact on the environment and humanity. In light of this, Ukraine is already gradually implementing European legislation in sustainable development and reporting, which is harmonised with international principles. For its part, the EU is also already providing technical support to pilot projects on collecting sustainable development data among agricultural enterprises in Ukraine.

Our analysis has revealed a significant institutional gap between the actual implementation of sustainable practices in agribusiness and their formalised reporting. Harmonising national reporting with the FSDN system will partly address this issue.

The results of the comparative analysis demonstrate partial compliance of Ukrainian reporting forms with FSDN indicators. The identified imbalance poses risks to Ukraine's access to green financing and participation in EU joint programmes, and therefore, agricultural reporting reform should be a key element of the green recovery strategy.

Ukraine needs to expand the coverage of the environmental dimension of reporting, as relevant indicators are missing or insufficiently detailed in the current reporting forms. This includes collecting information on carbon farming, pollutant emissions, biodiversity, antimicrobial use, animal welfare, energy consumption and food losses at the primary level.

In the social dimension, reporting indicators should be expanded to include information on the educational level of workers, social integration (in particular, employment of vulnerable groups) and generational renewal in farming. In turn, the economic dimension requires the introduction of indicators on quotas and property rights, debt burden, other profitable activities related to the farm, membership in producer organisations, geographical indications and risk management.

It is also necessary to introduce a single digital ecosystem for sustainability reporting based on the principles of data interoperability and compliance with FAIR (Findable, Accessible, Interoperable, Reusable) standards.

These research recommendations will allow for reforming Ukraine's agricultural reporting system to meet national needs and European requirements. In turn, this will increase Ukraine's agricultural sector's transparency, create the prerequisites for effective integration of the EU's common agricultural policy, and help attract "green" financing on international capital markets.

References:

1. UNHCR (2025) Situation Ukraine Refugee Situation. Available at: https://data.unhcr.org/en/situations/ukraine (accessed June 16, 2025).

2. Interfax-Ukraine (2024) More than 80 billion in losses: how the war has changed the Ukrainian agricultural sector. Available at: https://en.interfax.com.ua/news/blog/1051482.html (accessed June 16, 2025).

3. Reuters (2024) Landmines cost Ukraine $11 bln in GDP each year, says report. Available at: https://www.reuters.com/world/europe/landmines-cost-ukraine-11-bln-gdp-each-year-says-report-2024-09-10 (accessed June 16, 2025).

4. Reuters (2024) Ukraine farm sector indirect losses may reach $83 bln due to Russian invasion. Available at: https://reuters.com/markets/commodities/ukraine-farm-sector-indirect-losses-may-reach-83-bln-due-russian-invasion-2024-10-03 (accessed June 16, 2025).

5. Anadolu Agency (2022) Ukraine devalues currency by 25% against greenback amid war. Available at: https://www.aa.com.tr/en/economy/ukraine-devalues-currency-by-25-against-greenback-amid-war/2642359 (accessed June 16, 2025).

6. Kabinet Ministriv Ukrainy (2024) Pro skhvalennia Stratehii rozvytku silskoho hospodarstva ta silskykh terytorii v Ukraini na period do 2030 roku: Rozporiadzhennia № 1163-r [On Approval of the Strategy for the Development of Agriculture and Rural Areas in Ukraine for the Period Until 2030: Order No. 1163-r]. Available at: https://zakon.rada.gov.ua/laws/main/1163-2024-r (accessed June 17, 2025).

7. Kabinet Ministriv Ukrainy (2024) Pro skhvalennia Natsionalnoho planu z enerhetyky ta klimatu na period do 2030 roku: Rozporiadzhennia № 587-r [On Approval of the National Energy and Climate Plan for the Period up to 2030: Order No. 587-p]. Available at: https://zakon.rada.gov.ua/laws/show/587-2024-r#Text (accessed June 17, 2025).

8. Kabinet Ministriv Ukrainy (2025) Pro zatverdzhennia planu zakhodiv shchodo stvorennia natsionalnoi systemy torhivli kvotamy na vykydy parnykovykh haziv: Rozporiadzhennia № 146-r [On approval of the action plan for the creation of a national greenhouse gas emissions trading system: Order No. 146-p]. Available at: https://zakon.rada.gov.ua/laws/show/146-2025-r#Text (accessed June 17, 2025).

9. Kabinet Ministriv Ukrainy (2024) Pro zatverdzhennia Natsionalnoho planu dii z vidnovliuvanoi enerhetyky na period do 2030 roku ta planu zakhodiv z yoho vykonannia: Rozporiadzhennia № 761-r [On Approval of the National Renewable Energy Action Plan for the Period Until 2030 and the Action Plan for Its Implementation: Order No. 761-p]. Available at: https://zakon.rada.gov.ua/laws/main/761-2024-r#Text (accessed June 17, 2025).

10. Kabinet Ministriv Ukrainy (2024) Deiaki pytannia zabezpechennia dosiahnennia Tsilei staloho rozvytku v Ukraini: Rozporiadzhennia № 1190-r [Some Issues of Ensuring the Achievement of Sustainable Development Goals in Ukraine: Order No. 1190-r]. Available at: https://www.kmu.gov.ua/npas/deiaki-pytannia-zabezpechennia-dosiahnennia-tsilei-staloho-rozvytku-v-ukraini-i291124-1190 (accessed June 17, 2025).

11. Kabinet Ministriv Ukrainy (2024) Pro skhvalennia Stratehii zaprovadzhennia pidpryiemstvamy zvitnosti iz staloho rozvytku: Rozporiadzhennia № 1015-r [On Approval of the Strategy for the Introduction of Sustainable Development Reporting by Enterprises: Order No. 1015-p]. Available at: https://kmu.gov.ua/npas/pro-skhvalennia-stratehii-zaprovadzhennia-pidpryiemstvamy-zvitnosti-iz-stalo-a1015r (accessed June 17, 2025).

12. Fond rozvytku pidpryiemnytstva (2024) Systema ekolohichnoho ta sotsialnoho upravlinnia (SESU) [Environmental and Social Management System (ESMS)]. Available at: https://bdf.gov.ua/wp-content/uploads/2024/03/Systema-ekolohichnoho-ta-sotsialnoho-menedzhmentu-FRP.pdf (accessed June 17, 2025).

13. Natsionalnyi bank Ukrainy (2025) Bila knyha z upravlinnia ekolohichnymy, sotsialnymy ta upravlinskymy (ESG) ryzykamy u finansovomu sektori [White Paper on Environmental, Social and Governance (ESG) Risk Management in the Financial Sector]. Available at: https://bank.gov.ua/admin_uploads/article/Bila_knyga_2025_fin.pdf?v=12 (accessed June 17, 2025).

14. Metelytsia V., Valentinov V., Gagalyuk T. (2025) Attitudes toward ESG reporting in a crisis economy: Insights from interviews with Ukrainian agricultural enterprises. *Business Strategy and Development,* 8(2). Available at: https://onlinelibrary.wiley.com/doi/full/10.1002/bsd2.70123 (accessed June 21, 2025).

15. DiXi Group (2024) ESG-zvitnist: analiz praktyk rozkryttia informatsii [ESG Reporting: An Analysis of Disclosure Practices]. Available at: https://dixigroup.org/analytic/esg-zvitnist-analiz-praktyk-rozkryttya-informacziyi (accessed June 18, 2025).

16. Tsyhanok L. (2025) Zvitnist CSRD iz vidtinkom zakhystu, a ne transformatsii. Prezentatsiia ESG Liga, PAEW, Ofis stalykh rishen [CSRD reporting with a touch of protection, not transformation. Presentation ESG Liga, PAEW, Office of Sustainable Solutions]. Available at: https://gto.dixigroup.org/assets/images/files/prezentatsiia-tsyhanok.pdf (accessed June 18, 2025).

17. Ofis zelenoho perekhodu (2025) Doslidzhennia hotovnosti ukrainskoho biznesu do vprovadzhennia ESG [Research on the Readiness of Ukrainian Business for the Implementation of ESG]. Available at: https://gto.dixigroup.org/assets/images/files/11-06-praktyka-zvitnosti-v-2025-oleksii-yatsiuk-kopiia.pdf (accessed June 17, 2025).

18. Ofis zelenoho perekhodu (2025) Silske hospodarstvo: stali praktyky dlia prodovolchoi bezpeky i dosiahnennia klimatychnykh tsilei. Sektoralne doslidzhennia [Agriculture: Sustainable Practices for Food Security and Climate Goals. Sectoral Research.]. Available at: https://gto.dixigroup.org/research (accessed June 17, 2025).

19. Hrys A. (2025). Otsinka podviinoi materialnosti (DMA) [Dual Materiality Assessment (DMA)]. Ukrhazbank. Available at: https://gto.dixigroup.org/assets/images/files/hrys-1.pdf (accessed June 18, 2025).

20. Kitura A. (2025) Natsionalnyi vuhletsevyi biudzhet ta sektoralni doslidzhennia [National Carbon Budget and Sectoral Research]. Ofis zelenoho perekhodu. Available at: https://gto.dixigroup.org/research (accessed June 17, 2025).

21. Heletukha H. (2025). Mozhlyvosti masshtabuvannia enerhetychnoho vykorystannia roslynnykh reshtok ta inshoi ahrosyrovyny [Possibilities of scaling up the energy use of crop residues and other agricultural raw materials]. Bioenerhetychna asotsiatsiia Ukrainy. Available at: https://gto.dixigroup.org/assets/images/files/uabio-geletukha.pdf (accessed June 18, 2025).

22. European Commission (2024) Agriculture and rural development. Available at: https://agriculture.ec.europa.eu/index_en (accessed June 19, 2025).

23. Cabinet of Ministers of Ukraine (2022) Ukraine receives candidate status for EU membership, Government Portal. Available at: https://www.kmu.gov.ua/news/ukrayina-otrimala-status-kandidata-na-chlenstvo-v-yes (accessed June 19, 2025).

24. European Commission (2023) Ukraine Facility. Available at: https://neighbourhood-enlargement.ec.europa.eu/european-neighbourhood-policy/countries-region/ukraine/ukraine-facility_en (accessed June 19, 2025).

25. European Commission (2023) Analytical Report on Ukraines alignment with the EU acquis. Available at: https://neighbourhood-enlargement.ec.europa.eu (accessed June 20, 2025).

26. Council of the European Union (2009) Council Regulation (EC) No 1217/2009 setting up a network for the collection of accountancy data on the incomes and business operation of agricultural holdings in the European Community. *Official Journal of the European Union,* L 328, pp. 27–38. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009R1217 (accessed June 20, 2025).

27. European Parliament & Council of the European Union (2023) Regulation (EU) 2023/2674 amending Council Regulation (EC) No 1217/2009 as regards conversion of the Farm Accountancy Data Network into a Farm Sustainability Data Network. *Official Journal of the European Union,* L 2023/2674. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32023R2674 (accessed June 20, 2025).

28. European Commission (2024) Commission Delegated Regulation (EU) 2024/1417 supplementing Council Regulation (EC) No 1217/2009 setting up the Farm Sustainability Data Network with rules for annual income determination, holding sustainability analysis and access to data for research purposes, and repealing Commission Delegated Regulation (EU) No 1198/2014. *Official Journal of the European Union,* L 2024/1417. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32024R1417 (accessed June 20, 2025).

29. European Commission (2015) Commission Implementing Regulation (EU) No 2015/220 laying down rules for the application of Council Regulation (EC) No 1217/2009 setting up a network for the collection of accountancy data on the incomes and business operation of agricultural holdings in the European Union. *Official Journal of the European Union,* L 46, pp. 1–19. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32015R0220 (accessed June 20, 2025).

30. Ministerstvo ahrarnoi polityky ta prodovolstva Ukrainy (2024) Minahropolityky zapuskaie pilotnyi proiekt merezhi zboru silskohospodarskykh danykh FADN/FSDN [Ministry of Agrarian Policy launches pilot project of agricultural data collection network FADN/FSDN]. Available at: https://minagro.gov.ua/news/minahropolityky-zapuskaie-pilotnyi-proiekt-merezhi-zboru-silskohospodarskykh-danykh-fadnfsdn (accessed June 21, 2025).

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