FINAL DRAFT

Development template for the

SOER 2025 country space of UKRAINE

PART 1: ASSESSMENT OF TRENDS IN ENVIRONMENT AND CLIMATE

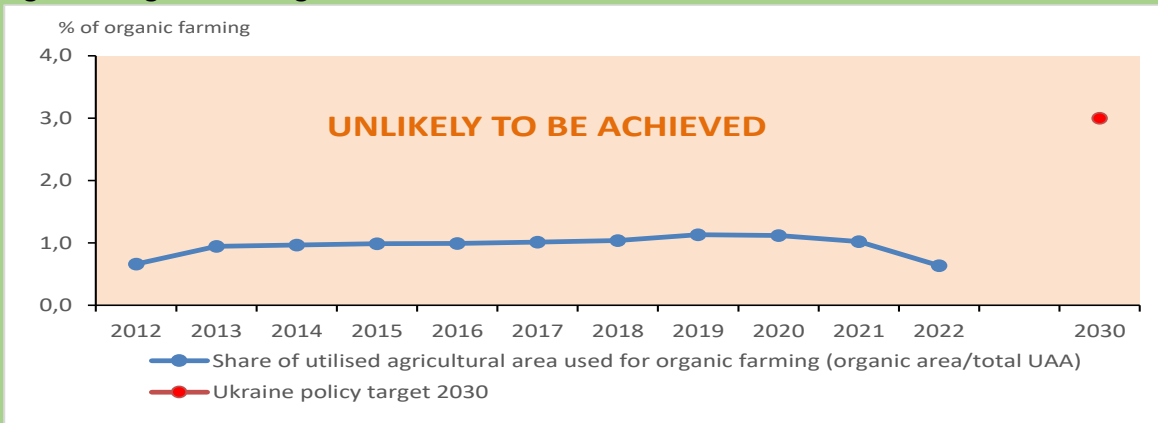
Indicator 1: organic farming *[max 1200 characters with spaces]*

As of 2018, Ukraine has a functioning legal and certification system regarding organic production. The majority are certified according to EU organic standards, making the export market of organic products an important sector. The main exported products are corn, wheat, soya, sunflower seeds and oil and rapeseed. In total, 80 different organic products are exported to 35 countries. The domestic market for organic products has been constantly growing since 2008, but still struggles with low awareness and limited purchasing powers.

The UAA under organic farming in Ukraine estimated at 264 thousand hectares in 2022. National economic strategy for the period until 2030 sets the target that, by 2030, at least 3% of the total Ukrainian area of agricultural land should be under organic farming. Despite this goal, the share of Ukraine's utilised agricultural area (UAA) under organic farming decreased slightly from 0.66% in 2012 to 0.64% in 2022.

Currently, it is highly unlikely that the 2030 target will be achieved due to the significant gap. The existing policy support alone is insufficient to reach the target, and the demand for organic products has become more volatile since 2022.

Figure 1. Organic farming in Ukraine



References:

- State Statistics Service of Ukraine (SSSU). Statistical Yearbook "Agriculture of Ukraine" for 2020. https://www.ukrstat.gov.ua/druk/publicat/kat_u/publ7_u.htm
- Faostat. Data on Ukraine https://www.fao.org/faostat/ru/#country/230XX
- Data of the ORGANIC FEDERATION OF UKRAINE. https://organic.com.ua/organic-v-ukraini/
- Data from the website of the Ministry of Agrarian Policy and Food of Ukraine. https://minagro.gov.ua/napryamki/organichne-virobnictvo/organichne-virobnictvo-v-ukrayini
- National report on the state of the natural environment in Ukraine, 2021 (p.304) https://mepr.gov.ua/diyalnist/napryamky/ekologichnyj-monitoryng/natsionalni-dopovidi-pro-stan-navkolyshnogo-pryrodnogo-seredovyshha-v-ukrayini/

Organic in Ukraine. Factsheet as of 12.02.2020. OrganicInfo (2020). https://organicinfo.ua/wp-content/uploads/2020/02/UAOrganic_fact_sheet_2020-1.pdf

Areas of agricultural land and organic area are used to estimate the indicators of share of utilised agricultural area used for organic farming. (Expert calculations).

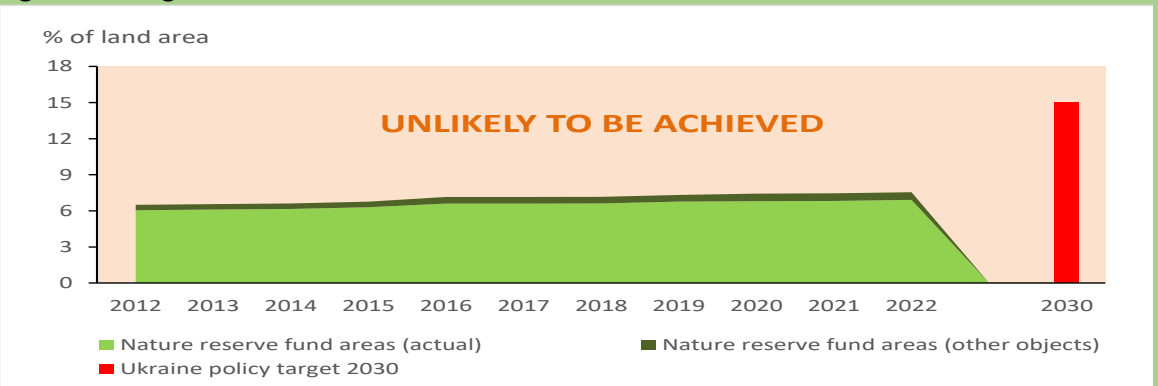
Indicator 2: Terrestrial protected areas *[max 1200 characters with spaces]*

By the end of 2022, protected areas covered 7,5% of Ukrainian land, with 6.9% of this area designated as actual area of the nature reserve fund (or 4173 thousands ha) and 0.6% as other objects of the nature reserve fund (or 383 thousand ha). The Ukrainian strategy of the State Environmental Policy for 2030 sets out a target of protecting at least 15% of Ukrainian land by 2030, while also ensuring that all protected areas are effectively managed. If the designation of protected areas continues at the rate seen in the past decade (1.05 percentage points increase since 2012), the target will not be met.

Historically, protected areas have taken many forms and have been established for different purposes, such as protecting wild game resources, preserving natural beauty and, more recently, safeguarding biodiversity and ecosystem services.

The Ukrainian's protected areas are highly diverse, varying in size, aim and management approach. By the end of 2022 in Ukraine 8889 territories and objects of natural reserve fund are being protected. Almost half of the area of the nature reserve fund of Ukraine (47%) is occupied by 24 nature reserves and 56 national nature parks. Rest are large in number but mostly rather small in size.

Figure 1. Designated areas in Ukraine



References:

- SSSU's Statistical Yearbook "Environment of Ukraine", 2016, 2017, 2019, 2020, 2022 https://www.ukrstat.gov.ua/druk/publicat/kat_u/publnav_ser_u.htm
- Open data. The data of the Ministry of Ecology and Natural Resources of Ukraine. State cadastre of territories and objects of the nature reserve fund https://data.gov.ua/dataset/mepr_05
- National report on the state of the natural environment in Ukraine, in 2014, 2017, 2018, 2019, 2020, 2021 https://mepr.gov.ua/diyalnist/napryamky/ekologichnyj-monitoryng/natsionalni-dopovidi-pro-stan-navkolyshnogo-pryrodnogo-seredovyshha-v-ukrayini/

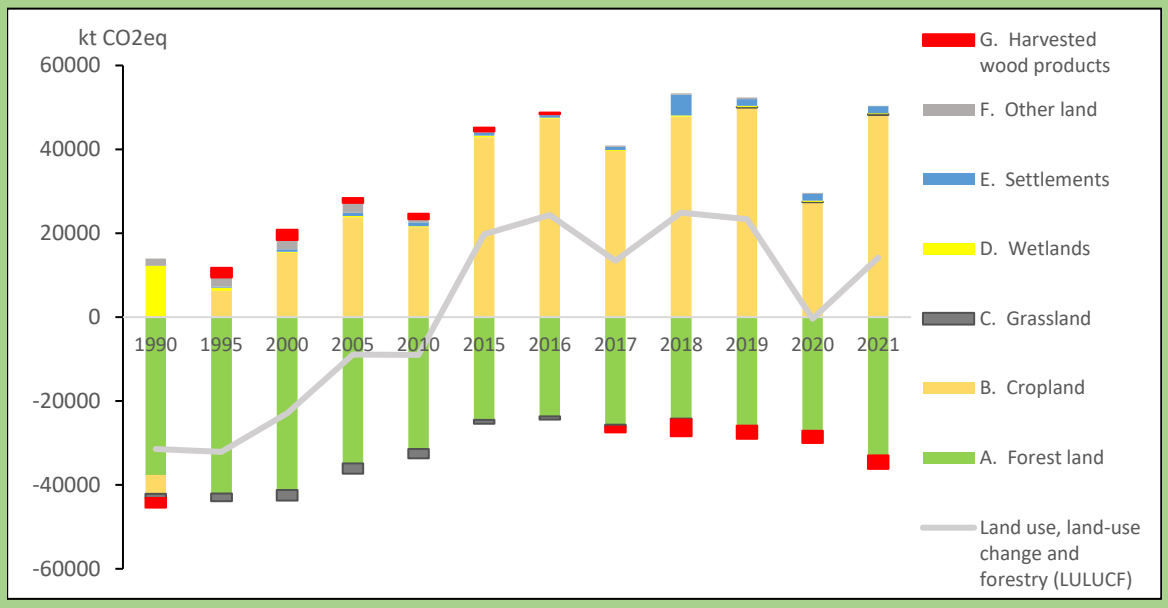
Areas of the country's territory and nature reserve fund are used to estimate the indicators of the share of protected areas. (Expert calculations).

Indicator 3: Emissions from land use, land use change and forestry (LULUCF) *[max 1200 characters with spaces]*

The land use, land use change and forestry (LULUCF) sector plays a key role in achieving the countries goal of zero net emissions. LULUCF activities in Ukraine removed net 31 metric tonnes of CO equivalent (Mt CO_2-eq) from the atmosphere in 1990, equal to 3% of the country annual greenhouse gas emissions and in 2021 trend has changed. LULUCF activities have become a source of 14 Mt CO_2-eq. GHG emissions.

From 1990 to 2010 and in 2020 (except 2008), the resulting GHG removals were observed in the sector, while in 2011-2019 and in 2021 the sector became a net source. Overall, CO_2e removals have decreased mainly as a result of increased harvest of wood as well as lower sequestration of carbon by ageing forests. Natural disturbances (e.g. wind throws, forest fires, droughts) also were caused inter-annual variations in the LULUCF sector. Cropland, grassland, wetland, settlements and other land are become sources of LULUCF emissions at Ukraine, with soils containing large proportions of organic matter (mainly peat) accounting for a large proportion of these emissions.

Figure 1. Ukraniane emissions and removals of the LULUCF sector by main land use category (1990-2021)



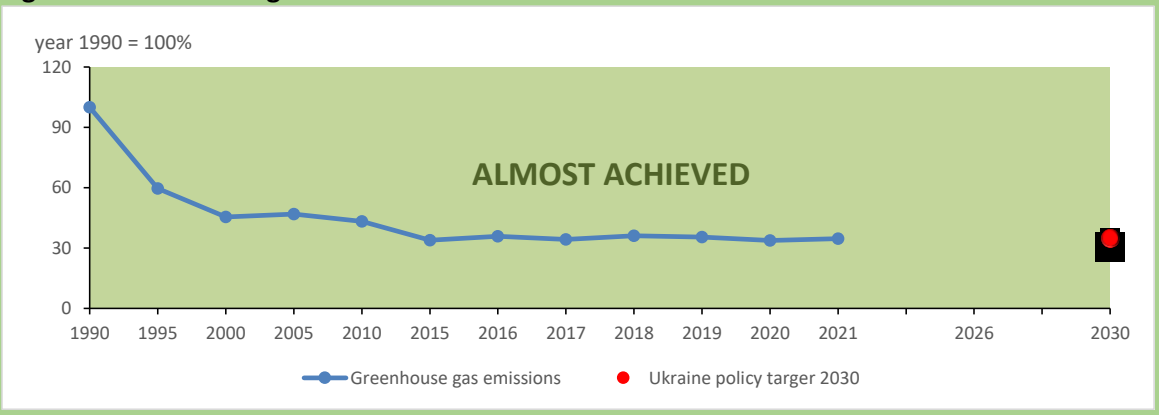
References:

- Ukraine GHG emission inventory reported under the UNFCCC and the Kyoto Protocol https://unfccc.int/documents/628276
- Ukraine CRF tables to UNFCCC https://unfccc.int/documents/628275
- National Center for Accounting of Greenhouse Gas Emissions https://nci.org.ua/inventory-of-greenhouse-gases/ Звіти з інвентаризації парникових газів – Національний центр обліку викидів парникових газів (nci.org.ua)

Indicator 4: Greenhouse gas emissions *[max 1200 characters with spaces]*

The total greenhouse gas (GHG) emissions excluding land use, land use change and forestry (LULUCF) in Ukraine declined by 615.5 million tonnes of carbon dioxide equivalent (CO2e) between 1990 and 2021. This represents a reduction of 65.3 % in the past 31 years, while national GDP at PPP at constant prices of 2017 in International dollars also decreased over the same period by 37%. The reduction in net GHG emissions has primarily taken place by 55% within the first decade (1990-2000) alongside a gradual shifts in energy production methods, notably a significant decline in coal usage. In 1990-1993 GHG emissions were gradually and rapidly reducing, which is due to the in-ertia of the collapse of the Ukrainian SSR economy and of the Soviet Union as a whole. In 1994-2000, there were followed a slowdown of annual reductions of GHG emissions till 2000, inclusive. This period is characterized by a sharp reduction in production capacity and idle periods for enterprises, as well as gradual "aging" of the industrial capital and the national infrastructure.

Figure 1. Greenhouse gas emissions in Ukraine



The projected reductions in GHG emissions by 2030 (with existing policies and measures), as reported by Ukraine, are consistent with a 65% reduction compared with 1990 (excluding LULUCF).

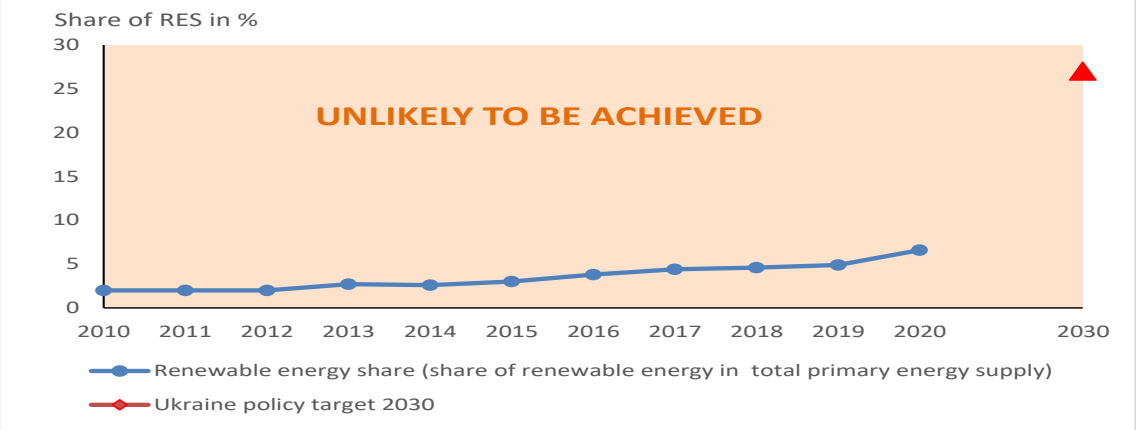
References:

- Ukraine GHG emi[illegible]n inven[illegible]y reported [illegible]der the UNFCCC and the Kyoto Protocol https://unfccc.int/documents/628276
- U[illegible]e CR[illegible]es to U[illegible]CC https://unfccc.int/documents/628275
- N[illegible]nal Center for [illegible]ounting [illegible] Greenhouse Gas Emissions https://nci.org.ua/inventory-of-greenhouse-gases/
- Order of the Cabinet Ministers of Ukraine dated June 25, 2024 No. 587-p ''On the approval of the National Energy and Climate Plan for the period until 2030'' https://www.kmu.gov.ua/news/ukraina-zatverdyla-natsionalnyi-plan-z-enerhetyky-ta-klimatu-v-den-pochatku-peremovyn-pro-vstup-do-ies

Indicator 5: Renewable energy sources *[max 1200 characters with spaces]*

In 2020 energy consumed in Ukraine generated from renewable sources (RES) got value of historical high 5,7 million tonnes oil equivalent (Mtoe). The share of Ukraine's energy supply from renewable sources increased from 2.0% in 2010 to 6.6% in 2020. In absolute values, renewable consumption is grew by 3.0 million tonnes oil equivalent (Mtoe) (+ 118%) from 2010. This increase compared to 2010, was largely driven by strong growth in biofuels and wastes power, wind and solar energy.

Figure 1. Renewable energy sources in Ukraine



Among renewable energy sources, the largest by far is biofuels and wastes, which could have implications in terms of carbon sinks and biodiversity. Solid biomass is widely used in electricity generation, industry and residential heating. Combined, it represented 75% of the total renewable energy supply in Ukraine in 2020. It is followed by wind and solar energy (14%), hydropower (11%). Non-renewables, on the contrary, saw a reduction (-38%) compared to 2010 linked to high gas prices and nuclear shutdowns.

The highest penetration of renewables in 2020 occured in the power sector, with a representation of 61.6% of all electricity generated in the Ukraine from RES. It was followed by the heating and cooling sector (residential) with a RES share of 33.3%. The RES share in transport was 0.9%.

The Ukrainian Energy and Climate Plan for the period until 2030 sets out a target of share of RES at least 27%. To stay on track towards its RES targets, Ukraine needs to safeguard further RES deployment and to increase the pace of RES uptake in all sectors of economy activites.

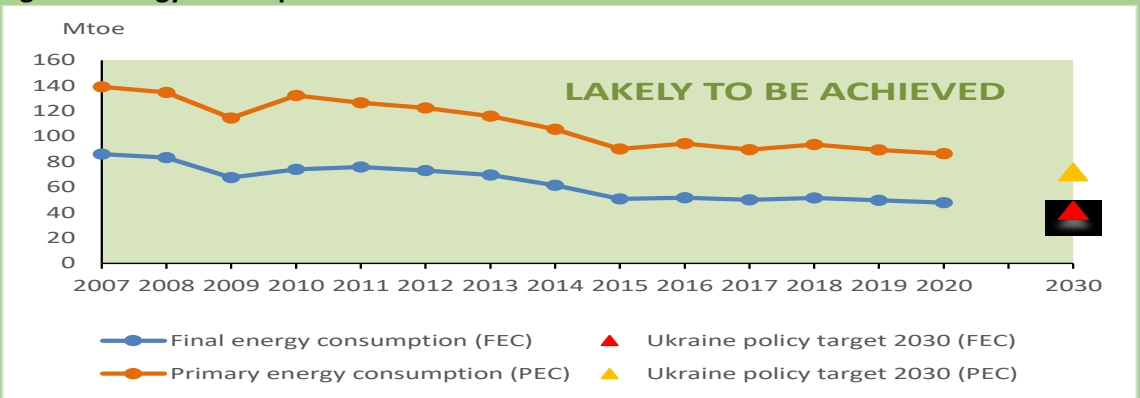
References

- SSSU's statistical information " Energy consumption from renewable sources for 2007 - 2021", https://www.ukrstat.gov.ua/operativ/operativ2020/energ/z_post_pe/zp_pen_ue.xls
- SSSU's Statistical information "ENERGY BALANCE OF UKRAINE 2020, https://www.ukrstat.gov.ua/operativ/operativ2012/energ/en_bal/arh_2012.htm
- Order of the Cabinet of Ministers of Ukraine dated June 25, 2024 No. 587-p ''On the approval of the National Energy and Climate Plan for the period until 2030'' https://www.kmu.gov.ua/news/ukraina-zatverdyla-natsionalnyi-plan-z-enerhetyky-ta-klimatu-v-den-pochatku-peremovyn-pro-vstup-do-ies

Indicator 6: Energy consumption *[max 1200 characters with spaces]*

Ukraine have agreed to progress towards the energy efficiency and renewable energy headline targets for 2030 and 2050 that were included in the Energy Strategy of Ukraine for the period up to 2050. Overall, Ukraine is reducing its energy consumption, since 2007.

Figure 1. Energy consumption in Ukraine



Primary energy consumption (PEC) in Ukraine has been falling since 2007. In 2020, primary energy consumption in Ukraine (84 million tonnes of oil equivalent, Mtoe) was 3.4 % less than in 2019, 18.3% less than in 2014 and about 38% less than it was in 2007. Overall, the reducing of primary energy consumption in Ukraine was as a result of decreases in final energy consumption, changes in the fuel mix used to produce electricity and heat (higher penetration of natural gas rand enewables).

In 2020, final energy consumed by end-users (FEC) (48 Mtoe) was on 3.8 % less in 2020 than in 2019, 22.3% less than in 2014 and about 44 % less than it was in 2007. The reductions can be largely attributed to high-energy prices, especially for gas. The biggest contributors to the decrease in final energy consumption were the industrial and household sectors. Together these are responsible for approximately hulf of the decrease since 2007.

The National Energy and Climate Plan for the period until 2030 sets out a targets of primary energy consumption at least 72,2 Mtoe and final energy consumption at least 42,2 Mtoe.

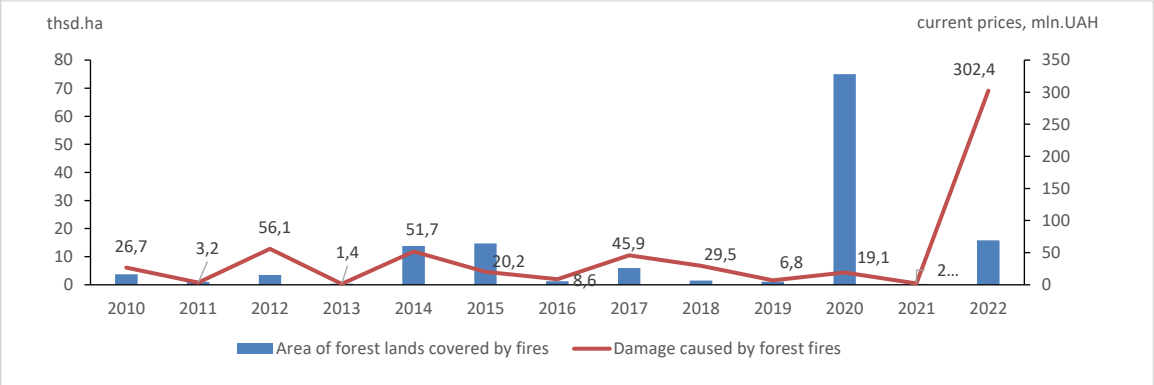
References:

- SSSU's statistical information "Primary energy supply for 2007 - 2021", https://www.ukrstat.gov.ua/operativ/menu/menu_e/energ.htm
- SSSU's Statistical information "Final energy consumption for 2007-2021'', https://www.ukrstat.gov.ua/operativ/menu/menu_e/energ.htm
- Order of the Cabinet Ministers of Ukraine dated April 25, 2023 No. 373-p ''On the approval of the Energy Strategy of Ukraine for the period up to 2050''
- Order of the Cabinet Ministers of Ukraine dated December 29, 2021 № 1803-p ''On the National Energy Efficiency Action Plan for the period up to 2030''
- Order of the Cabinet Ministers of Ukraine dated June 25, 2024 No. 587-p ''On the approval of the National Energy and Climate Plan for the period until 2030'' https://www.kmu.gov.ua/news/ukraina-zatverdyla-natsionalnyi-plan-z-enerhetyky-ta-klimatu-v-den-pochatku-peremovyn-pro-vstup-do-ies

Indicator 7: Climate-related economic losses *[max 1200 characters with spaces]*

A changing climate is impacting numerous economic sectors and human activities, including agriculture, forestry, fisheries, water management, coastal and flood protection, energy, transport, tourism, construction, and human health and well-being. In a warmer climate, more severe forest fire weather and an expansion of fire-prone areas are expected across Ukraine. In 2022, direct economic losses from forest fires in Ukraine reached a historical high of 302 million UAH.

Figure 1. Economic losses caused by forest fires in Ukraine



Data on the regional effects of global climate change in Ukraine are limited to the year 2013. Since 2014, following the occupation and attempted annexation of Crimea, data on hydrometeorological parameters from observation stations in occupied territories have not been transmitted to the Ukrainian Hydrometeorological Center. Consequently, obtaining reliable meteorological data for the entire territory of Ukraine is not feasible.

References:

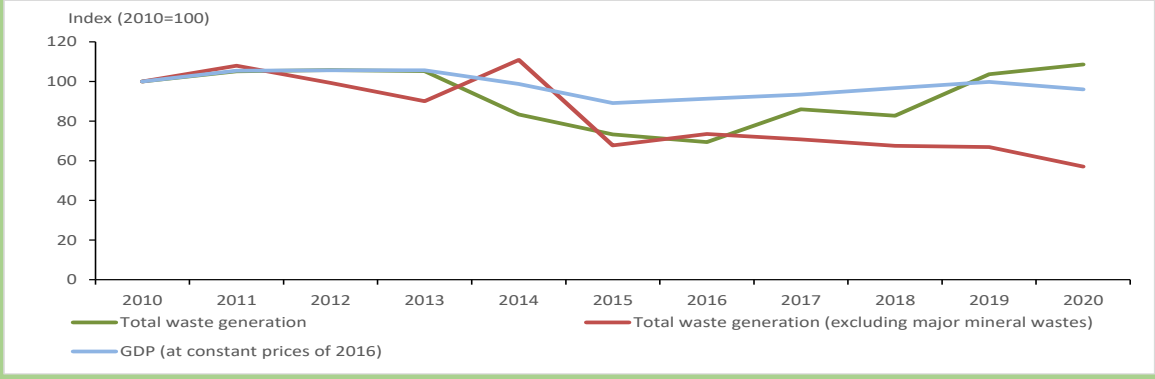
- State Statistics Service of Ukraine. Statistical Yearbook "Environment of Ukraine", 2016, 2017, 2019, 2020, 2021.
  https://www.ukrstat.gov.ua/druk/publicat/Arhiv_u/07/Arch_dov_zb.htm
  https://www.ukrstat.gov.ua/druk/publicat/kat_u/publnav_ser_u.htm

Indicator 8: Waste generation *[max 1200 characters with spaces]*

In Ukraine, 462.4 million tonnes of waste were generated in 2020. Among the waste generated in Ukraine in 2020, 43.6 million tonnes (9.4 % of the total) were waste (excluding major mineral wastes). The main driver for the trend in waste volumes is considered to be economic growth, with gross domestic product (GDP) the most common parameter used to track the economy's size. The amount of total waste (excluding major mineral wastes) has decreased in Ukraine since 2010 alongside GDP (Figure 1). The observed increase in 2014 is mainly driven by an error in determining the category of waste by material when respondents submitted reports to the statistical service.

The trend for the total waste generation in the country shows a mixed picture. In 2014, total waste generation was 17% less than in 2010, and in 2020 it was 9% higher than in 2010.

Figure 1. Trends in waste generation, economic development in Ukraine



Between 2010 and 2020, total waste generation per capita increased by 19.3% (or from 9.3 to 11.1 tonnes/capita) in the Ukraine. For total waste generation, the observed increase is driven by major mineral wastes, such as hard rocks, concrete, soils and others feature in large quantities in relation to other waste types. They also usually represent an environmental issue of relatively less concern because of their inert nature. If we exclude them from the totals, the remaining and more environmentally significant waste streams decreased by 37.3% (or from 1.6 to 1.0 tonnes/capita).

Hazardous waste may pose an elevated risk to human health and to the environment if not managed and disposed of safely. Among the waste generated in Ukraine in 2020, 0.5 million tonnes (0.1 % of the total) were classified as hazardous waste (I-III grades of hazard wastes). Compared with 2010, 61.7 % less hazardous waste was generated in 2020 in Ukraine.

References:

- SSSU's Statistical Yearbook "Environment of Ukraine", 2015, 2016, 2020. https://www.ukrstat.gov.ua/druk/publicat/Arhiv_u/07/Arch_dov_zb.htm
- SSSU's Statistical Yearbook "National Accounts of Ukraine for 2021'' https://www.ukrstat.gov.ua/druk/publicat/Arhiv_u/03/Arch_nr.htm

Waste EWC-Stat categories are used to estimate the indicators of total waste generation excluding major mineral waste respectively, as included in the Eurostat manual on waste statistics. And population (average population) are used to estimate the indicators of total waste generation per capita and total waste generation (excluding major mineral wastes) per capita.

Indicator 9: Circular material use rate *[max 1200 characters with spaces]*

In Ukraine indicator 'Circular material use rate' not developed. Data sets (or indicators) need for its calculation not agregated and published.

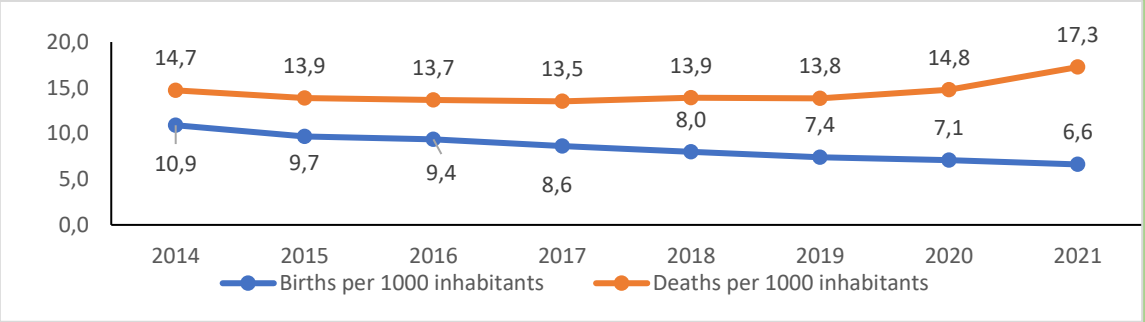
References:

- XX
- XX

Indicator 10: Health impacts of air pollution (PM2.5) *[max 1200 characters with spaces]*

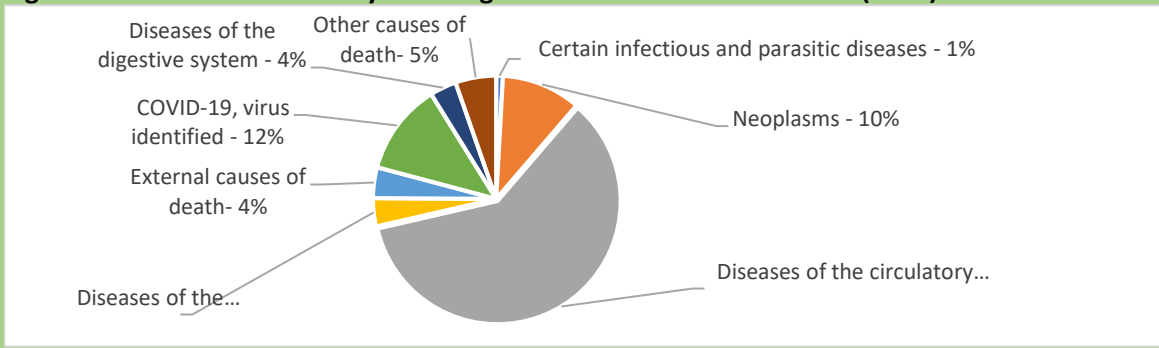
Since 2014, the total number of births per 1000 inhabitants in Ukraine has significantly decreased, while the standardized mortality rate has been increasing.

Figure 1. Live bith and deaths per 1000 inhabitants in Ukraine



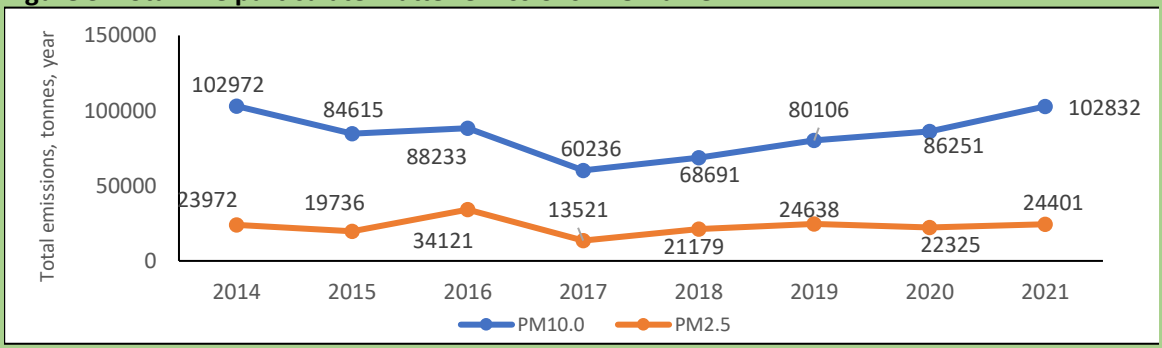
The most common group of causes of death are diseases of the circulatory system, COVID-19, and also neoplasms. Since 2014, the number deaths from diseases of the respiratory system per 100000 inhabitents gradually increases (from 34 in 2014 to 64 in 2021).

Figure 2. Structure of mortality accoding to causes of death in Ukraine (2021)



Air pollution is a major cause of mortality and disease in Ukraine and is the largest environmental health risk. The air pollutant deemed to cause the most severe impacts on human health is fine particulate matter. As shown in Figure 3, between 2014 and 2021, emissions of fine particulate pollutants have changed in Ukraine, leading to increased exposure of the population to these air pollutants.

Figure 3. Total fine particulate matter emissions in Ukraine



References:

- State Statistics Service of Ukraine. Statistical Yearbook "Natural movement of the population of Ukraine", 2021. (It is available in Ukrainian) https://www.ukrstat.gov.ua/druk/publicat/kat_u/publnasel_u.htm
- State Statistics Service of Ukraine. Demographic Yearbook "Population of Ukraine" 2014, 2021. https://www.ukrstat.gov.ua/druk/publicat/kat_u/publnasel_u.htm
- State Statistics Service of Ukraine. Statistical information ''Air emissions accounts'' 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021

https://www.ukrstat.gov.ua/operativ/operativ2018/ns/er_oap/arh_er_oap_e.htm

Overall assessment of trends in environment and climate *[max 1800 characters with spaces]*

FIRST DRAFT:

Ukraine faces under the current war situation a complex sustainability landscape with remarkable progress in some areas but substantial challenges in others. Organic farming remains still underdeveloped, covering just 0.64% of agricultural land in 2022, despite its biodiversity and soil health benefits. Meeting the 2030 target of 3% will require enhanced policy and market support amid volatile demand. Protected areas, currently covering 7.5% of Ukrainian land, highlight progress in conservation, yet the rate of expansion and management effectiveness remain insufficient to achieve the 2030 target of 15%.

Energy transitions demonstrate mixed results. Renewable energy's share grew from 2% in 2010 to 6.6% in 2020, with biofuels and solar power driving growth. However, heavy reliance on biomass and uneven uptake across sectors impede alignment with the 27% renewable energy target by 2030. Energy efficiency has improved, with primary and final energy consumption decreasing significantly since 2007, but reaching 2030 benchmarks remains uncertain.

Greenhouse gas emissions have dropped by 65.3% since 1990, driven by industrial declines and shifts in energy production. However, the land use sector, previously a carbon sink, has become a source of emissions due to forest degradation and increased land conversion, underscoring climate vulnerabilities. Accelerating afforestation and enhancing forest resilience are critical for reversing this trend.

Waste management reveals a mixed picture. Hazardous waste generation fell by 61.7% between 2010 and 2020, yet total waste per capita increased, driven by major mineral wastes. While less hazardous, these wastes highlight inefficiencies in resource use. Air pollution and mortality from respiratory diseases, exacerbated by fine particulate matter, remain pressing public health issues.

Climate change intensifies risks such as forest fires and hydrological uncertainty, particularly with limited data from occupied territories since 2014. Strengthening adaptive capacities across agriculture, forestry, and water management, while addressing urban air quality and regional disparities, presents both a challenge and an opportunity for Ukraine's sustainability transition.

References:

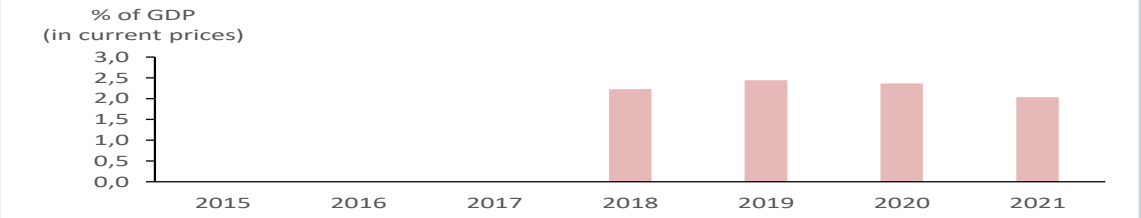
- XX
- XX

PART 2: ASSESSMENT OF SOCIO-ECONOMIC CHANGE

Overall assessment of socio-economic change *[max 2400 characters with spaces]*

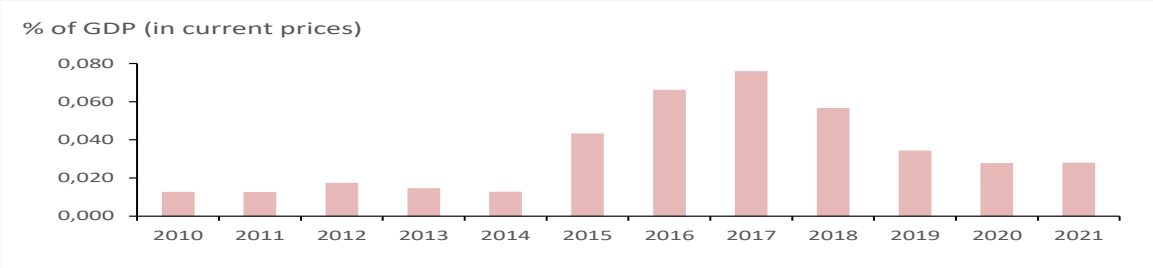
Environmental protection expenditure (EPE) mainly includes expenditure related to the abatement of air, water, soil and noise pollution, the protection of biodiversity, the management of wastewater and waste, and environmental research and development and includes both operating expenditure and investments. Since 2018, in Ukraine the share of overall EPE in gross domestic product (GDP) has remained relatively stable, at around 2%.

Figure 1: Environmental protection expenditure in Ukraine



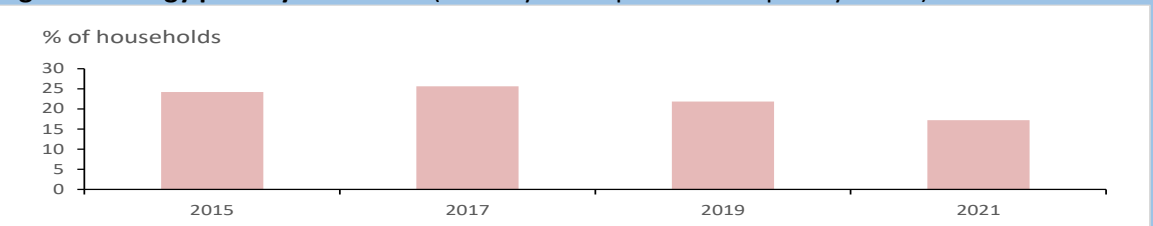
Fossil fuels are non-renewable sources of energy, and their production and use contribute significantly to climate change and pollution. In line with international commitments calls for an immediate phase out of subsidies for fossil fuels (such as coal, gas and oil). The amount of cash subsidies charged to households to reimburse expenses for the purchase of solid fuel and liquefied gas in Ukraine in 2021 amounted to 1525 million UAH. The extent to which fossil fuel subsidies contribute to national economies varies considerably across years (2012-2021). Cash solid fuel and liquefied gas subsidies represent the highest shares of gross domestic product (GDP) in 2017 year (0,076%) and the lowest share in 2011 less than 0.0126% of GDP).

Figure 2. Solid fuel and liquefied gas subsidies to households in Ukraine



Ukraine has a high number of people who are part of households that do not have enough money to maintain a sufficiently warm temperature in their homes (for the purchase of fuel, heaters, etc.) during the heating season.

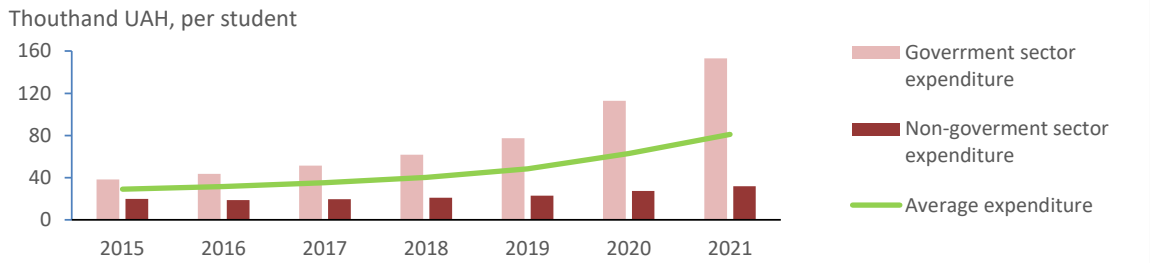
Figure 3. Energy poverty in Ukraine (inability to keep home adequately warm)



However, this situation is changing. While in 2015, the rate of energy poverty in Ukraine was 24.2%, by 2021, it had decreased to 17.2%.

In Ukraine, there were 1.05 million tertiary education students in 2021, of which 66% were studying for bachelor's degrees. In 2021, 25% of tertiary education students in Ukraine were studying management and administration and education/pedagogy. Since 2015, the expenditure on education per student in tertiary education in Ukraine has significantly increased, but expenditure from the government sector has been increasing more quickly than from the non-government sector.

Figure 4. Public expenditure on tertiary education in Ukraine



References:

- SSSU's Statistical Publication " Household self assessment of availability of selected goods and services", 2021, 2019, 2017
  https://www.ukrstat.gov.ua/druk/publicat/kat_u/publdomogosp_u.htm
- SSSU's Statistical Information ''Environmental protection expenditure account'', 2018, 2019, 2020, 2021
  https://www.ukrstat.gov.ua/operativ/operativ2020/ns/er_vonps/arh_er_vonps_e.htm
- SSSU's Statistical Information ''Satellite account of education in Ukraine'', 2017, 2018, 2019, 2020, 2021
  https://www.ukrstat.gov.ua/operativ/operativ2020/osv/sat_rah_osv/arh_sat_rah_u.htm
- SSSU's Statistical Bulletin "National accounts of education in Ukraine"
  (It is available in Ukrainian), 2016, 2015
  https://www.ukrstat.gov.ua/druk/publicat/kat_u/publosvita_u.htm
- SSSU's Statistical Information "Higher education in Ukraine in 2019",
  (It is available in Ukrainian), Statistical Publication ''Higher education in Ukraine''
  (It is available in Ukrainian), 2017
  https://www.ukrstat.gov.ua/operativ/operativ2021/osv/vush_osv/arh_vuz_20_u.html
  https://www.ukrstat.gov.ua/druk/publicat/Arhiv_u/15/Arch_vo_U_bl.htm
- Information on providing housing subsidies of the Ministry of Social Policy of Ukraine, 2021, 2020, https://www.msp.gov.ua/news/18429.html
- SSSU's Statistical Report "On the socio-economic situation of Ukraine'' in January 2011, 2012, 2013, 2014, 2015, 2016, 2017
  https://www.ukrstat.gov.ua/operativ/operativ2011/mp/dopovidx/arh_dop2011.html
- SSSU's Statistical Report "On the socio-economic situation of Ukraine'' in 2018, 2019
  https://www.ukrstat.gov.ua/operativ/operativ2014/mp/dopovidx/arh_dop2018.html
- SSSU's Statistical publication ''National accounts of Ukraine'', 2021
  https://www.ukrstat.gov.ua/druk/publicat/Arhiv_u/03/Arch_nr.htm

PART 3: ASSESSMENT OF SYSTEMIC BARRIERS FOR FOOD, ENERGY, MOBILITY

Assessment of system change – the food system *[max 3000 characters with spaces]*

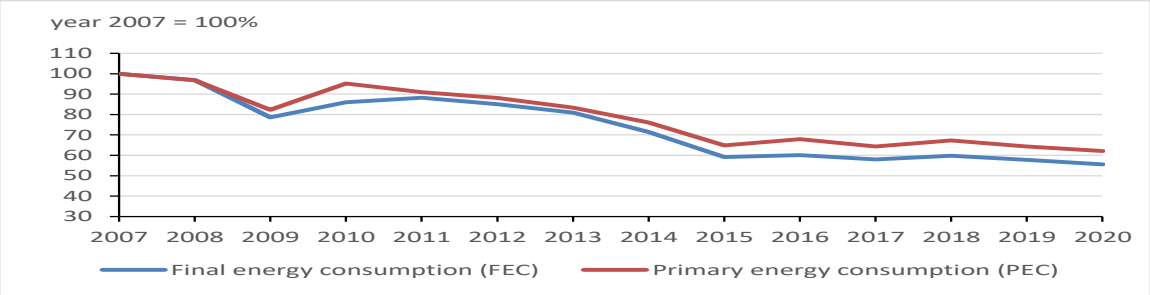
References:

- XX
- XX

Assessment of system change – the energy system *[max 3000 characters with spaces]*

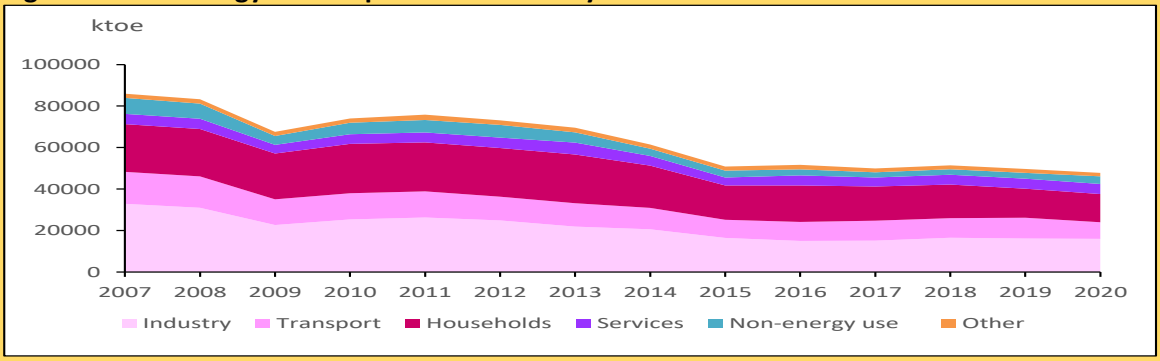
The energy system is characterised by significant diversity across Ukraine. Overall, Ukraine is a net importer of energy carriers. In absolute terms, Ukraine is the largest energy importer in the EU, with imports meeting 35 % of its energy needs in 2020. More specifically, 100 % of all oil products, 48 % of all coal and peat, 43% of all grude oil and 31 % of all natural gas consumed in Ukraine were imported. Although imported energy is essential for the Ukraine's economy to function, significant amounts of money leave the Ukraine economy in exchange for energy resources. The Ukraine's dependence on imports has decreased since 2012, against the backdrop of increased from domestic fuel production. Overall, Ukraine is reducing its energy consumption.

Figure 1. Trends of energy consumption in Ukraine



In 2020, oil (including oil products), natural gas, coal and peat together supplied 70 % of Ukraine's primary energy needs. Shares of nuclear energy and renewables (23% and 7%) met the remaining consumption. A similar pattern is observed when the energy footprint of final consumption in Ukraine is analysed, a metric that combines both direct and indirect use of energy to satisfy final demand.

Figure 2. Final energy consumption in Ukraine by sector



The industry sector demanded most energy, equalling one third of the total, followed by households and transport, accounting together 45%. The final energy consumed by service sector was only on 2 % less in 2020 than in 2007 and represented 10 % of the final energy use in 2020. Non-energy uses of energy resources (fuels used as raw materials in various sectors) represented only 7.7% of the final energy use in 2020 in Ukraine.

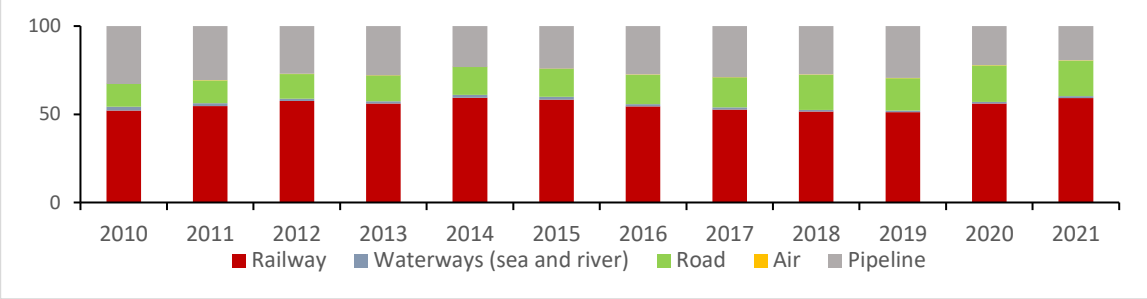
References:

- SSSU's Statistical information "Total primary energy supply for 2007 - 2021", https://www.ukrstat.gov.ua/operativ/menu/menu_e/energ.htm
- SSSU's Statistical information "Final energy consumption for 2007-2021'', https://www.ukrstat.gov.ua/operativ/menu/menu_e/energ.htm

Assessment of system change – the mobility system *[max 3000 characters with spaces]*

Transport is an important sector of the Ukraniane economy and plays a vital role in today's mobile society.

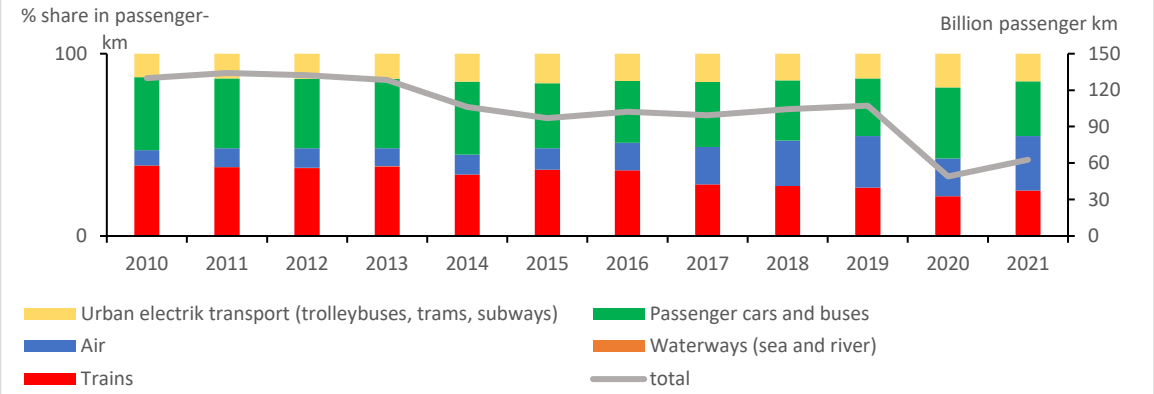
Figure 1. Modal split of freight transport in Ukraine (2010-2021) (% share in tonne-kilometres)



Total freight transport activity in Ukraine decreased by 27% between 2010 and 2021 (or from 418.7 to 304.7 billion tonne-kilometres). Rail transport continues to have the largest share of Ukraine transport performance among the total transport modes. In 2021, rail transport accounted 59.2 % of the total freight transport (based on tonne-kilometres performed). This share increased by 7.1 percentage points (pp) compared with the 2010 year and road transport accounted for 20.3 % of the Ukraine total, higher than the 2010 (+7.4 pp). Between 2010 and 2021, share of pipeline and waterways transport performance among the total transport modes decreased by 13.3% pp and 1.2 pp, while the share of airways was 0.1 % of the total transport performance.

Promoting sustainable transport modes such as public transport can reduce greenhouse gas emissions and other environmental pressures such as air pollution and noise. The EU Sustainable and Smart Mobility Strategy calls for decisive action to shift towards more public passenger transport like buses and trains.

Figure 2. Modal split of passenger transport in Ukraine (2010-2021)



Total passenger transport activity in Ukraine decreased by 52% between 2010 and 2021 (or from 130 to 62.7 billion passenger-kilometres), indicating an decrease in the use of passenger cars and buses and trains in absolute terms. Passenger cars and buses in Ukraine accounted was baccounted for 30 % of all passenger transport in 2021. This share decreased by 10 percentage points (pp) compared with 2010. Trolley buses, trams, subways accounted 15.2 % that on 2.3 % percentage points (pp) more compared with 2010.

Passenger trains (25 %) and air transport of passengers (29,8 %) both accounting more one hulf of all traffic (measured in passenger-kilometres) in 2021. The share of passenger trains decreased by 13.6 percentage points (pp) and air transport of passengers increased by 21.4 percentage points (pp) compared with 2010.

References:

- SSSU's Statistical Yearbook "Transport of Ukraine", 2022
  https://www.ukrstat.gov.ua/druk/publicat/kat_u/publ8_u.htm
  https://www.ukrstat.gov.ua/druk/publicat/Arhiv_u/08/Arch_Trans_zb.htm
- SSSU's Statistical Yearbook ''Transport and communications of Ukraine'', 2016
  https://www.ukrstat.gov.ua/druk/publicat/Arhiv_u/08/Arch_tr_zb.htm

Overall assessment of trends in environment and climate *[max 1800 characters with spaces]*

Ukraine faces under the current war situation a complex sustainability landscape with remarkable progress in some areas but substantial challenges in others. Organic farming remains still underdeveloped, covering just 0.64% of agricultural land in 2022, despite its biodiversity and soil health benefits. Meeting the 2030 target of 3% will require enhanced policy and market support amid volatile demand. Protected areas, currently covering 7.5% of Ukrainian land, highlight progress in conservation, yet the rate of expansion and management effectiveness remain insufficient to achieve the 2030 target of 15%.

Energy transitions demonstrate mixed results. Renewable energy's share grew from 2% in 2010 to 6.6% in 2020, with biofuels and solar power driving growth. However, heavy reliance on biomass and uneven uptake across sectors impede alignment with the 27% renewable energy target by 2030. Energy efficiency has improved, with primary and final energy consumption decreasing significantly since 2007, but reaching 2030 benchmarks remains uncertain.

Greenhouse gas emissions have dropped by 65.3% since 1990, driven by industrial declines and shifts in energy production. However, the land use sector, previously a carbon sink, has become a source of emissions due to forest degradation and increased land conversion, underscoring climate vulnerabilities. Accelerating afforestation and enhancing forest resilience are critical for reversing this trend.

Waste management reveals a mixed picture. Hazardous waste generation fell by 61.7% between 2010 and 2020, yet total waste per capita increased, driven by major mineral wastes. While less hazardous, these wastes highlight inefficiencies in resource use. Air pollution and mortality from respiratory diseases, exacerbated by fine particulate matter, remain pressing public health issues.

Climate change intensifies risks such as forest fires and hydrological uncertainty, particularly with limited data from occupied territories since 2014. Strengthening adaptive capacities across agriculture, forestry, and water management, while addressing urban air quality and regional disparities, presents both a challenge and an opportunity for Ukraine's sustainability transition.