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GENDER-JUST CLIMATE ADAPTATION IN UKRAINE'S AGRICULTURE: GUIDELINES FOR POST-WAR RECOVERY AND EUROPEAN INTEGRATION

Kyiv, Ukraine 2025

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Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH
42 Rustaveli Ave. / 31a Griboedov Str.
0108 Tbilisi, Georgia

E: martina.kolb@giz.de
I: www.giz.de/en

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AUTHOR/RESPONSIBLE/EDITOR, ETC.:

Galyna Trypolska, Leading Researcher

Yevheniia Zasiadko, Climate Change Advisor, EU4ClimateResilience, GIZ

Oliver Schönweger, Project Manager, EU4ClimateResilience, GIZ

ON BEHALF OF

The European Union and the German Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety (BMUKN)

GIZ is responsible for the content of this publication

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1. INTRODUCTION

The current development of agriculture and the implementation of climate policy are impossible without taking into account gender aspects. Gender equality is a key factor for sustainable development, increased productivity and social justice. However, in many countries, including Ukraine, women and men have different access to resources, opportunities, and decision-making in agriculture. This affects both their economic viability and their ability to adapt to new challenges, including those related to climate change.

This analysis aims to provide an examination of gender issues in agriculture, drawing on the experience of the European Union and international approaches to integrating gender equality into policy. Particular attention is paid to the analysis of the demographic situation and employment in Ukrainian agriculture, the gender pay gap, energy poverty, and women's access to land use and land ownership. A separate section is devoted to gender differences in labor productivity and the role of women in implementing climate change adaptation measures. It should be noted that this report is one of the first to address the issues of gender, climate change, and agriculture. Given the limited statistical data available, this report does not claim to be comprehensive; instead, it outlines the problem and invites all stakeholders to engage in dialogue.

Photographer: Andriy Klymenko

2. GENDER IN AGRICULTURAL POLICIES. THE CASE OF THE EU

Gender equality is a crucial component of human rights. Since 2006, the world has been monitoring and compiling gender equality rankings, as well as the Global Gender Gap Index. The latter takes into account key components such as economic participation and opportunities, education, health, and survival, as well as political opportunities. During the development process, countries must reduce the gender gap. In 2024, Ukraine's gender gap index was 0.722, which ranked Ukraine 63rd out of 146 countries (for comparison, the leader, Iceland, had a 0.935 index)[1]. Ukraine's position in the top 100 countries was made possible primarily due to the high level of education of Ukrainians.

Agriculture in the EU employs approximately 3.8% of all workers[2]. Only 30% of farm managers are women[3]. The primary issues of gender inequality in the EU agricultural sector are currently access to land, financial constraints, underrepresentation in management decision-making, and difficulties in achieving a work-life balance. In addition, EU agriculture tends to be large-scale production, which requires a large number of seasonal workers[4].

Gender equality is incorporated as a horizontal priority of the European Green Deal (EGD), which also applies to the agricultural sector. The central interconnected policies are the Common Agricultural Policy (CAP) and the Farm-to-Fork Strategy. In the context of gender equality, the CAP aims to strengthen the role of women farmers by providing them with targeted financial instruments, training, and increased access to resources, while also integrating gender issues into rural development plans[5]. The European Commission delegates specific regulatory policy measures with a gender dimension to the Member States[6].

The Farm-to-Fork Strategy raises the issue of precarious, seasonal, and informal employment. Still, it does not explicitly address the gender dimension and does not pay attention to the fact that this precariousness particularly affects women in rural areas and women from ethnic minorities. The Strategy contains only one direct reference to gender equality.

The EU's long-term Rural Vision 2040 contains provisions on social resilience and women in rural areas. One of the goals is to promote equal opportunities for all[7].

The EU pays certain attention to gender mainstreaming in all sectors, including agriculture. This includes conducting gender impact assessments, collecting gender- disaggregated data, and taking into account women's needs in policy development and implementation. This should help identify key barriers (such as limited access to land, lack of financial resources) and develop measures to overcome them[8].

Women play a crucial role in implementing sustainable agricultural practices[9]. The EGD supports initiatives that promote women's participation in organic farming, diversification of farming activities, and the introduction of innovative technologies.

Several prizes and awards have been introduced, such as the biennial Copa-Cogeca Innovation

1. Global Gender Gap Report 2024 https://www.weforum.org/publications/global-gender-gap-report-2024/
2. https://tradingeconomics.com/european-union/employment-in-agriculture-percent-of-total-employment-wb-data.html
3. https://farmonaut.com/europe/empowering-women-in-european-farming-bridging-the-gender-gap-for- sustainable-rural-development/
4. https://library.fes.de/pdf-files/iez/18990.pdf
5. https://farmonaut.com/europe/empowering-women-in-european-farming-bridging-the-gender-gap-for- sustainable-rural-development/
6. https://library.fes.de/pdf-files/iez/18990.pdf#page=32&zoom=100,0,0
7. https://rural-vision.europa.eu/rural-vision/shared-goals_en
8. https://library.fes.de/pdf-files/iez/18990.pdf
9. https://farmonaut.com/europe/empowering-women-in-european-farming-bridging-the-gender-gap-for- sustainable-rural-development/

Award for Women Farmers[10] (recognising innovative practices by women in European agriculture) and the Rural Inspiration Awards[11] (highlighting successful rural development projects, many of which are led by young women).

Thus, the EU is taking steps to recognise the role of women in agriculture. Member states must implement policies to strengthen the role of women in agriculture, and the impact of these policies is expected to increase in the years to come.

10. https://womenfarmersaward.eu/about-the-award/#eluidd2b07033
11. https://eu-cap-network.ec.europa.eu/campaign/agricultural-rural-inspiration-awards-aria-2024_en

3. INTERNATIONAL CONTEXT: INTEGRATING A GENDER PERSPECTIVE INTO CLIMATE POLICY

3.1. Global framework agreements

As of 2025, the topic of gender and the environment is not a new one. In high-level international documents, it is tracked in the Rio Declaration on Environment and Development (1992), the UN Framework Convention on Climate Change (1992), the Millennium Development Goals (2000), the Johannesburg Declaration on Sustainable Development (2002), the Gender Action Plan for the Convention on Biological Diversity (2008), and the Sustainable Development Goals (2016)[12]. The Lima Action Programme on Gender (2014) was adopted to promote gender issues and develop gender-sensitive climate policies and actions[13]. The Paris Agreement (2015) states that states must respect, promote, and take into account their international obligations on gender equality when addressing climate change[14]. The General Recommendations of the UN Committee on the Elimination of Discrimination against Women (2018)[15] emphasise the importance of women's participation in decision-making processes related to disaster risk reduction and climate change, to ensure genuine equality and women's empowerment. The Global Gender and Environmental Outlook (GGEO)[16] aims to integrate gender issues into environmental assessment and decision-making, particularly in the context of climate change and sustainable development.

International agreements create specific mechanisms and obligations for member states. The principal value of this framework is that it requires countries not only to "keep gender in mind", but also to integrate gender analysis into key climate instruments, including Nationally Determined Contributions (NDCs) to the Paris Agreement. Countries should assess how their emission reduction or adaptation plans will impact women, men, and vulnerable groups, and whether these plans ensure equal participation for women in decision-making. As a result, the number of projects targeting women as their primary audience has been increasing in international practice. These projects may relate to agriculture, water, energy, literacy in general, and computer literacy in particular. After the adoption of the Lima Action Programme, attention to the number and role of women in international climate negotiations has increased significantly. For example, some countries have begun to gradually increase the representation of women in their delegations to UN Climate Change Conferences (COP), so that in 2021, 38% of delegations were women (compared to 30% in 2009)[17]. The number of female heads of delegations has also gradually increased. Global climate funds, such as the Green Climate Fund (GCF), may require that projects applying for funding have a clear gender component and demonstrate a positive impact on gender equality[18].

The primary approaches for incorporating gender issues into climate policy include gender mainstreaming, gender-responsive activities, gender impact assessments, and evaluations of women's participation in decision-making. Gender mainstreaming is the principle of providing equal

12. https://ecoacademy.org.ua/sites/default/files/theme_files/tema_1_yak_povyazani_gender_ta_dovkillya.pdf
13. https://www4.unfccc.int/sites/NWPStaging/Pages/Lima-Work-Programme-on-Gender.aspx
14. https://idl-bnc-idrc.dspacedirect.org/server/api/core/bitstreams/e78ea497-f69c-421d-8740-a9d03fa7712d/content
15. https://land.gov.ua/wp-content/uploads/2019/01/Загальні-рекомендації-Комітету-ООН.pdf
16. https://www.unep.org/resources/report/global-gender-and-environment-outlook-ggeo
17. https://www.iied.org/progress-towards-gender-balance-un-climate-negotiations-slow-steady-not-enough
18. https://www.greenclimate.fund/projects/sustainability-inclusion/gender

opportunities regardless of gender, which is applied in all policy areas, including climate action. Gender-responsive action is a set of measures that takes into account gender differences and promotes the empowerment of women and other vulnerable groups[19]. Gender impact assessments help to understand how climate change policies affect women and men differently, ensuring that funds are distributed equitably to minimise negative impacts.

Women's participation in decision-making is critical: women should be included in the planning, preparation, and implementation of climate change adaptation and mitigation measures, as their participation makes the results more effective and ensures that the diverse needs of communities are taken into account[20]. Studies show that adaptation programs developed with the participation of women are more inclusive, sustainable, and responsive to the real needs of the population[21]. Given that women, especially in rural areas, are often the first to face the impacts of climate change – such as reduced crop yields, limited access to water resources, and increased family caregiving[22] – their experience and perspectives are indispensable for developing effective adaptation strategies. Ensuring women's active participation contributes not only to the effectiveness of climate policies but also to achieving broader gender equality and sustainable development goals[23].

Ukraine, having ratified key international agreements (e.g., the Paris Agreement), has assumed the relevant obligations. They go beyond just reducing greenhouse gas emissions and also require that gender equality be taken into account in national policy-making. For example, the National Action Plan for the Implementation of UN Security Council Resolution 1325 on Women, Peace and Security until 2025 (2020)[24] addresses, among other things, human security, access to resources (water and food), and the impact of armed conflict on women. The National Strategy for Overcoming the Gender Pay Gap until 2030 (2023)[25] sets specific targets for reducing the pay gap for work of equal value. Ukraine also has more specific strategies and policy documents, such as the State Strategy for Ensuring Equal Rights and Opportunities for Women and Men until 2030 (2022)[26], which requires the integration of gender approaches into all areas of state policy, including environmental policy. The National Energy and Climate Plan (2024)[27] notes that gender inclusion is an essential element of Ukraine's Energy Strategy until 2050 (2023). Ukraine is currently preparing its Second Nationally Determined Contribution (NDC2) with the targets until 2035, which will include a gender analysis.

19. https://ecoacademy.org.ua/sites/default/files/theme_files/tema_1_yak_povyazani_gender_ta_dovkillya.pdf
20. https://www.ipcc.ch/report/ar6/wg2/
21. https://www.undp.org/sites/g/files/zskgke326/files/2023-03/UNDP_Gender_Equality_Strategy_2022-2025_EN_V2.pdf
22. https://openknowledge.fao.org/items/852369bc-399d-40d8-a70c-0202f0c6cd49
23. https://www.ipcc.ch/report/ar6/wg2/
24. https://zakon.rada.gov.ua/laws/show/1544-2020-p#Text
25. https://ips.ligazakon.net/document/kr230815
26. https://zakon.rada.gov.ua/laws/show/752-2022-p#Text
27. https://me.gov.ua/Documents/Detail?lang=uk-UA&id=17f558a7-b4b4-42ca-b662-2811f42d4a33&title=NatsionalniiPlanZEnergetikiTaKlimatuNaPeriodDo2030-Roku

4. CHALLENGES FOR UKRAINIAN AGRICULTURE

4.1. Demographic situation and employment in Ukrainian agriculture

Adaptation of agriculture to climate change is one of the most critical tasks for Ukraine in the context of post-war reconstruction and increasing climate risks. Changes in weather conditions, changes in precipitation distribution, droughts, declining yields, soil degradation, and increased water scarcity have a direct impact on food security, economic stability, and the well-being of rural communities. At the same time, these processes have a distinct gender dimension: women and men are affected differently by climate change due to existing socio-economic inequalities.

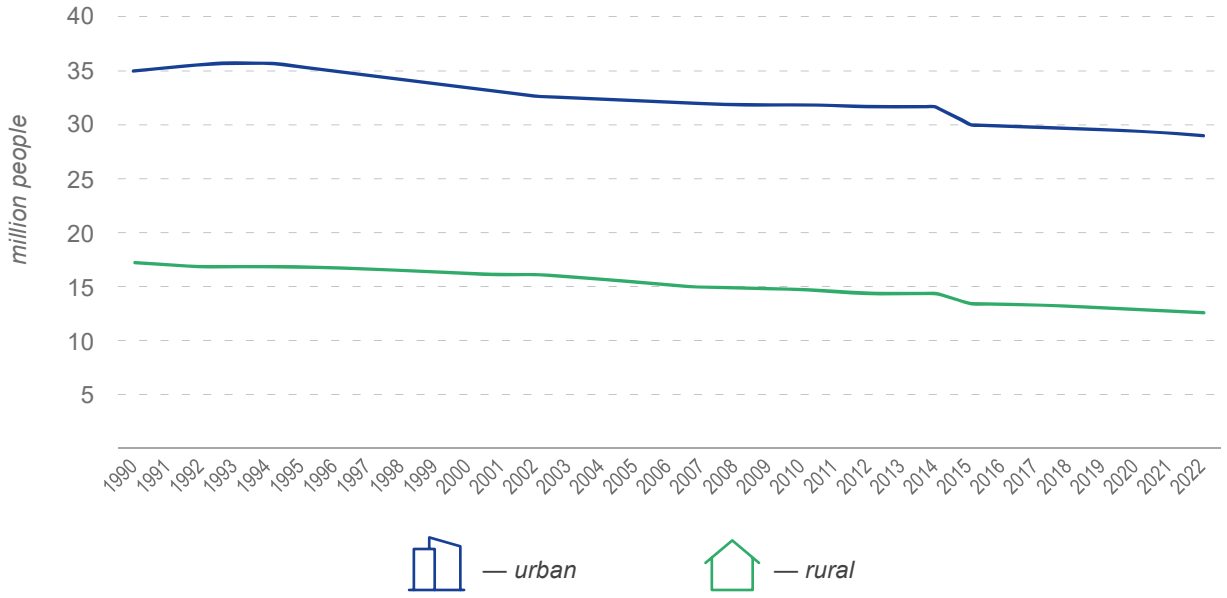
Despite the higher level of education among women in Ukraine, their access to resources such as land, financing, and modern technologies remains limited. Women in rural communities are more likely to be engaged in less productive forms of economic activity, earn lower incomes, and bear the brunt of family care. The gender pay gap, which reached more than 40% in 2023, significantly reduces their economic capacity to adapt to environmental change. International experience, such as the European Union's EGD and CAP policies, demonstrates that integrating a gender perspective into adaptation strategies enhances the resilience of the agricultural sector. Involving women in decision-making processes, ensuring equal access to resources, and supporting their entrepreneurial activity allows for a more effective response to the challenges of climate change.

In the Ukrainian context, it is also essential to take into account additional vulnerability factors: the effects of a full-scale war, depopulation of rural areas, a growing share of female-headed households, increased energy poverty, and limited access to social and healthcare services. In the context of the expected feminisation of agriculture, gender equality is crucial for the development of a modern, climate-resilient agricultural policy.

The preparation of Ukraine's Climate Change Adaptation Strategy for Agriculture by the Ministry of Agrarian Policy and Food of Ukraine presents an opportunity to systematically consider the gender dimension and establish tools to overcome existing barriers. Appropriate consideration of gender aspects will help create a fair and economically viable agricultural system that better responds to the challenges of climate change.

Ukraine's agricultural sector is under pressure from several interrelated crises: a full-scale war, climate change, and a profound demographic crisis. The decline in population, especially in rural areas (Figure 1), is exacerbated by the hostilities, migration, and mobilisation. The population in Ukraine is declining in both urban and rural areas. Actual data on the current population in Ukraine is even lower, but this information is not available at the time of writing.

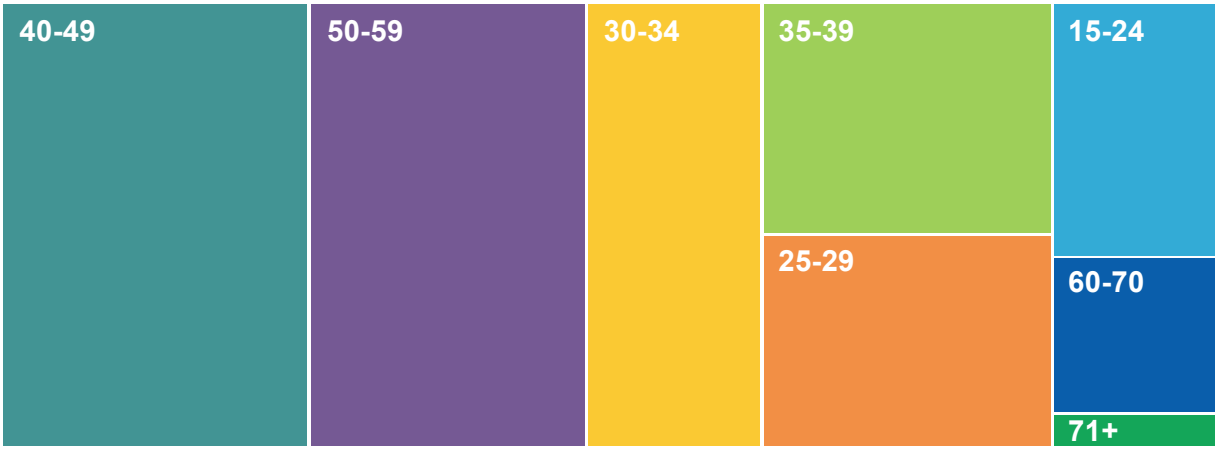
Figure 1. Dynamics of urban and rural population in Ukraine, million people



Source: SSSU

As of 2021, 14.12% of the employed population in Ukraine was employed in agriculture[28]. A key problem is the ageing of the population, which is especially noticeable in rural areas. In 2021, the average age of women who headed rural households was 62 years, and that of men was 57 years. The largest share of those employed in agriculture falls on the 40-59 age group (Figure 2).

Figure 2. Employment by age group in rural areas in 2021



Source: SSSU. Employment of the population by gender, type of area, and age group in 2021

For comparison, the EU is also experiencing a demographic crisis caused by low birth rates and rising life expectancy. As of the beginning of 2023, the population dropped to 448 million people for the first time. This also affects employment in the EU agriculture sector. Thus, the labour productivity index in 2023 decreased by 6.6%, which resulted in a 7.9% reduction in the real value of income[29]. The most significant declines were observed in Estonia, Sweden, Ireland, Lithuania, and Bulgaria. The main areas of impact of the demographic crisis in the EU are labour shortages, an increase in the average age of workers, and rising pension costs for industry workers.

28. https://tradingeconomics.com/ukraine/employment-in-agriculture-percent-of-total-employment-wb-data.html
29. http://agroconf.org/content/produktivnist-praci-v-silskomu-gospodarstvi-ies-vpala-na-7-u-2023-roci

These trends have profound implications for the agricultural sector and food systems.

- Labour shortages: The outflow of men and young people from rural areas is creating an acute shortage of skilled workers, making it impossible to run efficient farms. The deficit can be partially offset by attracting labor migrants from other countries, as well as through automation and the robotization of production.
- The “feminisation” of agriculture: women are increasingly bearing the burden of maintaining households and local food systems, often without adequate support and resources.
- Threat to food security: without a new generation of farmers and workers, not only is large-scale commodity production at risk, but also the local food supply.

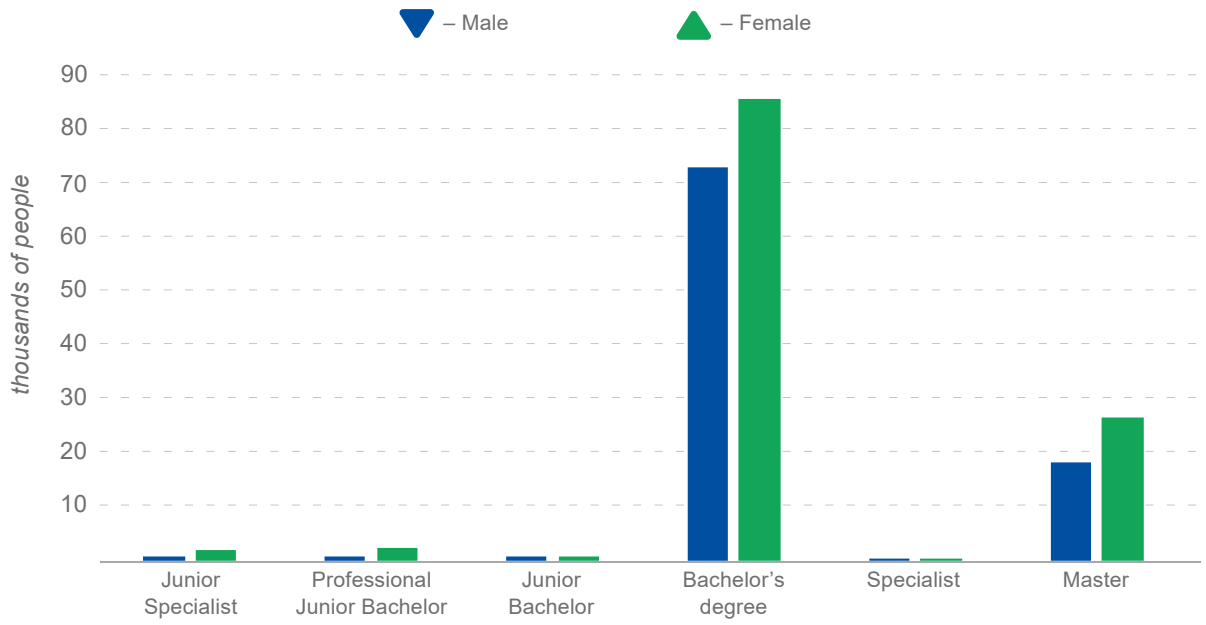
Post-war recovery will require unconventional solutions, such as automation and robotics, but above all, investments in the remaining human capital, where women will play an increasingly important role.

4.2 Education, work, and gender inequality in the context of climate change

There is a profound socio-economic paradox in Ukraine: women, who formally have a higher level of education, remain significantly more vulnerable in the labour market. This problem is systemic and is particularly acute in rural areas, affecting migration processes, food security, and the overall development of communities.

Judging by the number of formal diplomas obtained, women in Ukraine have a higher level of education than men, and they also tend to obtain higher levels of education than men (Figure 3).

Figure 3. Number of people graduating from higher education institutions in 2023/24



Source: SSSU. Distribution of HEI students by educational degrees, fields of study, and degrees at the beginning of the 2023/24 academic year.

The simple number of diplomas does not provide a complete understanding of the trend. For the analysis, it is essential to take into account the structure of education and its relevance to the needs of the labour market, especially in the urban-rural context:

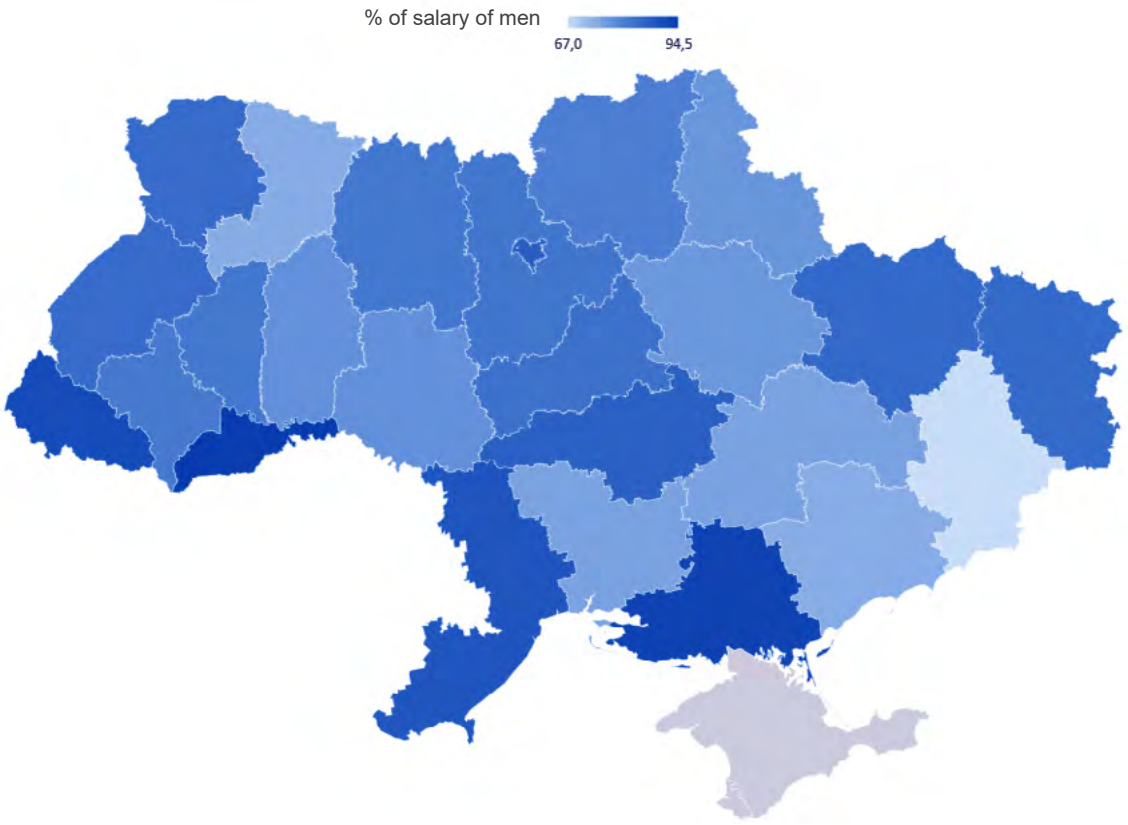
- Horizontal segregation by specialty: Women traditionally dominate in sectors such as education, humanities, social sciences, and healthcare. These sectors are predominantly state-funded and are characterised by significantly lower wages compared to male-dominated industries (industry, construction, IT, transport).
- Mismatch with the needs of rural areas: the specialities that women receive in cities often have no practical application in rural areas. This creates an «educational gap» between women's qualifications and real vacancies in agriculture or related industries. As a result, higher education for women from rural areas often catalyses urban migration, which in turn contributes to depopulation in rural communities.

Thus, higher education for women is essential for the labour market as it is an indicator of high human capital. However, due to structural distortions in the economy, this capital is used inefficiently, resulting in neither personal economic growth for women nor the development of rural areas.

Despite their higher level of education, women in Ukraine are still paid less than men. According to the average monthly salary, in Q4 2021, the gap was 18.4% (Figure 4). During the full-scale war, the situation deteriorated significantly: in 2023, women on average earned 41.4% less than men[30]. The need to care for the entire family in the absence of men further exacerbates the situation[31]. In the early 2000s, women's unpaid domestic work collectively exceeded employment in the formal economy[32]. Occupational segregation limits women's opportunities and hinders the effective use of their human capital, including in agriculture[33]. Young women with children under three in rural areas are one of the most vulnerable groups due to difficult access to health and social services and discrimination in employment[34]. Additional factors of discrimination include disability, ethnicity (e.g. Roma community) and displacement[35].

30. https://www.help-platform.in.ua/wp-content/uploads/2025/01/report-en.pdf
31. https://documents1.worldbank.org/curated/en/099022025114040022/pdf/P180174-ca39eccd-ea67-4bd8-b537-ff73a675a0a8.pdf
32. https://www.wicc.net.ua/media/gender-relations-rural-ukraine.pdf
33. https://documents1.worldbank.org/curated/en/099022025114040022/pdf/P180174-ca39eccd-ea67-4bd8-b537-ff73a675a0a8.pdf
34. Gender analysis of regional development in Ukraine https://shorturl.at/v0IGM
35. Kartashova, O. (2020). Gender aspects of rural development. Tavrian Scientific Bulletin. Series: Economics, (1), 185-194. http://tnv-econom.ksauniv.ks.ua/index.php/journal/article/view/24

Figure 4. Gender pay gap in 2021, %



Source: SSSU. Average monthly salary by gender and region in 2021

The most significant pay gap between men and women was observed in Donetsk and Rivne regions, which may be due to the higher proportion of men employed in the mining industry. The smallest gap was recorded in the Kherson and Chernivtsi regions.

In Q4 2021, the total level of women's remuneration was 81.6% of men's remuneration in the economy as a whole, and only 77.7% in agriculture[36]. The underestimation of women's labour contributes to this gap, as well as the significant amount of unpaid domestic work and family care. In other words, formal qualifications do not translate into economic equality. Even in the same industry, women are much less likely to hold senior positions. This invisible barrier hinders their career advancement. Since the highest salaries are concentrated in top positions, this directly affects average earnings. In addition, work that is associated with traditionally feminine traits (e.g., communication, empathy, organisation) is often perceived as "soft skills" and may be less financially valuable than technical or managerial skills, even if the level of complexity and responsibility is the same.

As noted above, in 2023, the National Strategy for Overcoming the Gender Pay Gap until 2030 was adopted, and an operational action plan for 2023-2025 was approved[37]. The goal of the strategy is to reduce the pay gap by five percentage points by 2030 compared to 2021. A significant pay gap leads to unequal access to resources, which, in the context of climate change, means differing adaptive capacities.

Between 2021 and 2023, the employment rate for women decreased from 52.7% to 49.8%, while

36. SSSU. Average monthly salary by gender and type of economic activity per quarter in 2021.
37. Order of the Cabinet of Ministers of Ukraine of 15 September 2023 No. 815-r «On Approval of the National Strategy for Overcoming the Gender Pay Gap until 2030 and Approval of the Operational Action Plan for its Implementation for 2023-2025» https://zakon.rada.gov.ua/laws/show/815-2023-p#n14

the rate of informal employment increased from 16.2% to 18.8%. Of the total number of registered unemployed in 2023, women accounted for 74.9%[38]. All these factors reduce the level of social protection for women, especially in the agricultural sector, where access to resources and climate change adaptation are particularly relevant.

Thus, the gender pay gap is growing due to the following factors:

- **Occupational segregation:** as mentioned above, women are concentrated in low-paid sectors.
- **Vertical segregation:** women are much less likely to hold managerial positions, even in «women's» sectors, which limits their career and salary growth.
- **Unpaid care work:** Women bear the brunt of caring for children, sick and elderly relatives, and household chores. This limits women's time and energy for professional development and paid work.
- **The impact of war:** The full-scale invasion has exacerbated these factors. The mobilisation of men, many of whom worked in higher-paying sectors (industry, construction), and the destruction (or non-functioning) of social infrastructure (kindergartens, schools, including due to lack of shelters) led women, who became the sole breadwinners, to accept any available, often low-skilled and low-paid job, while also doing all the care work.

Thus, the current situation not only perpetuates poverty among women but also undermines the economic potential of entire regions, making it impossible to build a sustainable and inclusive agricultural sector.

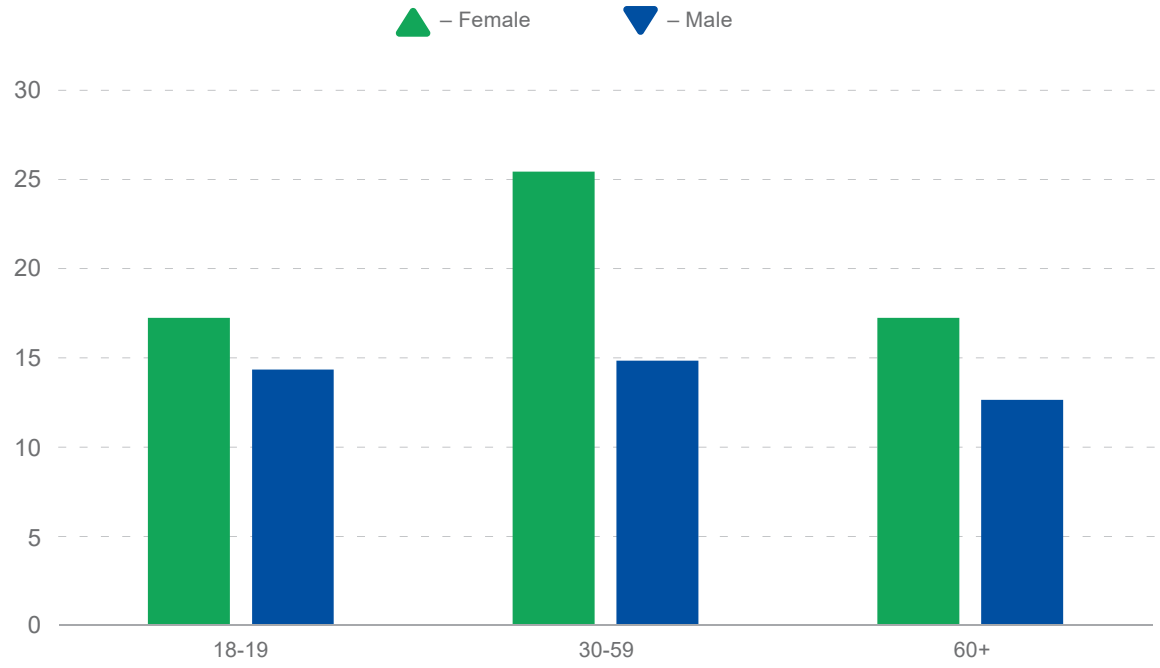
38. https://documents1.worldbank.org/curated/en/099022025114040022/pdf/P180174-ca39eccd-ea67-4bd8-b537- ff73a675a0a8.pdf

5. ENERGY POVERTY IN UKRAINE

The concept of energy poverty is not defined in Ukrainian legislation. Energy poverty has several dimensions, but in the context of high energy prices, it primarily characterises the inability to ensure a comfortable home temperature.

Reduced ability to pay for utilities in Ukraine is typical not only for people with disabilities, families with young children, and the elderly, but also for many typical low-income households. In 2021, 98.4% (98.5% in 2019) of surveyed households considered the inability to maintain a sufficient temperature in the home (to buy fuel, a heater, etc.) to be a sign of poverty during the heating season. 98.5% suffered from the inability to maintain a sufficiently high temperature[39]. It is noteworthy that women are more vulnerable to energy poverty and are much more concerned about it in all age groups, but especially in the 30-59 age group.

Figure 5. Inability to ensure a comfortable home temperature in winter among Ukrainian households in 2021



Source: SSSU. Level of poverty and deprivation of persons in the household, depending on the age and gender of the persons who lead the household (head of the household), in 2021 https://www.ukrstat.gov.ua

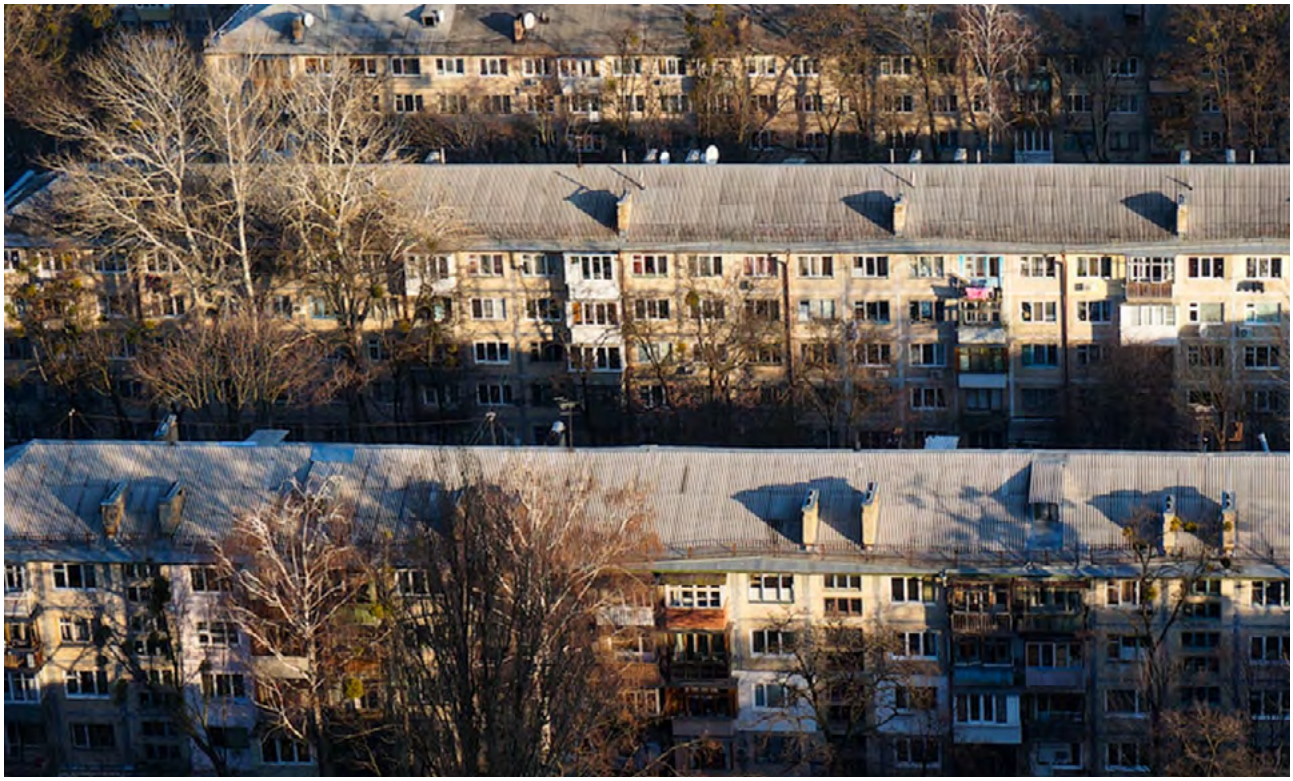
In rural areas, in the context of climate change, energy poverty is important for several reasons:

- **Increased vulnerability to weather extremes:** rural households without access to energy for various reasons cannot use climate-resistant equipment (e.g., pumps for irrigation, ventilation for food storage, heating in cold weather, or air conditioning in hot weather), making them more vulnerable to droughts, floods, and frosts.
- **Increased time and labour costs:** in the absence of energy equipment or inability to use it (e.g. an electric stove, a pump), household members, primarily women, spend more time on basic household tasks (collecting firewood, fetching water), which reduces their time and energy for paid work.

39. SSSU. Level of poverty and deprivation of persons in the household, depending on the age and gender of the persons who lead the household (head of the household), in 2021 https://www.ukrstat.gov.ua

- **Deterioration of health:** due to the use of traditional energy sources (firewood, coal) in poorly ventilated rooms, the air quality in homes deteriorates, which can aggravate respiratory diseases, especially for vulnerable groups (children, the elderly).
- **Restrictions on educational opportunities:** in the evening, rural households without electricity cannot provide adequate conditions for studying, which is especially important for children and adolescents.

Income levels in rural areas in Ukraine are generally lower than in urban areas. In addition, rural areas in Ukraine are characterised by low-rise buildings. Under these conditions, it is more challenging to ensure a comfortable home temperature in rural areas. This was a more significant problem during the cold season. Still, with climate change exacerbating the issue of heatwaves, it is also becoming a problem in the summer when households cannot afford air conditioning. The heat is particularly detrimental to children and the elderly, and to internally displaced people in Ukraine (60% of whom are women[40]), who often live in worse conditions than they did at home. In general, women make up the majority of low-income people and are more likely to apply for social benefits[41]. According to a sociological survey conducted in 2020, Ukrainians surveyed noted that climate change affects their financial situation through increased electricity costs for irrigation and air conditioning, which was most relevant to Dnipro (54%) and Zaporizhzhia (46%) regions[42], as well as through reduced agricultural productivity[43]. In the city of Kyiv, 48% of women reported that climate change had affected their budget and financial situation (compared to 28 per cent of men)[44].



40. https://documents1.worldbank.org/curated/en/099022025114040022/pdf/P1801741ca39ec0d81b5371ff73a675a0a8.pdf
41. https://hromady.org/wp-content/uploads/2022/11/Гендерний-аналіз-регіонального-розвитку-України.pdf
42. https://ucn.org.ua/?p=8194
43. https://www.ekoltava.org/wp-content/uploads/2021/01/UKM-prezentatsiya_super-new-final.pdf
44. https://www.ekoltava.org/wp-content/uploads/2021/01/UKM-prezentatsiya_super-new-final.pdf

6. WOMEN'S ACCESS TO LAND USE AND LAND OWNERSHIP

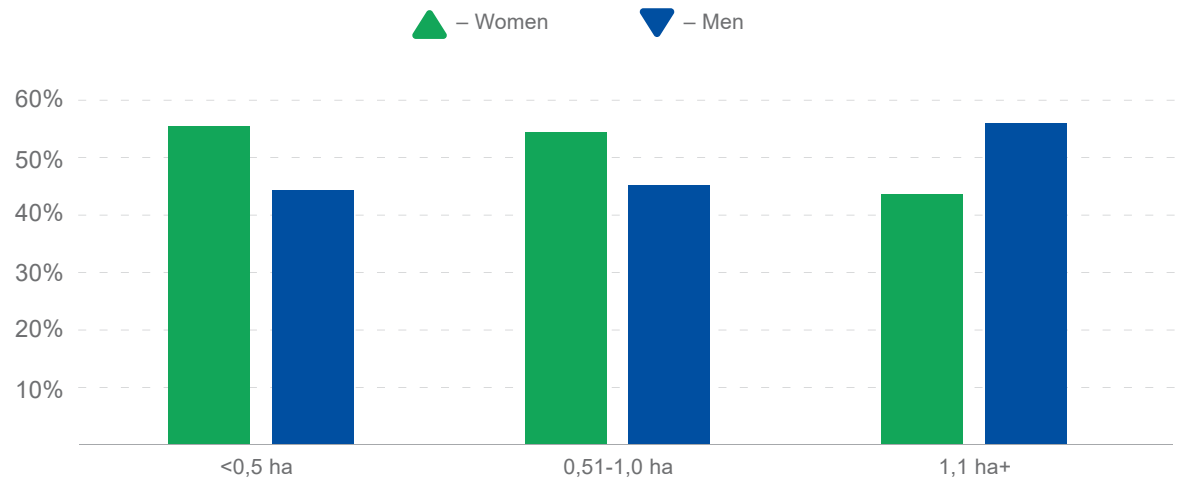
As of 2018, women formally owned more land than men: in absolute terms, there were 80.95 land plots per 100 women and 80.6 land plots per 100 men.

> *By «in absolute terms», we mean the number of land plots registered in the names of women or men, without taking into account the total number of women and men in the population. In absolute terms, women owned slightly more plots. However, in relative terms, if we take into account the demographic imbalance (there are more women than men in Ukraine), it turns out that the average man owns slightly more land (in terms of area).*

Taking into account the ratio of men to women, it turns out that men own more land plots than women, with the exception of Rivne, Donetsk, Volyn regions and the city of Kyiv. The area of land owned by women is mostly smaller than that of men, except for seven oblasts[45]. These are good indicators from the perspective of gender equality, as according to FAO, only 15% of landowners in the world are women[46].

In Ukrainian rural households, men have more land in use/ownership than women (Figure 6). Thus, the average size of land of a household in Ukraine as of 2021 was 1.24 hectares. The average total size of land shares and leased plots was 3.01 hectares. The average area of land in a household headed by a woman was 0.93 hectares, and by a man - 1.58 hectares. However, the majority of households are headed by women (52.7%).

Figure 6. Land owned by men and women in rural households in Ukraine in 2021



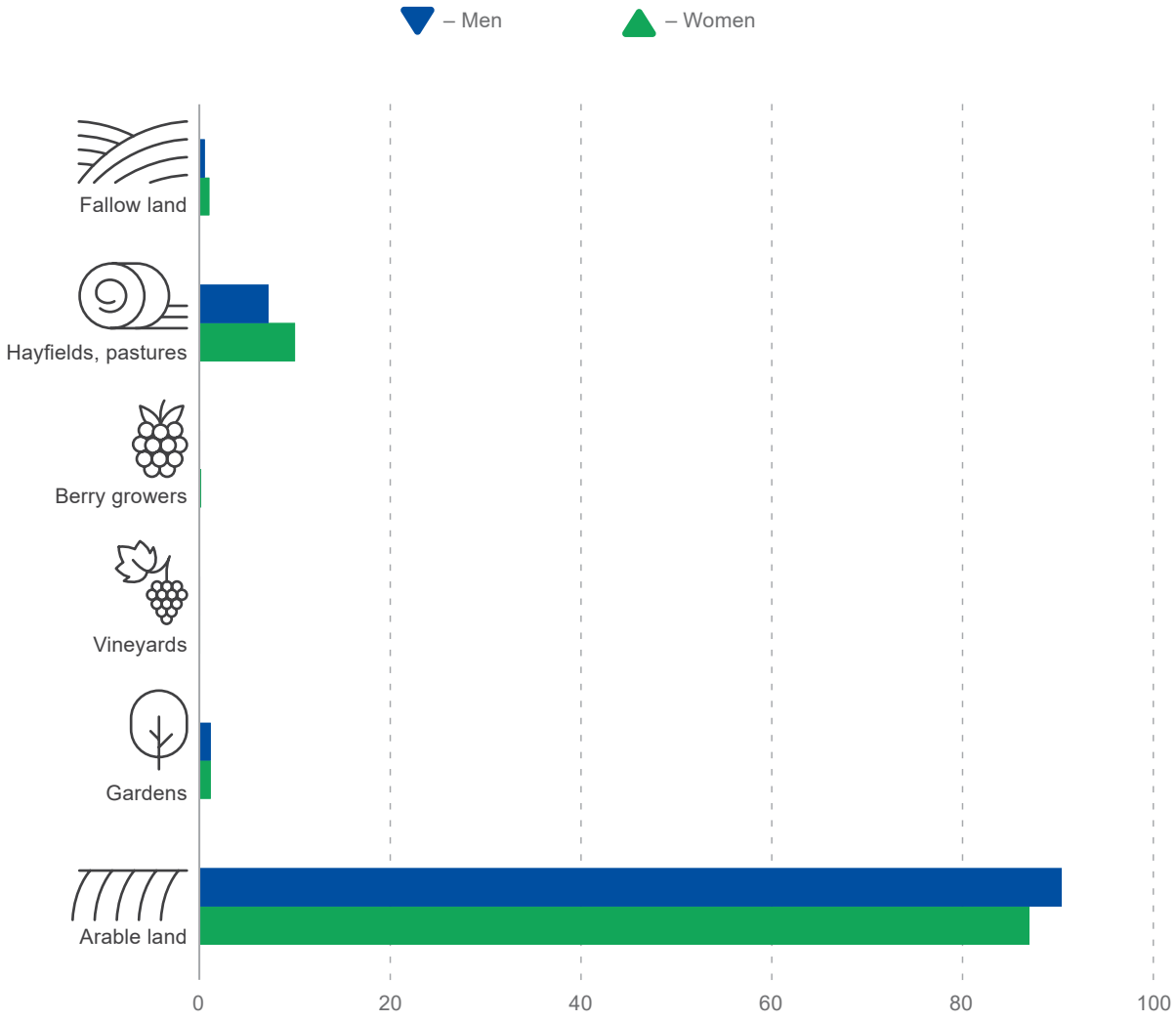
Source: SSSU. Main characteristics of rural households in 2021

45. https://voxukraine.org/selo-i-gender-komu-nalezhit-ukrayinska-zemlya-cholovikam-chi-zhinkam#_ftn2
46. https://openknowledge.fao.org/server/api/core/bitstreams/4966d50c-233b-43a9-8fa7-8d43263dd082/content

Given the war and depopulation, we can expect a further decrease in the number of men in rural areas, so the above statistics are expected to change in the post-war period.

In the structure of agricultural land, male-headed households were equally likely to have orchards and vineyards in 2021; female-headed households were somewhat more engaged in berry growing, and significantly more of them had pastures (Figure 7).

Figure 7. Profile of rural households with land in 2021



Source: SSSU. Main characteristics of rural households in 2021

Inheritance of land in Ukraine may have a certain impact on the distribution of land ownership between women and men. Formally, legislation guarantees equal inheritance rights, and there is no widespread practice of patriarchal land transfer to men within families reported in the country. Overall, the situation regarding women's access to land in Ukraine is significantly better than in many other countries. To effectively adapt agriculture to climate change, it is necessary not only to preserve but also to expand women's access to land, as well as to provide them with support in implementing climate-smart agricultural practices.

7. GENDER DIFFERENCES IN AGRICULTURAL PRODUCTIVITY

Crop yields on male-headed farms are generally slightly higher than on female-headed farms (Figure 8). Even though at the level of private subsidiary plots, women spend an average of 54 hours in summer and 29 hours in winter on farm work; for men, these figures are 46 and 26 hours respectively [47].

Figure 8. Yields of primary crops on farms in 2021, t/ha

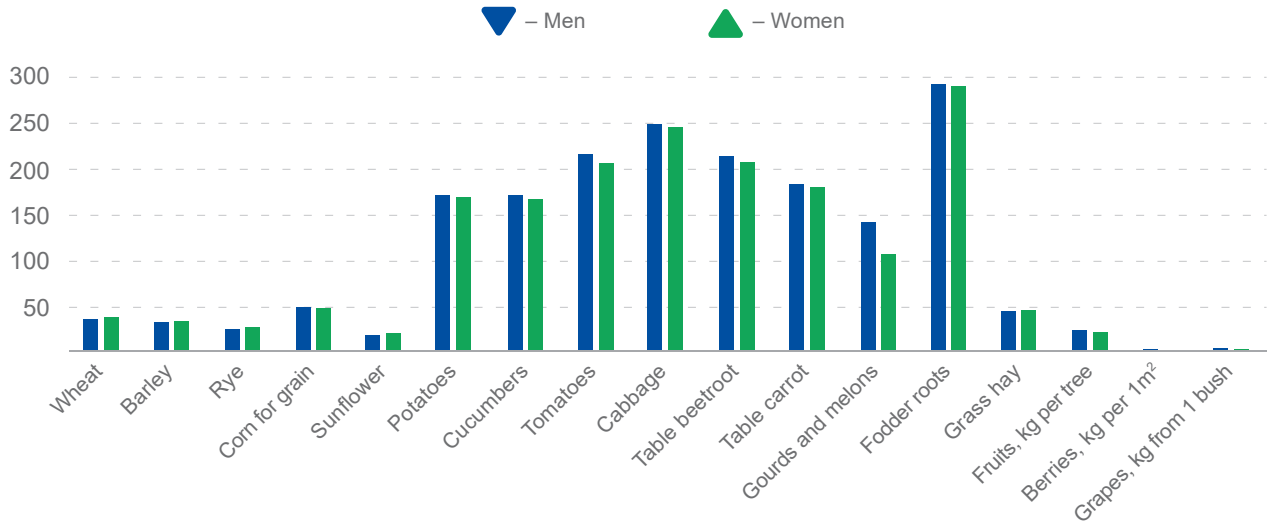
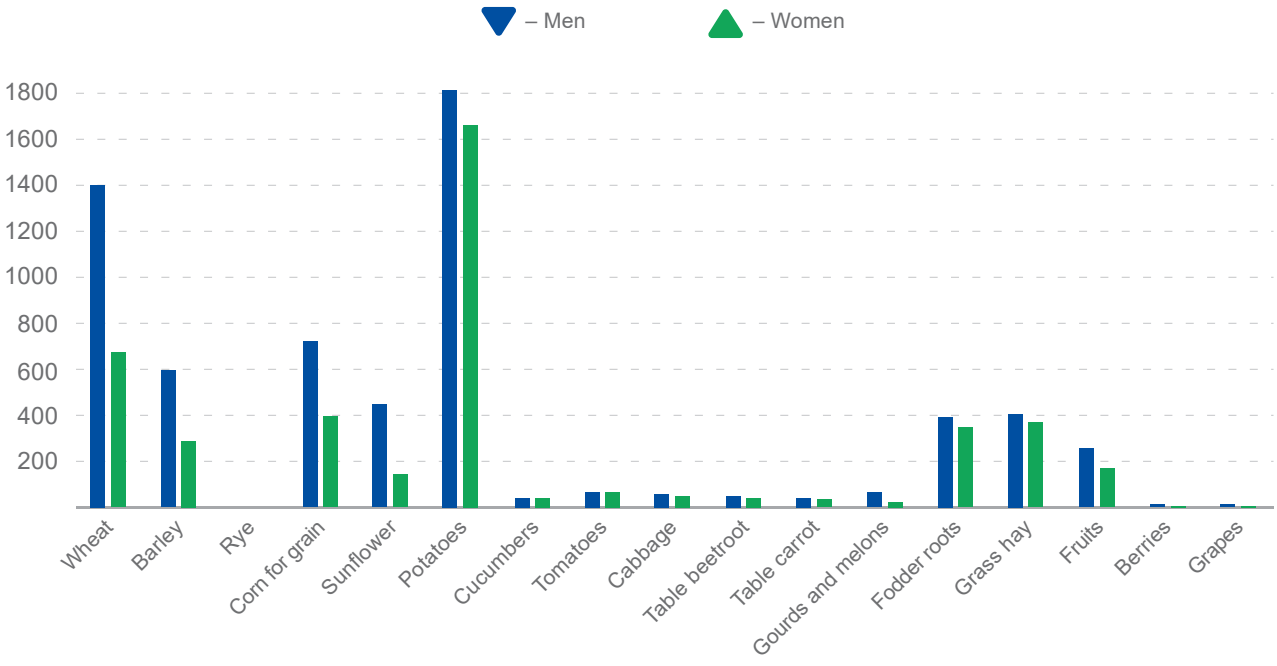


Figure 9. Amount of output per 100 households headed by men and women, t



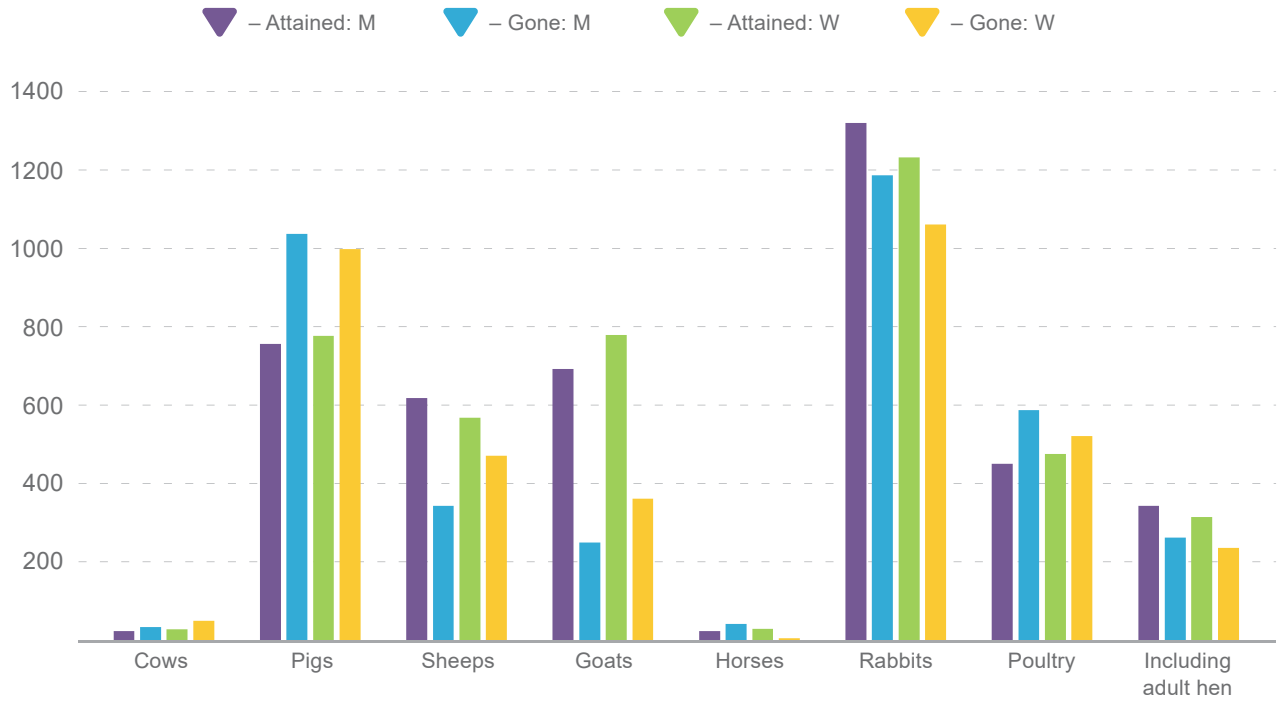
Source: SSSU. Crop harvest in 2021

47. https://www.wicc.net.ua/media/gender-relations-rural-ukraine.pdf

This may indirectly indicate that men have better access to crop protection products, fertilisers, machinery, etc. In general, women are more involved in small-scale subsistence farming, while men dominate commercial agriculture. This means that women may be more vulnerable to changes in weather conditions that affect small-scale farms, due to their limited adaptive capacity.

Concerning livestock, it can be argued that male-headed households keep slightly more livestock (63.6%) than female-headed households (59%) (of all households). There are 14.4 poultry per male-headed household and 11.5 poultry per female-headed household. In 2021, female-headed households had a slightly higher increase in pigs, goats, and poultry (but not chickens) than male-headed households (Figure 10).

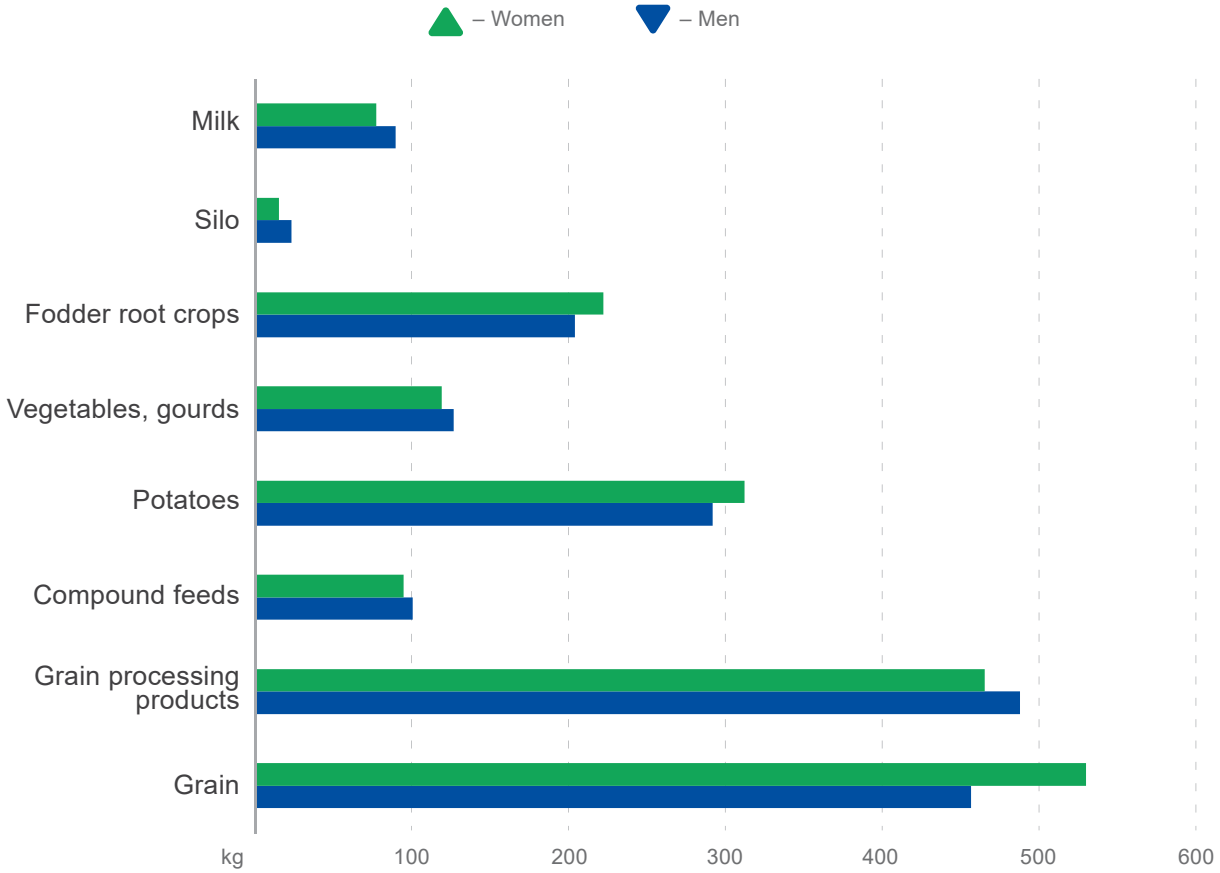
Figure 10. Number of livestock entering and leaving male-headed (M) and female-headed (F) households in 2021 (per 1000 animals of the respective species at the end of the month, heads)



Source: SSSU. Statistical information «Main indicators of agricultural activities of households in rural areas in 2021».

During the survey period, pigs, rabbits, and poultry (including chickens) were more intensively abandoned in male-headed households than in female-headed households. This may be because male-headed and female-headed households use different amounts of raw materials for livestock feeding (Figure 11). For example, female-headed households spend more grain, potatoes, and fodder roots per head than male-headed households.

Figure 11. Feed consumption for livestock feeding in 2021 per head, kg



Source: SSSU. Statistical information "Main indicators of agricultural activities of households in rural areas in 2021".

Gender differences in agricultural productivity in Ukraine indicate the existence of structural inequalities in access to resources, technology, and market opportunities. Farms headed by women have slightly lower yields of major crops and fewer livestock, despite the higher number of labour hours spent on farming. This reflects women's limited access to crop protection products, fertilisers, modern machinery, and investment resources. In the context of climate change, the small-scale nature of production on women-led farms increases their vulnerability to extreme weather events and reduces their adaptive capacity. Resource constraints also make it difficult to adopt modern adaptation practices, such as adopting more resilient agricultural technologies or using drought-tolerant crops.

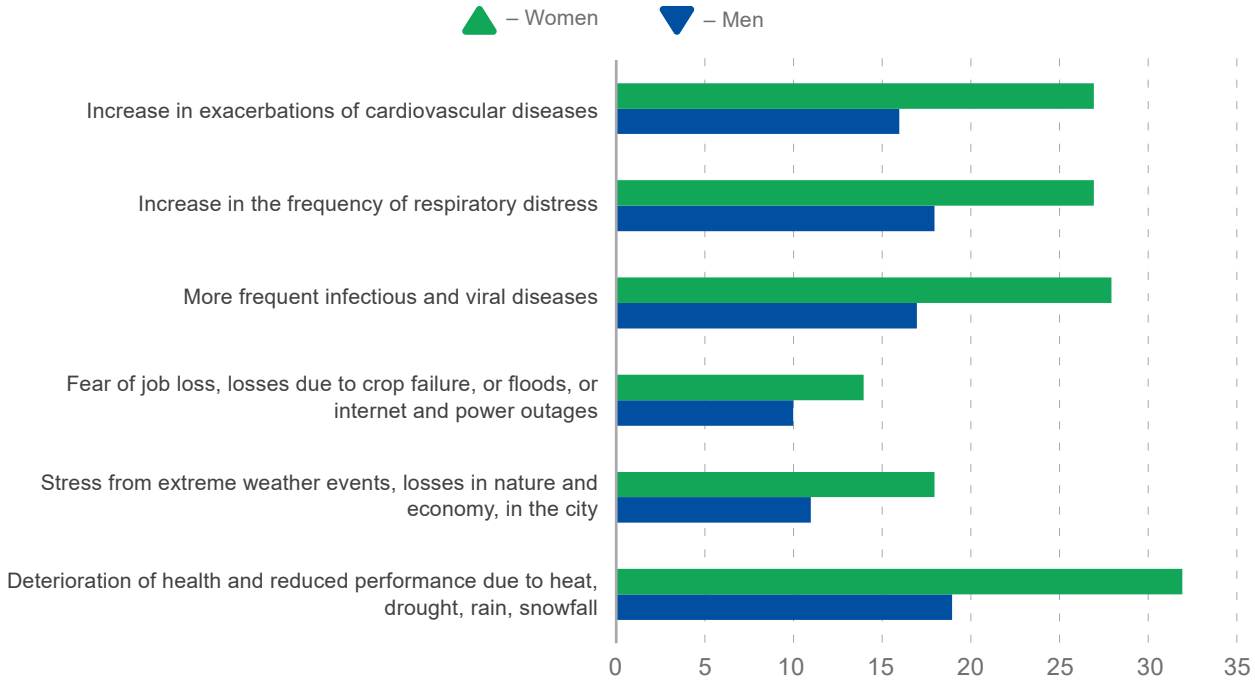
Therefore, increased support for women's farms, including through increased access to technology, finance and knowledge, is a prerequisite for improving the overall climate resilience of Ukraine's agricultural sector.

8. GENDER ASPECTS OF CLIMATE CHANGE ADAPTATION IN UKRAINE

8.1. Vulnerability of women to climate change in agriculture

According to a 2020 sociological survey, 73% of respondents believe that agriculture is the sector most affected by climate change[48]. Women are more vulnerable to climate change than men, which is also supported by international research[49] (Figure 12).

Figure 12. Vulnerability of men and women to climate change, % of «yes» answers[50]



Source: https://www.ekoltava.org/wp-content/uploads/2021/01/UKM- prezentatsiya_super-new-final.pdf

The main factors of their vulnerability are that women are more susceptible to meteorological conditions[51]: Climate change can negatively affect women's health through increased frequency of extreme weather events and increased respiratory and cardiovascular diseases[52]. In the event of adverse natural events (hurricanes, floods, extreme heat), women suffer significantly more casualties than men[53]: in developed countries, men are mostly affected because they are primarily in vehicles (that is, they find themselves in a kind of trap: a car does not provide adequate protection during a hurricane, they may suffer from heatstroke during heat waves, and vehicles can be easily swept away by water during floods), and in developing countries, 75% of victims are women and children because they are mostly unable to reach shelters[54].

48. https://ucn.org.ua/wp-content/uploads/2021/12/Zmina-klimaty-ta-klimatuchna-adaptacia_oputyvannia- UCN.pdf
49. https://idl-bnc-idrc.dspacedirect.org/server/api/core/bitstreams/e78ea497-f69c-421d-8740-a9d03fa7712d/content
50. https://www.ekoltava.org/wp-content/uploads/2021/01/UKM-prezentatsiya_super-new-final.pdf
51. https://povaha.org.ua/chomu-zhinky-vrazlyvishi-do-zminy-klimatu/
52. https://www.ekoltava.org/wp-content/uploads/2021/01/UKM-prezentatsiya_super-new-final.pdf
53. https://ecoacademy.org.ua/sites/default/files/theme_files/tema_1_yak_povyazani_gender_ta_dovkillya.pdf
54. https://50vidsotkiv.org.ua/yak-klimatychna-ne-spravedlyvist-pov-yazana-z-gendernoyu-ne-rivnistyu/

Women often bear the brunt of care work, which, among other things, depends on the availability of water and other resources[55]. Climate change may exacerbate access to these resources, thereby increasing the burden on women and rendering their work even more challenging. Women also have limited access to machinery, and they are the ones who perform the majority of monotonous mechanical labour (e.g., weeding crops)[56]. In conditions of high air temperatures, this significantly increases the negative impact on health.

Socio-economic constraints also play a significant role. Women are often restricted in their freedom to choose where they live due to financial dependence on other family members, which makes it difficult for them to adapt to climate change. This dependency limits women's ability to make decisions about their future. In addition, the full-scale war has further exacerbated the problem of women's poverty[57]. Women-headed households face critical needs; 35% of such households live below the subsistence level (compared to 19% of men)[58]. It is clear that poverty reduces adaptive capacity (with almost 25% of women in Ukraine reporting malnutrition[59]; and globally, women are twice as likely to be malnourished as men)[60].

Failing to address the challenges identified in the previous sections may result in ineffective adaptation strategies. For example, the promotion of new agricultural technologies will not yield the expected result if people do not have the financial means to implement them. Thus, overcoming gender inequality is a prerequisite for building a climate-resilient and productive food system in Ukraine.

More research is needed on the burden of climate change on human health (separately for men and women) in terms of adverse weather events (heat waves, floods, etc.), reduced access to water, reduced fodder resources, etc.

8.2. The role of women in implementing adaptation measures in Ukraine

Women can play an essential role in implementing climate change adaptation measures in Ukraine. Their participation in these processes can be key to increasing the resilience of agriculture and local communities to climate change.

There are already successful examples of the practical implementation of gender approaches in agriculture in the context of climate change in Ukraine. For example, the Oberig Agro agricultural cooperative (Domanivska community, Mykolaiv region) grows vegetables in greenhouses. At the beginning of the full-scale invasion, the greenhouses were destroyed, but the cooperative was able to rebuild them. They use agricultural waste briquettes to heat their greenhouses, schools, and hospital, and have installed a 30-kW solar power plant. This was made possible by the CASE project, with financial support from Oxfam GB and USAID and the Rural Women's Business Network. The cooperative also employs veterans (the "first veteran cooperative") and provides benefits to its members[61]. In addition, the CASE project has provided 1,145 rural communities with production kits[62].

Education and resource management are essential aspects of women's participation in adaptation processes. Women with higher education can manage their households and natural resources more efficiently, which contributes to reducing greenhouse gas emissions and increasing resilience to climate change. Women tend to be more knowledgeable about atypical plants and crops, and are

55. https://ucn.org.ua/?p=6378
56. https://www.wicc.net.ua/media/gender-relations-rural-ukraine.pdf
57. https://documents1.worldbank.org/curated/en/099022025114040022/pdf/P180174-ca39eccd-ea67-4bd8-b537-ff73a675a0a8.pdf
58. https://documents1.worldbank.org/curated/en/099022025114040022/pdf/P180174-ca39eccd-ea67-4bd8-b537-ff73a675a0a8.pdf
59. https://documents1.worldbank.org/curated/en/099022025114040022/pdf/P180174-ca39eccd-ea67-4bd8-b537-ff73a675a0a8.pdf
60. https://ecoacademy.org.ua/sites/default/files/theme_files/tema_1_yak_povyazani_gender_ta_dovkillya.pdf
61. https://www.oberig-agro.com
62. https://www.oberig-agro.com/project-case

more resource-constrained, and use species and varieties that men are not inclined to use. This contributes to the conservation of biodiversity[63].

Participation in adaptation projects is also essential. Women can be key stakeholders in climate change adaptation projects, especially those that improve their situation and reduce gender imbalances. Women can provide important knowledge about local conditions and community needs[64], which helps to design more effective and targeted projects. When farming, women tend to choose crops that are better preserved and more resistant to pests and diseases, which is an important adaptation measure[65].

Supporting local initiatives is another essential aspect of women's participation in adaptation processes. Women can initiate and support local initiatives to protect the environment and adapt agriculture to climate conditions. This may include the introduction of new technologies and farming practices that increase agricultural productivity and resilience to climate change.

Gender equality in general and in agriculture in particular is vital for several reasons:

- It reduces women's dependence on men and empowers women;
- Women are more concerned about the environment, and generally tend to farm more environmentally friendly[66],[67], and are more likely to choose organic farming and alternative crop cultivation practices[68]. Such practices are more in line with the EGD and climate change adaptation.
- Due to the war, the share of men in Ukraine has decreased and will continue to decline in the labour market, so there may be a feminisation of agriculture.
- It is necessary for the development, approval, and monitoring of climate change adaptation indicators.

In the context of climate change, further research (supported by statistical observations) is needed at least in the following areas:

- Women's access to land, water, fertilisers, credit, machinery, and markets. If women have less access, this limits their ability to adapt to climate change.
- Women's access to irrigation systems. Women who work on family farms are more dependent on rain-fed irrigation, while men may have access to on-farm and inter-farm irrigation systems. There are currently no statistics on the availability of irrigation equipment in male-headed and female-headed farms.
- Use of adaptation practices by male- and female-headed households.

63. https://www.wicc.net.ua/media/gender-relations-rural-ukraine.pdf
64. https://ecoacademy.org.ua/sites/default/files/theme_files/tema_1_yak_povyazani_gender_ta_dovkillya.pdf
65. https://www.wicc.net.ua/media/gender-relations-rural-ukraine.pdf
66. Fertő, I., Bojnec, Š. Empowering women in sustainable agriculture. Sci Rep 14, 7110 (2024). https://doi.org/10.1038/s41598-024-57933-y
67. Tourtelier, C., Gorman, M., & Tracy, S. (2023). Influence of gender on the development of sustainable agriculture in France. Journal of Rural Studies, 101(4), 103068. https://doi.org/10.1016/j.jrurstud.2023.103068
68. https://www.oecd.org/content/dam/oecd/en/publications/reports/2021/05/gender-and-the- environment_016cfd67/3d32ca39-en.pdf

9. RECOMMENDATIONS

GENDER MAINSTREAMING IN AGRICULTURAL POLICIES AND PROGRAMMES

- Introduce gender-sensitive goals, objectives, and indicators into the Climate Change Adaptation Strategy in agriculture.
- Ensure sex-disaggregated data collection on irrigation infrastructure and the availability of machinery on farms.
- Integrate a gender component into national agricultural support programmes.
- Implement gender monitoring in reporting, particularly regarding women's access to finance, education, resources, and technologies.

WOMEN'S EMPOWERMENT

- Develop targeted grant programmes for women in agriculture and climate-oriented projects.
- Launch training programmes for women in innovative agrotechnologies, financial literacy, and entrepreneurship.
- Ensure women's access to financial resources, equipment, and advisory services.

SOCIAL JUSTICE AND LABOUR RIGHTS

- Implement measures to reduce the gender pay gap, including a review of approaches to unpaid domestic work.
- Increase hourly and minimum wages in agriculture in line with the National Strategy for Overcoming the Gender Pay Gap in Ukraine until 2030.

SPECIAL ATTENTION TO VULNERABLE GROUPS

- Develop adaptation measures for elderly people and persons with disabilities in rural areas, particularly during climate extremes.
- Engage women in interdisciplinary professions at the intersection of agroecology, meteorology, and digital technologies.

AWARENESS-RAISING AND RESEARCH

- Conduct communication campaigns highlighting the role of women in climate change adaptation.
- Initiate regular studies of gender aspects in climate policy to improve future programmes.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