



Position paper

Recovery actions for the post-war reconstruction of the agri-food sector and land use in urban-rural areas of Ukraine

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Background

In this position paper we outline the first prospects about the needs for the post-war reconstruction of the Ukrainian agricultural sector. The paper reflects on the pre- and post-war trends and outlines eight recovery packages to guide the formulation of recovery actions in key areas of concern (Figure 1). We propose that for each recovery package a set of future key measures will be elaborated in consultation with experts in specific issues. Furthermore, we suggest formulating clear objectives for Ukraine and identifying corresponding actions for the Dutch government. WUR cooperates with Ukraine since 2001 in agri-food and life sciences research & education (Appendix 2).

Pre and post-war perspectives

Prior to the invasion of Russia on 24th February, Ukraine was on the way of pursuing its ambition to become a strong, sustainable and responsible international provider of food (speech Zelensky during food systems summit in September 2021). The moral responsibility and economic interests of the Netherlands as the biggest EU importer of Ukrainian produce implied and still implies a significant role in supporting and cooperating with Ukraine. Such support includes transfer of knowledge and best practices and capacity building in fostering the transition of the Ukraine's agri-food sector towards modern and sustainable food systems. With the support of Dutch academic institutions (including WUR), government and agri-business, first steps have been made in close bilateral collaborations between Dutch and Ukrainian partners, prior to the war. This includes introducing and boosting a transition on all levels towards long-term sustainable food production and consumption, innovations and initiated dialogue between government, knowledge institutions, farmers and consumers.

Ukraine is an important agricultural country in Europe and after the start of the war this fact became even more evident on the global food security arena (worlds' granary). Depending on its post-war territorial integrity and land reclamation, Ukraine will need to continue the started transitions in the post-war situation with long-term recovery from the impacts, losses and socio-economic and environmental consequences of the war. The EU and democratic partners will need to invest in this recovery by passing on the most up to date knowledge and practices which can be applied to restart and innovate the agricultural sector and remediate land and natural resources. Dutch policy makers, diplomats, academics and professionals play and will play a significant role in this process and can build up on the good relations with Ukraine in the agri-food sector, providing pioneering knowledge to support science-policy interface and innovations.

Expectedly, the assessments of the war's consequences will identify the first needs for recovery actions in terms of lost infrastructure, environmental impacts (water, soil, sewerage etc.), agricultural services and resources for the primary production (loss of crops, land use, local communities' food provision needs etc.), domestic food distribution and the links to international food value chains. The recovery process will need to be in a smart and resilient way, in line with the SDGs and the sustainable food system approach (SFA, WUR).

The revival of the Ukraine's agricultural sector needs to be in a smart and resilient way, in line with the SDGs and based on the modern principles for a transition towards sustainable food systems.

The modernization of the agricultural sector will need to have a special accent on aspects of efficiency, digitalization, quality of products, new market perspectives and resilience. Sustainable production, including animal welfare, plant health and decarbonization will as well be more important in the post-war situation, with view on the application process of Ukraine for accession to the EU. Stronger relations need to be established regionally - between Ukraine and EU's Eastern European member states as well as Ukraine and Western Europe.

In 2019 Ukraine exported to the EU agri-food products for about 7 billion Euros, which was 33% higher than in 2018. The Ukrainian and Dutch trade relations in the agri-food sector have been strong. Ukraine has more than 30 times the arable land and more than 25 times the wheat production of the Netherlands. Ukraine exported prior to the war more agri-food products to the Netherlands than vice versa (e.g., plant oils, maize, oleaginous seeds). Dutch exports included mostly plants/flowers, seed potatoes (64%), cacao, milk and meat products. Next to that there was a strong cooperation in knowledge and technologies transfer. It is expected that in the post-war period there will be a growing interest in this trade and exchange between the Netherlands and Ukraine of technologies and knowledge in the agri-food sector. This cooperation will require a more integrated approach with rebuilding of infrastructure, logistics and recovery of the food value chains and local communities in Ukraine, considering the new situation of the post-war territorial integrity of the country. Next to that, the issues of climate change and soil quality will remain important for ensuring a sustainable recovery and development of food production in the long term. This will have an impact on the implementation of the EU Green Deal and Farm to Fork strategies.

The relation of Ukraine with the EU member states and partners such as the Netherlands will be crucial in introducing incentives for responsible import/export and agri-food production and for conducting a dialogue with Ukrainian agri-food businesses and the government.

Moreover, in the post-war period the in 2020 started land restitution reform will have to be continued with new spatial developments for rural and urban areas and land ownership regulations, including cadaster and territorial strategies for sustainable land use in Ukraine. The Dutch cadaster authorities have been supporting Ukraine in this process prior to the war. The available land resources will be the starting point for the recovery of Ukraine's food system and will have an impact on the European and international agri-economy and global food value chains (food production, processing and trade).





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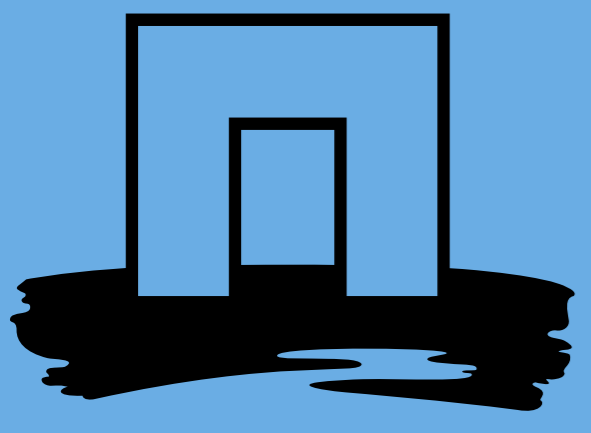
Key policy actions for the Dutch-Ukraine/EU cooperation

- Continue strong bilateral cooperation (trade, resilience and knowledge/technologies in agri-food domains and environmental sustainability) based on the post-war territorial integrity of Ukraine.
- Support, bilaterally and internationally, implementing the SDGs by introducing innovative approaches for modernization of the agri-food sector: road map for transition towards sustainable food systems.
- Support the integration of Ukraine into the EU, by intensifying the relations between the Dutch and Ukrainian knowledge and governmental organizations and assist its EU accession process.
- Support active participation of Ukraine in EU R&I programmes (Horizon Europe) to ensure knowledge-based economic recovery - fostering European research area and the Farm to Fork strategy.
- Support Ukraine's integration in the international arena with EU member states and global international organizations in developing stronger civil society, fighting corruption, improving the livelihood of the local population and creating incentives for jobs and education.
- Foster local innovations and a favorable business environment for agribusiness and SMEs.
- Develop a comprehensive recovery plan with measures (Figure 1) for gradual reconstruction of the agri-food sector and the environment with Dutch and international partners and knowledge.
- Support the exploration of reallocation strategies, for ensuring more self-sufficient and sustainable food-production and supply chains in Europe by regional smart specializations, utilizing resources potential of Eastern Europe and neighboring to Ukraine EU states.



Figure 1: Eight recovery packages for reconstruction of the agri-food sector and the likelihood of the rural-urban areas of Ukraine





Appendix 1

Eight recovery packages for the reconstruction of the agri-food sector and the likelihood of the rural-urban areas of Ukraine

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Recovery package 1: Agricultural policy and economy

General issues

- Governance and cooperation models for agri-food policies for Ukraine: national/international
- Effects for grain and vegetable oil markets and quality
- Implications of the war on agricultural activities and trade: EU food security and supply and global food trade (Africa and Middle East)
- Effect on Dutch & EU agricultural policy
- Resilience of the food system in Ukraine to environmental, policy and conflict shocks

Recovery package 2: Food security and farming systems

General issues

- Strategic approach of developing value chains with added value to commodities and livelihoods
- Functional agri-food systems
- Primary production, Availability of crops, genetic material, agricultural products
- Food consumption and production

Recovery package 3: Environmental impacts, climate and biodiversity

General issues

- Mapping environmental impacts on agricultural land and loss of natural resources
- Mapping of soil and water contamination and identification of remediation measures
- Developing of a recovery monitoring system for natural resources and biodiversity
- Elaborating new actions plans for climate-prove agriculture and rural-urban areas.

Recovery package 4: Remediation of Soil, Water and Irrigation

General issues

- Inventory of lost environmental infrastructure, soil contamination, and remediation
- Modelling of solutions to recover agriculture and protect the environment (water, soil)
- Monitoring of the agricultural production on rainfed and irrigated lands.
 - Post-war development and implementation of a modern satellite-based monitoring system for land use mapping and crop production;
 - Including crop yield modelling for yield mapping and forecasting based on the European wide implemented CGMS monitoring system
 - Quantification of the impact of war on agricultural production and irrigation performance by mapping agricultural land, irrigated area and yield in 2021/22
- Monitoring of fertilizer needs, phytosanitary measures, transport and alternative export
- A study of the impact of the yield loss for the rest of the world
- Development of Integrated land and water resources management plans (including sustainable agriculture, water- and land-management and rural development)

Recovery Package 5: Education & research capacity and infrastructure

General issues

- Capacity building programme for students' education
- Capacity building programmes for qualification and education of professionals and refugees' education
- Integration of Ukraine academic organizations in EU research and education programmes (Horizon Europe, Erasmus+) for science and education.
- Advice in research infrastructure, and mobility in European Research Area
- Support in connecting Science-policy interface for the recovery of Ukraine

Recovery Package 6: Support for Agri-businesses, SMEs and local communities

General issues

- Support to agribusiness to restart and recover
- Development of Innovation incentives in new modernized agri-business
- Developing new market incentives for potential agri-business

Recovery Package 7: Welfare of local communities and job creation

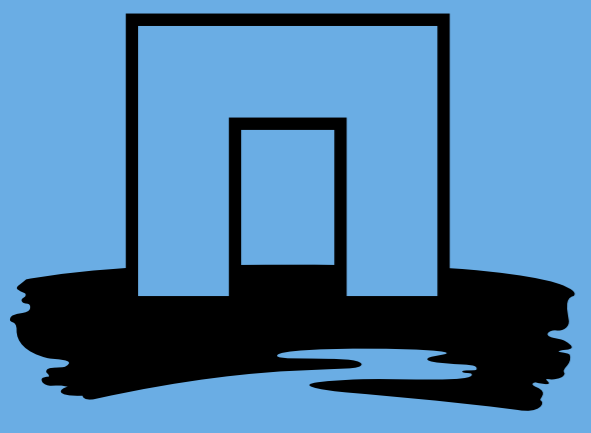
General issues

- Rural communities' recovery and revitalization of rural areas
- Job creation in agri-food sector activities
- Community participation and empowerment in local rural areas

Recovery Package 8: Urban areas – food, quality of life - green cities

General issues

- Assessing the impact on Urban areas and quality of life
- Developing plans for urban revitalization and green cities (climate-prove & sustainable)
- Spatial planning and governance of the urban-rural areas



Appendix 2

Key cooperation activities of WUR with Ukraine

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WUR cooperation in Ukraine

WUR cooperates with Ukraine since 2001-until present in different activities and in different intensity throughout the years. During the last years, the cooperation has been intensified with different academic partners in the field of research and in multiple research projects (EU and bilateral). More cooperation in students' education has been as well a wish for the future (appr. 7 student applications annually in WUR and several study visits of WUR students in Ukraine). Cooperation in research projects is in different topics of agricultural and rural development, including sustainable land use, water management and irrigation, food systems, agricultural economics, biobased industry and biodiversity etc.

WUR researchers and educators are in contact with Ukrainian academics and international partners about the consequences and challenges of the invasion of Russia in Ukraine and the expected implications of the war for the global food systems.

Main fields of knowledge exchange in 2020/2022

- Water-land - soil-food nexus interaction scenarios (based on national, regional and local needs) to support climate-resilience measures and smart agriculture/food production.
- Decarbonization of the agricultural sector and the food production/consumption with climate-resilience solutions (environment/economic/social).
- Implementation of the Sustainable Food Systems Approach in Ukraine - value chains development, resilient consumption and production, food waste and food loss.
- Economic resilience of individual farmers and SMEs, agricultural performance in novel socio-economic and climate change scenarios.
- Agricultural and food market and price analysis, agricultural policy analysis.
- Innovations in the Ukrainian research landscape by embedding socio-economic research evidence on climate-smart agriculture within Ukrainian policy frameworks and knowledge agenda
- Sustainable Animal Breeding Strategies – development of Pig Academy Ukraine and sustainable animal feed farming.
- Biobased products and technologies with FBR researchers and
- WUR students have worked with Ukrainian NGOs on development of land use scenarios in the region of Donbass/Donetsk.
- Lectures for the Ukrainian Agri-Business Association and a keynote of Prof. Dr. Louise Fresco at the Ukraine Innovation day, 2021.
- G2G bilateral projects on water management - twinning projects between Dutch and Ukrainian Municipalities and Water Boards.
- Ukrainian partners in Horizon 2020 projects and new applications in Horizon Europe, Erasmus+.
- Study visits of MBAs and professionals to WUR facilities
- Students' education and professional trainings (incl. for refugee's)
- Webinar on the effects of Russia's invasion of Ukraine for global food markets and agricultural policies.

WUR key partners

- Dutch Embassy in Kyiv, Agricultural Councilor
- National University of Life and Environmental Sciences of Ukraine in Kyiv (in 2006 MoU)
- Agri-Businesses - meat production
- Ukrainian Association of Agri - Businesses
- FAO - Ukraine
- Ukrainian Ministry of Agricultural Policy
- Ministry of Economic Development and Trade
- Ministry of Environment,
- Kyiv School of Economics - Center for Food and Land Use Research
- Institute of Bioenergy Crops and Sugar Beet-Ukraine
- Ukraine's Agriculture Academy of Sciences
- Ukrainian Business Association
- ICA-Association for European Life Science Universities - AgriMBA program in international agribusiness and commerce with the National University of Life and Environmental Sciences