

GREEN RESTORATION OF UKRAINE

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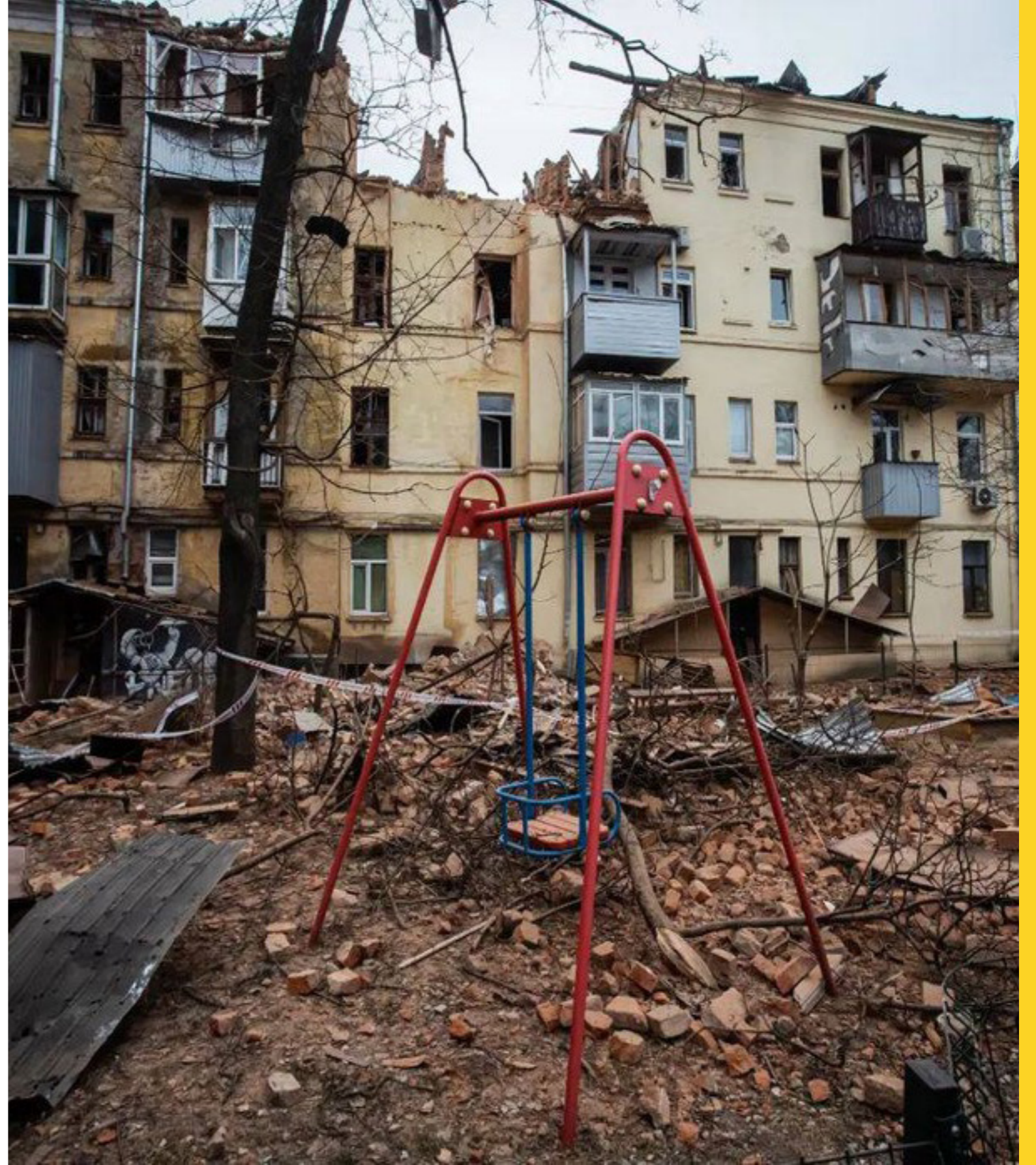
Painting by Maria Prymachenko (1909-1997)





PROBLEMS FACED BY UKRAINE

Building damaged by a russian S-300 missile in Kharkiv



INTENSIVE MIGRATION PROCESSES



8.1 million people

were displaced across Europe
(UNHCR, February 2023)



5.4 million people

were internally displaced within Ukraine
with protracted (more than 6 month)
displacement prevalent
(IOM, January 2023)



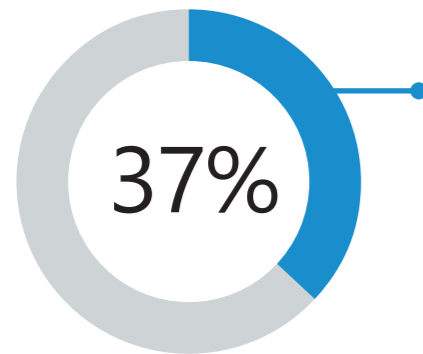
Crowds of refugees from Mariupol, Ukraine (March 24, 2022) Kharkiv

BUSINESS RELOCATION AND JOB LOSSES



more than 700 enterprises

were forced to move to the western regions, only according to official data (Ministry of Reintegration, December 2022)



of Ukrainians

lost their jobs during the war (Sociological Group "Rating", September 2022)



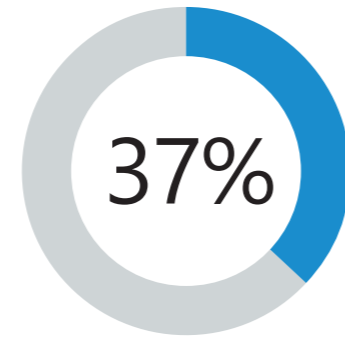
Destroyed Vetropack Gostomel Glass Factory, Kyiv region

LARGE-SCALE DESTRUCTION OF RESIDENTIAL, SOCIAL AND ECONOMIC INFRASTRUCTURE



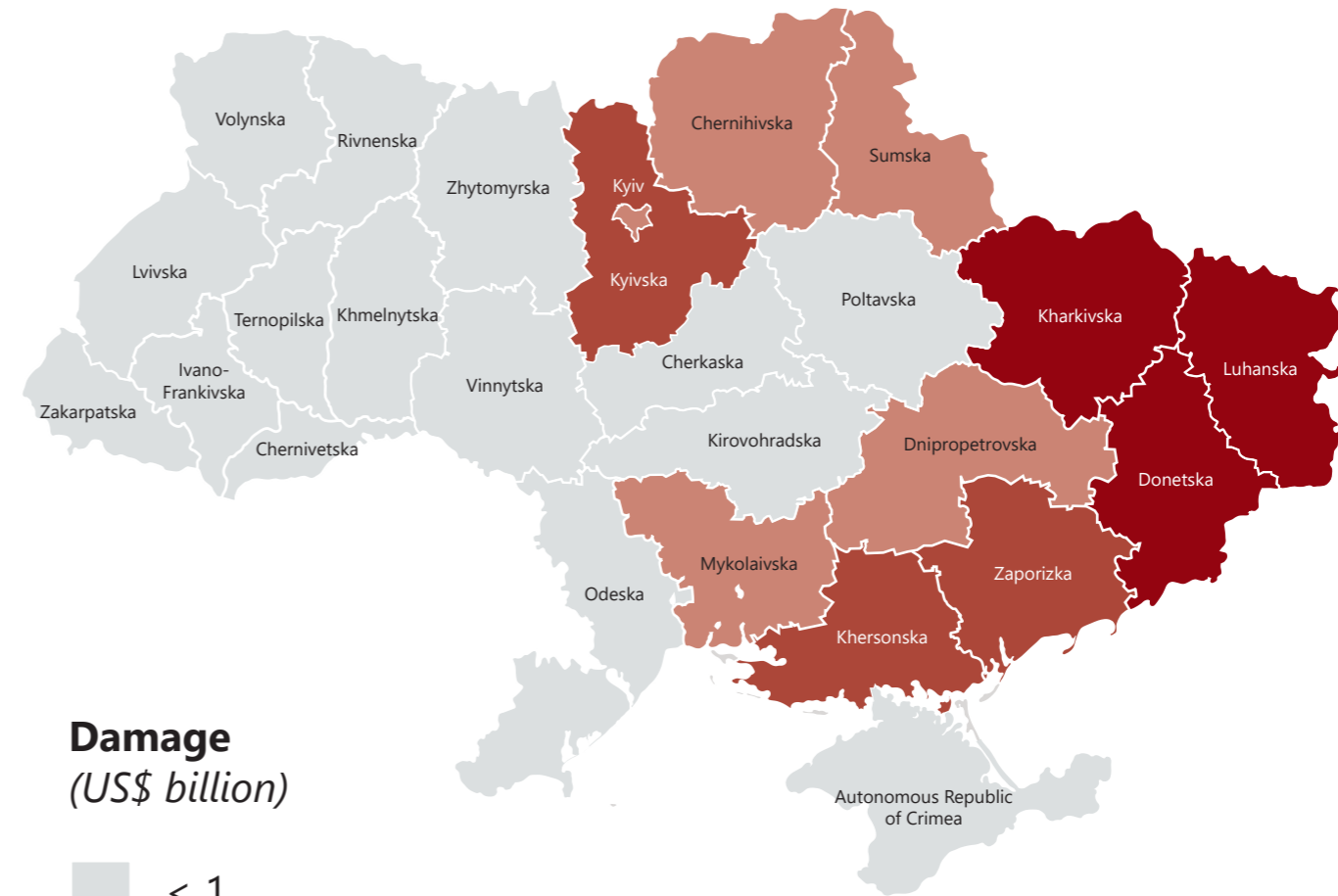
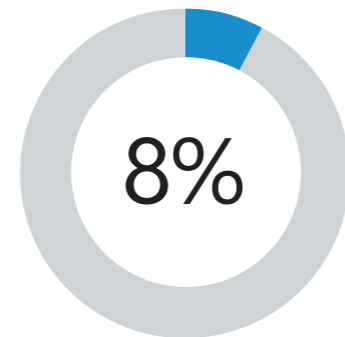
Housing represents

of total damage, including more than **1.4 mln** housing units affected; with **1/3** destroyed of these beyond repair (WB, March 2023)



Commerce and industry represent

of total damage, including both private and publicly-owned enterprises (WB, March 2023)



**DIRECT DAMAGE –
\$135 BLN**





TERRITORIES AFFECTED BY THE DAM EXPLOSION AT THE KAKHOVSKA HPP



On June 6, the Kakhovska HPP was blown up by the Russian occupying forces



Based on the preliminary estimates, more than **20 settlements** (with more than 2,600 houses) were flooded



More than **1 900 people** have already been evacuated and the evacuation activities are underway



At present, the average water level in Kherson is more than **5 meters** above the normative value



Kherson

- **30,000** residents without centralized water supply
- **170,000** residents without centralized sewage
- the average water level is more **5 meters** above the normative value

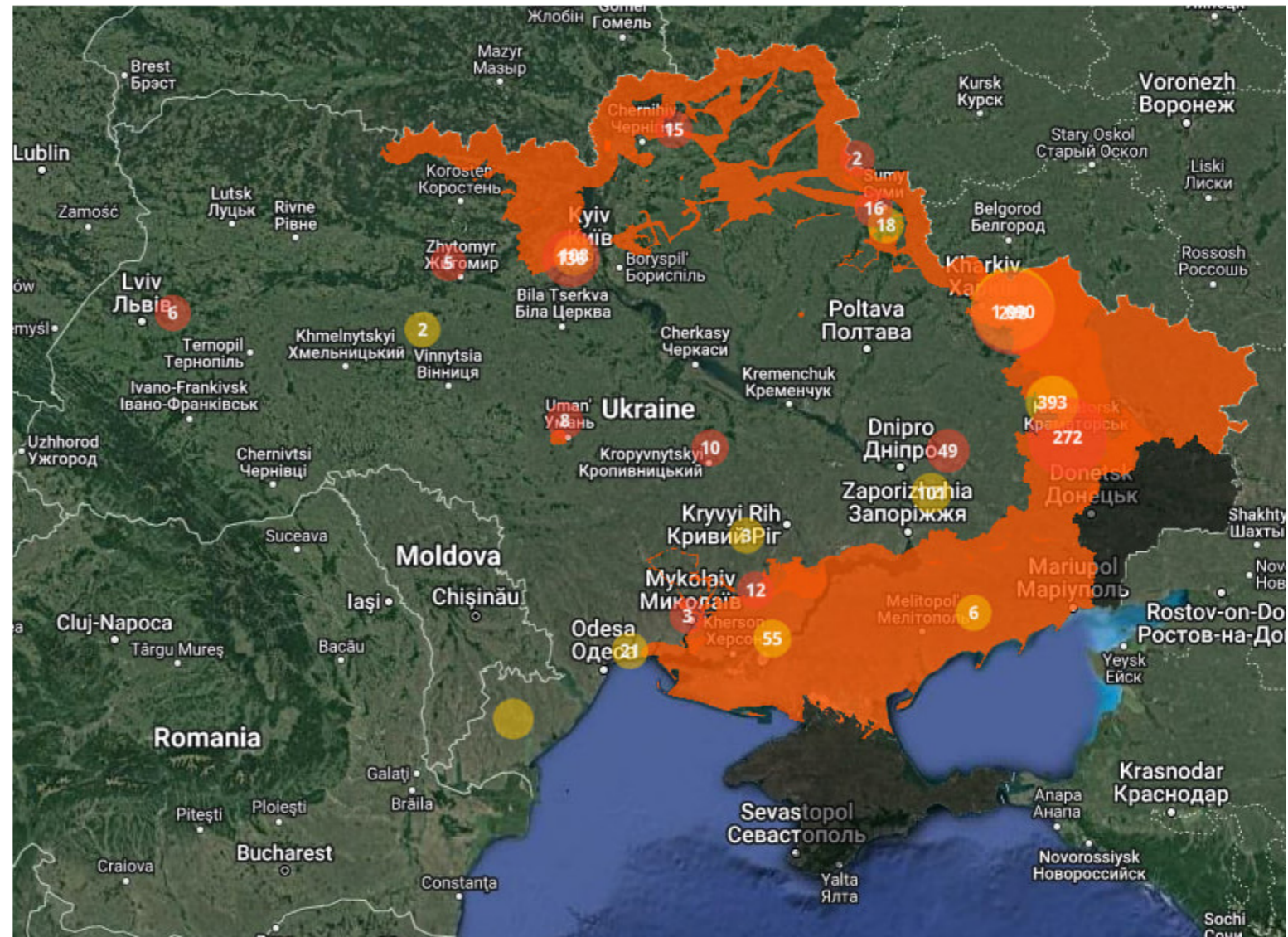
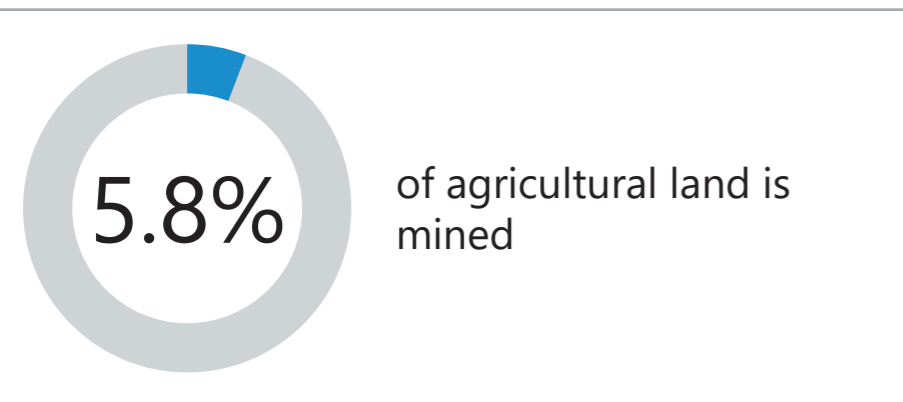
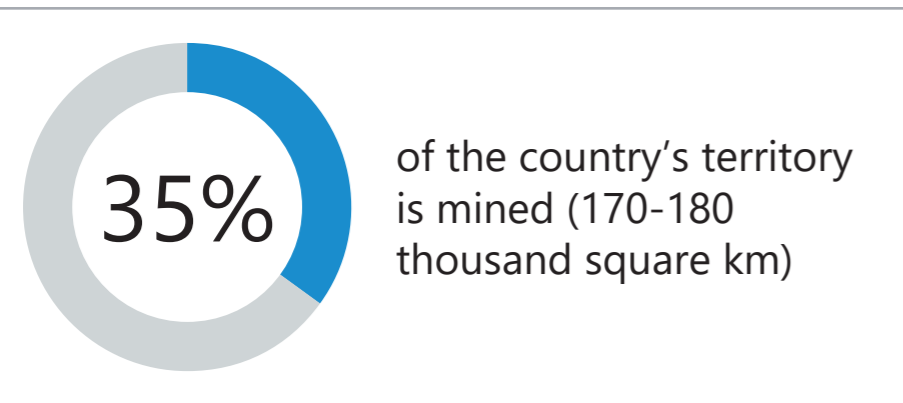


MINED TERRITORIES



UKRAINE IS THE MOST MINED COUNTRY IN THE WORLD

In total, an area 4,5 times the size of Switzerland has been mined in Ukraine



Map of Ukrainian territories that could potentially be contaminated by explosive objects (State Emergency Service of Ukraine)

THE GOAL: TO RETURN UKRAINIANS HOME



TASKS

ECO-ORIENTED FOCUS

Demining of territories



Reduction of pollution of territories and their restoration

Provision of basic services



Implementation of environmentally friendly methods of heat supply, modernization of water supply and purification systems

Protection of critical infrastructure



Development of regional decentralized sources of co-energy generation

Housing reconstruction and construction



Energy-efficient and inclusive solutions, implementation of circular economy principles, recycling of building materials

Returning economic activity to communities



Provision of support at the state level for private business that works with sustainable green solutions, reorientation of the infrastructure market to modern standards in the field of environmental management

BASIS: DATA-DRIVEN POLICIES

DIGITALIZATION OF GREEN SOLUTIONS



DATA-DRIVEN POLICIES

RDDP

Register of damaged and destroyed property

TASK: to form a single official source of destruction data. In the future, these data will be used to substantiate the reparations that Ukraine will demand from the Russian Federation.



Assessment of needs for building materials

DREAM

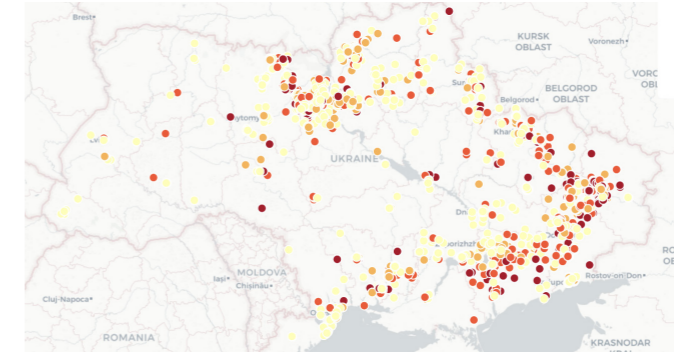
Digital restoration ecosystem for accountable management

TASK: to create a single digital pipeline for reconstruction projects and ensures transparent and effective implementation of the projects at the national, regional and local levels



Mechanisms for stimulating projects based on green solutions

Geoinformation system (GiS)



TASK: to monitor situations in communities, data-based business support tools.

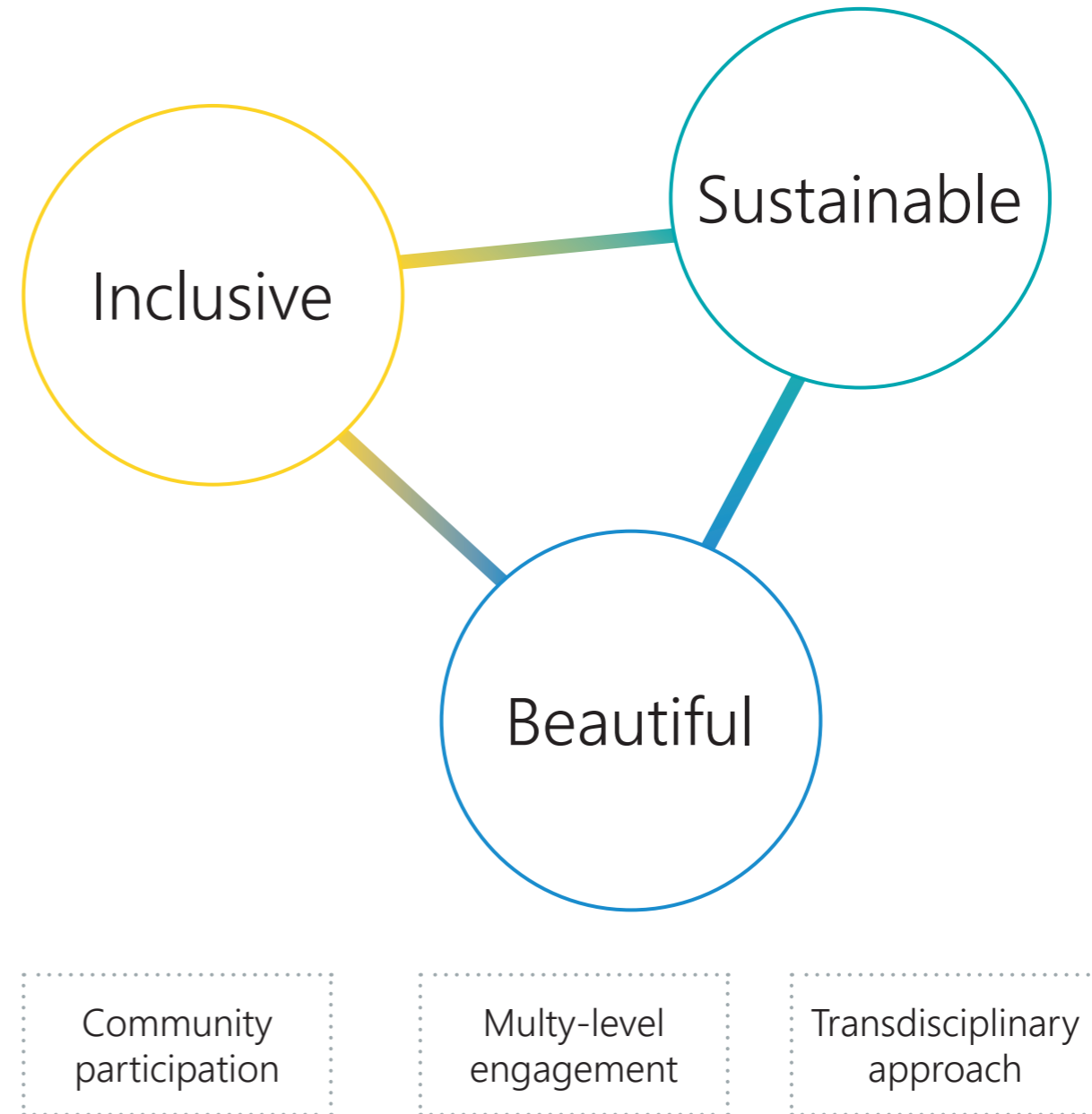
Principles of sustainable development in state regional policy

CIRCULAR ECONOMY PRINCIPLES



Goal: to increase the number of projects that will meet the principles of New European Bauhaus Compass

- ▶ use of financial instruments to encourage developers to use green and circular technologies
- ▶ informational support and promotion of green and circular construction projects among people who will choose new housing as compensation



NEW STANDARDS OF ENERGY EFFICIENCY AND INCLUSIVENESS



HOUSING



All new buildings will meet the new requirements for energy efficiency

- ▶ legislative requirements for energy efficiency have been improved and will be reviewed systematically

Goal: to reach EU standards and requirements

SOCIAL INFRASTRUCTURE







New requirements for inclusiveness

- ▶ new norms regarding the inclusion of all new buildings
- ▶ inclusive social infrastructure buildings
- ▶ inclusive public space
- ▶ new requirements for fire safety and evacuation schemes of buildings

GREEN AND AUTONOMOUS ENERGY SOLUTIONS

- ▶ Decentralization of the energy system and risk diversification
- ▶ Use of modern eco-oriented solutions
- ▶ Attracting investments in strengthening the capacities of communities
- ▶ Higher quality and lower price of energy services for the population

TYPES OF GENERATION

-  Biomass energy generation
-  Waste to energy
-  Small hydro generation
-  Geothermal electric and thermal plants



**Kamianets-Podilsky
thermal power station
(Khmelnytskyi region)**

**The thermal power plant
produces 42 MW of
thermal energy and 4
MW of electrical energy.**



THE NEED FOR EXPERTISE



Cooperation in improvement of state digital restoration tools in terms of green standards, reduction of corruption risks, effective regional policy



Preparation and implementation of environmentally friendly distributed co-generation projects.



Development of state mechanisms to encourage business to use sustainable green technologies in restoration processes

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