we accelerate Ukraine's critical infrastructure recovery

bridgeUkraine.org is a non-profit alliance of more than 45 practitioners, consultants, academics, institutions, and international bodies that are tasked to accelerate Ukraine's critical infrastructure recovery

www.bridgeUkraine.org

NEWSLETTER

YEAR 1
Published: 15 May 2023

bridgeUkraine for a Sustainable and Resilient Future

Dear reader,

It is a pleasure to send you our first newsletter on behalf of the bridgeUkraine initiative. We are at a crucial stage of the initiative. Many of our aims have kicked off dynamically during the past year, and several achievements in support of Ukraine's reconstruction and capacity building have been accomplished. We had very positive feedback and bridgeUkraine currently counts more than 45 members from all over the world with significant contribution of Ukrainians and strong participation of women.

bridgeUkraine has signed a Memorandum of Understanding (MoU) with the Derzhdor NDI SE of the Ukrainian State Road Research Institute and another MoU with the Ministry of Restoration of Ukraine is on its way. It has supported four Ukrainian academics with funding exceeding £700k, who will work on the reconstruction prioritisation of Ukraine. Its has supported the twining between the Ivan Franko National University of Lviv and the University of Birmingham. It has educated more than 300 Ukrainian scientists and engineers with seminars, CPD and capacity building meetings. bridgeUkraine members have submitted a €1.2m Horizon research project, which aims to facilitate the reconstruction of Ukraine.

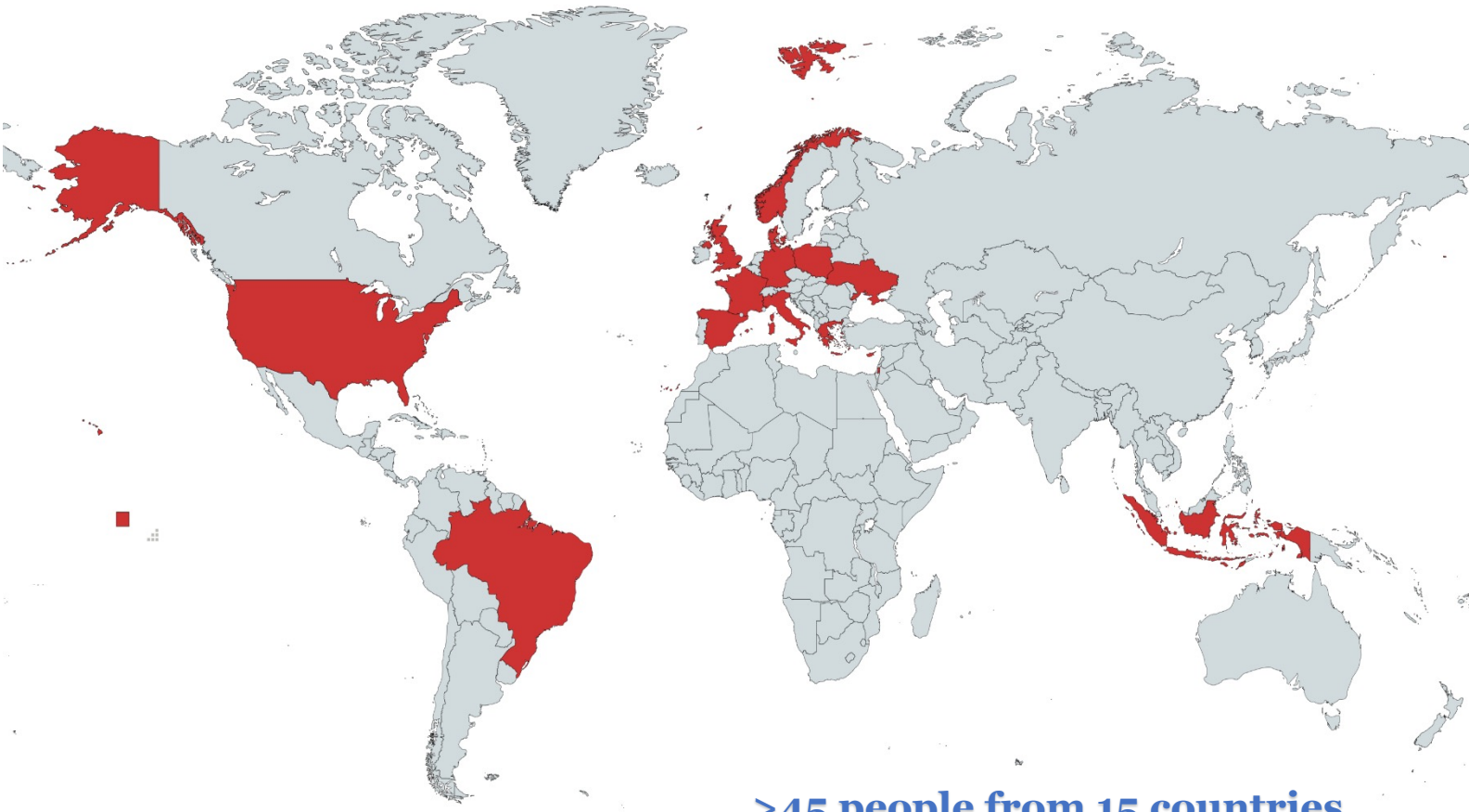
bridgeUkraine published an open access paper titled 'Conflict-resilience framework for critical infrastructure peacebuilding' in the journal of Sustainable Cities & Societies and an UNDP CDRI report on 'Financing for disaster and climate resilient infrastructure for a net-zero economic transition with a case study on Ukraine's infrastructure', which will be presented in the next G20 summit. bridgeUkraine contributed to the Ukraine's Pavilion during COP27 on 'accelerating science-based green transition in Ukraine as a model for post-conflict and post-disaster recovery'.

You are also welcome to share your thoughts on our social media and join us!

Sincerely,

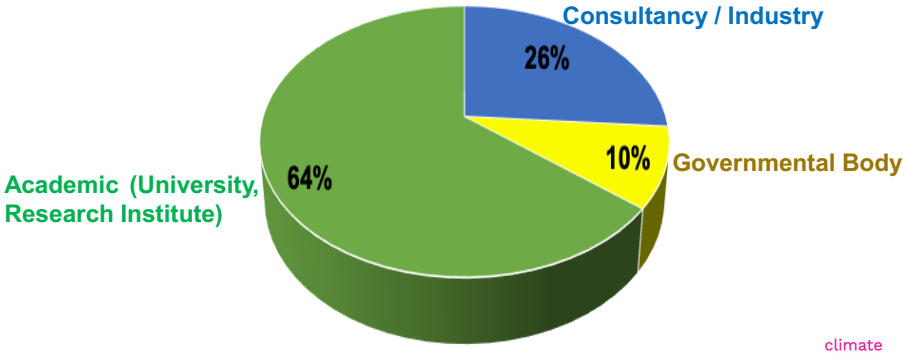
The bridgeUkraine Alliance

Geographical Distribution

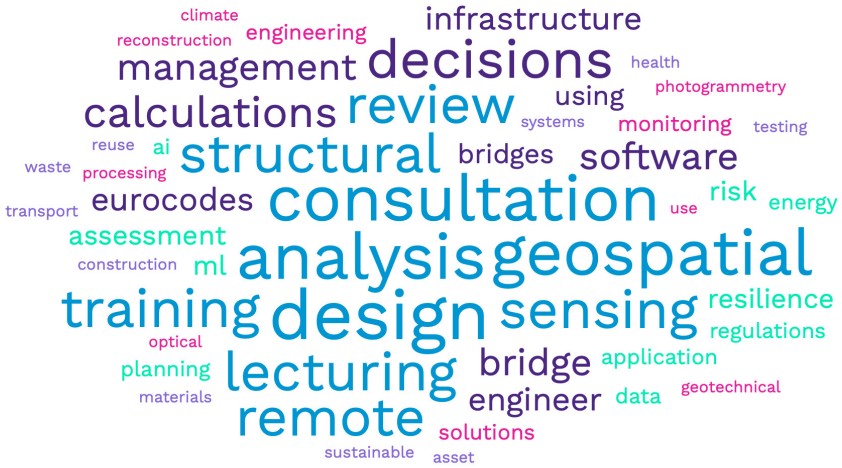


>45 people from 15 countries

the Expertise of bridgeUkraine for Reconstruction



Liaison with the Ministry of Restoration of Ukraine



45 people:

50% women, 50% men

30% from Ukraine

Objectives

We accelerate peacebuilding prioritisation and optimisation for critical infrastructure to support Ukraine's people and economy:

Establish a Community of Practice based on an **alliance** of engineers, academics, economists and governmental bodies to build capacities and train Ukrainians for rebuilding infrastructures.
Read more >>

Develop and apply **resilience** frameworks to inform prioritisation and accelerate a science-based green transition in Ukraine for optimal resource allocation in infrastructure recovery.
Read more >>

Integrate forensic evidence from inspections on the ground, open digital data, crowdsourcing for **damage tracking** to inform **optimal infrastructure reconstruction.**
Read more >>

bridgeUkraine contributes to UN SDSs and Targets

Achievements in Research - Highlights

Sustainable Cities and Society 91 (2023) 104405

Contents lists available at ScienceDirect

Sustainable Cities and Society

journal homepage: www.elsevier.com/locate/scs

Conflict-resilience framework for critical infrastructure peacebuilding

Stergios-Aristoteles Mitoulis [a,b,c,*], Sotirios Argyroudis [b,c,d,*], Mathaios Panteli [b,e], Clemente Fuggini [b,f], Sotirios Valkaniotis [b,g], William Hynes [h], Igor Linkov [i,j]

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[b] bridgeUkraine (www.bridgeUkraine.org), London, UK
[c] Infrastructuresilience (www.infrastructuResilience.com), London, UK
[d] Department of Civil and Environmental Engineering, Brunel University London, UK
[e] Department of Electrical and Computer Engineering, University of Cyprus, Cyprus
[f] Infrastructures Business Unit, Rina Consulting S.P.A., Italy
[g] Department of Civil Engineering, Democritus University of Thrace, Greece
[h] OECD (Organisation for Economic Co-operation and Development), France
[i] US Army Engineer Research and Development Center, USA
[j] University of Florida, Gainesville, USA

Published paper

Proposal to HORIZON-MSCA-SE € 1.2 million

The British Academy

Researchers at Risk Fellowships

Four fellowships were supported by the British Academy/CARA for top Ukrainian academics of Lviv Polytechnic National University:

-**AI4SURE** - AI-empowered data-mining techniques for SUstainable and climate-REsilient peacebuilding
-**bridgeAdapt** - Sustainable adaptation measures for deteriorated bridges to climate-induced damage
-**WINDTUNE** - Turbulence on surface pressures on residential buildings situated in industrial zones
- **ReconAI** - Data-driven infrastructure resilience assessment toward climate adaptation and conflict-resilience

START PAGE

MARIE SKŁODOWSKA-CURIE ACTIONS

Staff Exchanges (SE)

Call: HORIZON-MSCA-SE-2022

PART B1

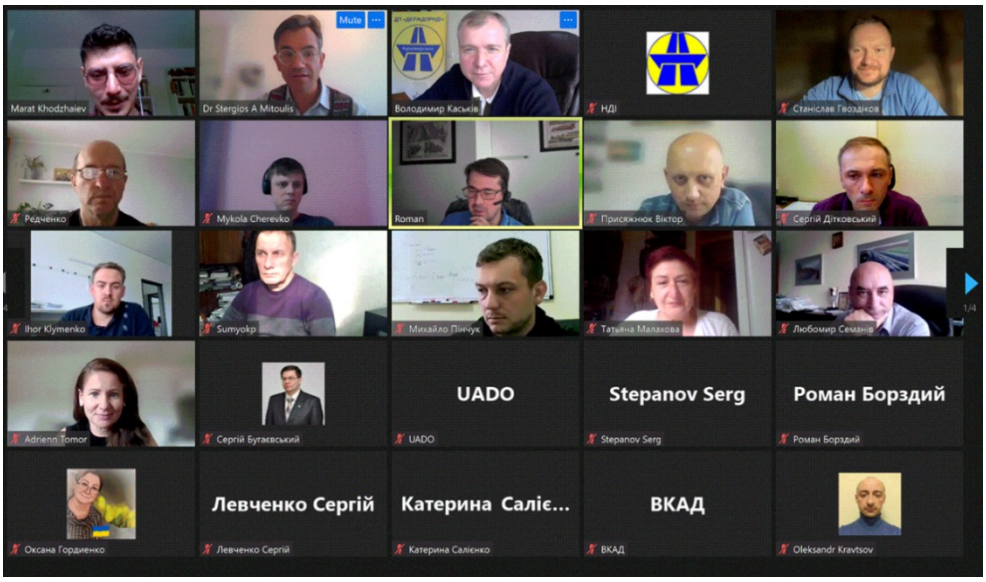
Horizon Europe

"REvolve"

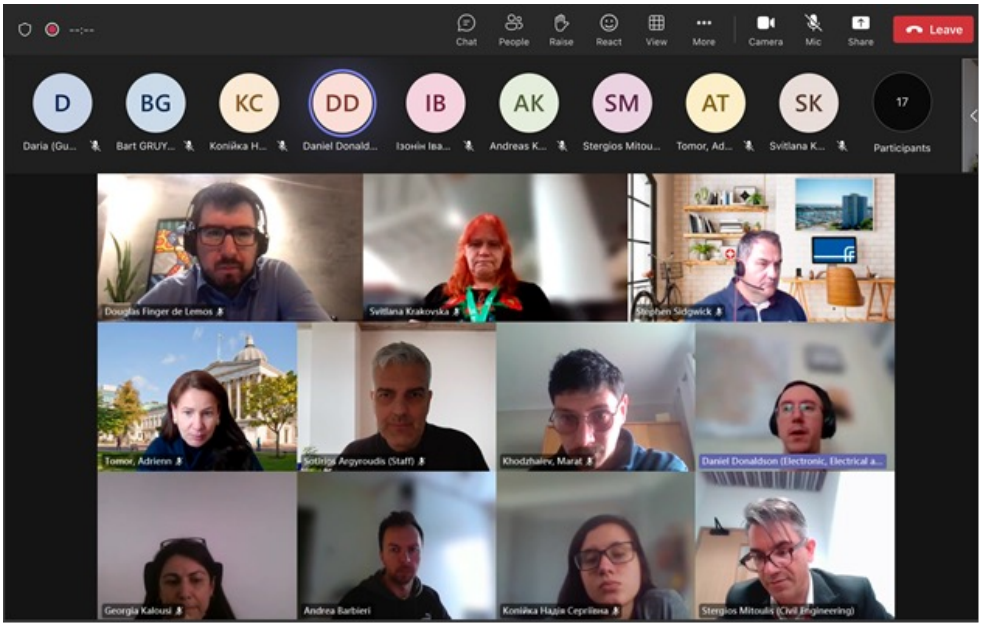
REconstruction and eVOLutiVE solutions for more resilient and sustainable infrastructures after human-induced, natural and climatic multi-hazards stressors

Global Space Conference on Climate Change 2023

watch here>>



Delivered a 7-hour **Workshop** (15.09.2022) to more than 160 Ukrainian Engineers titled "**Design of prestressed bridges to Eurocodes - Resilient ways to build back better**"



Delivered a 2-hour **Workshop** (22.09.2022) to more than 50 Ukrainian Engineers titled "**Stone bridges construction**"

Organised two 3-hour **Seminars** on the **design of geostructures and foundations** based on **Eurocode 7.**

Organised with Stanislav Gvozdikov, Deputy Director of Eurointegration Processes – M.P. Shulgin State Road Research Institute State Enterprise – Derzhdor NDI SE for the Ukrainian State Road Research Institute.

Participated in the International Scientific Conference (7-8.12.2022) "**Bridge management and reconstruction strategies for Ukraine**" and delivered 3 lectures:

- "Resilient reconstruction of Ukraine"
- "Bridge reconstruction"
- "The value of asset management"

CDRI
Coalition for Disaster Resilient Infrastructure

Global Flagship Report on Disaster and Climate Resilient Infrastructure

The report will be released in 2023 at G20 summit

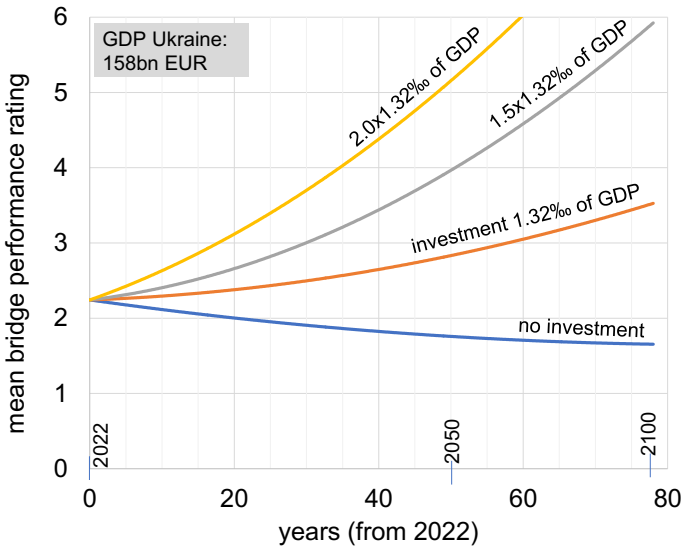
Title: Financing for disaster and climate resilient infrastructure for a net-zero economic transition – Case study on Ukraine's infrastructure

Authors:

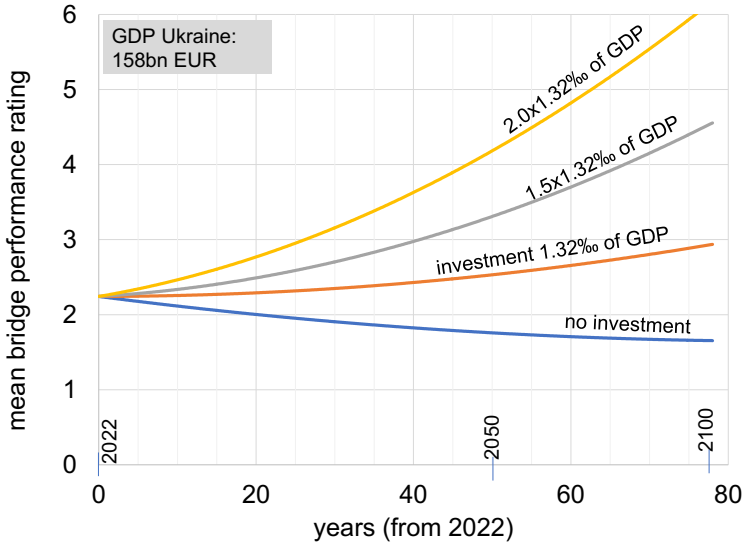
Dr Stergios Aristoteles Mitoulis, University of Birmingham
Dr Sotirios A Argyroudis, Brunel University London

Objectives:

- Quantify the trade-offs and synergies between climate resilience and sustainability in infrastructure adaptation
- Financing of transport infrastructure adaptation in Ukraine considering climate projections and correlation to GDP



Adaptation with conventional materials and methods of reconstruction



Adaptation with sustainable strategies

Achievement: BridgeUkraine contributed to COP27 in the Ukrainian Pavilion

11.11.2022

14.00 - 16.00

ACCELERATING SCIENCE-BASED GREEN TRANSITION IN UKRAINE AS A MODEL FOR POST-CONFLICT AND POST-DISASTER RECOVERY

UKRAINIAN HYDROMETEOROLOGICAL INSTITUTE

WATCH THE VIDEO → MORE INFORMATION →

14:00	Introduction *Svitlana Krakovska, Ukrainian Hydrometeorological Institute, LA IPCC WGI, APENA3*
14:15	NbS for agriculture, forestry and water sectors Nataliia Pustilnuk, WWF Ukraine, Project INSURE: movIng Nature baSed climate solutions into Ukraine's Reform agEnda
14:30	Mykola Shlapak, Climate change and environmental consultant, LA WGIII IPCC (Ukraine)
14:45	Key findings for sustainable urban planning to adapt and mitigate climate change Siir Kilkis, The Scientific and Technological Research Council of Turkey, LA WGIII IPCC
15:00	Oleksii Riabchyn, Advisor to the CEO of Naftogaz of Ukraine on low carbon business
15:15	Vidvuds Beldavs, Chairman of the Board of Riga Photonics Centre advancing light sciences and technologies for Latvia; futurist
15:30	bridgeUkraine.org - an Alliance committed to facilitate more resilience and sustainable infrastructure reconstruction Stergios Aristoteles Mitoulis, Sotirios Argyroudis
15:45	Discussion and concluding remarks Svitlana Krakovska

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watch here>>

Find out more achievements here >>

Measurable Planned Impact (3 Years: 2023-2026)

Action	KPIs	Quantifiable targets / magnitude	Size of target group
Science (SC)			
Publications-high-quality open access knowledge	Peer-reviewed open access publications, Citations, Citation index	> 25 publications, > 1000 citations after 5 years, > 3500 downloads and reads	> 1000 peers and researchers
Skills to strengthen human capital in Research and Innovation	Careers, number of upskilled staff	> 70 MSc, >20 researchers, > 5 administration staff	> 200 candidates
Share and foster knowledge and open science	Shared outputs, new collaborations	1 open web-GIS based platform, 1 Massive Open Online Course (MOOC), 1 website, > 35 new collaborations, workshops	> 30 academic and non-academic organisations
Economy/technology (EC)			
Supported employment	Number/quality of jobs	> 50 new jobs	> 3 SMEs, 10 Research Institute
Private and public investment	Amount of investment	> €10m funding/leverage investment towards 3% GDP target	5 case studies in Ukraine with critical infrastructure
Contribution to policy	Number of white papers and consultation documents	> 3 consultation/policy papers	>8 committees/review bodies, >10 Working Groups
Increase the efficiency of donors' investments toward peacebuilding	Efficiency	> 40-70% increase of efficiency, improve >30% of ROI	> 10 infrastructure operators, >5 regions, >1,000 assets
New products and services	Number of products Number of new services	1 web-GIS based open platform, 1 novel holistic reconstruction framework	> 5 software companies > 30 academic institutions, consultancies and SMEs
Society (SO)			
Outputs aimed at addressing specific policy priorities and SDGs **Improving decision-making**	Frameworks Software and tools Case studies SDGs	3 holistic reconstruction frameworks, > 10 metrics for data-driven condition assessment, 1 platform, > 3 case studies, > 10 SDG targets	> 5,000,000 citizens > 12,000,000 indirectly influenced end-users
Co-creation engagement of citizens to strengthen the uptake of innovation in society	Number of engagements with citizens and end-users	5 participatory decisions in workshops (WS), > 50,000 engagements in social media (e.g. reactions, comments, reads) > 1,000 engagements in open discussion group (e.g. comments, interactions)	> 30 decision makers per Workshop > 100 pupils and students > 5,000 citizens
CO2 emissions and whole-life carbon footprint	% reduction in CO2 emissions	> 50% reduction	> 10 municipalities
Mortality due to human induced and natural disasters	Number of casualties, affected population	> 50% less casualties / citizens affected depending on hazard and infrastructure	> 50,000 citizens depending on the case study areas

Conflict resilience framework for critical infrastructure peacebuilding

Stergios Aristoteles Mitoulis, Sotirios A Argyroudis, Mathaios Panteli
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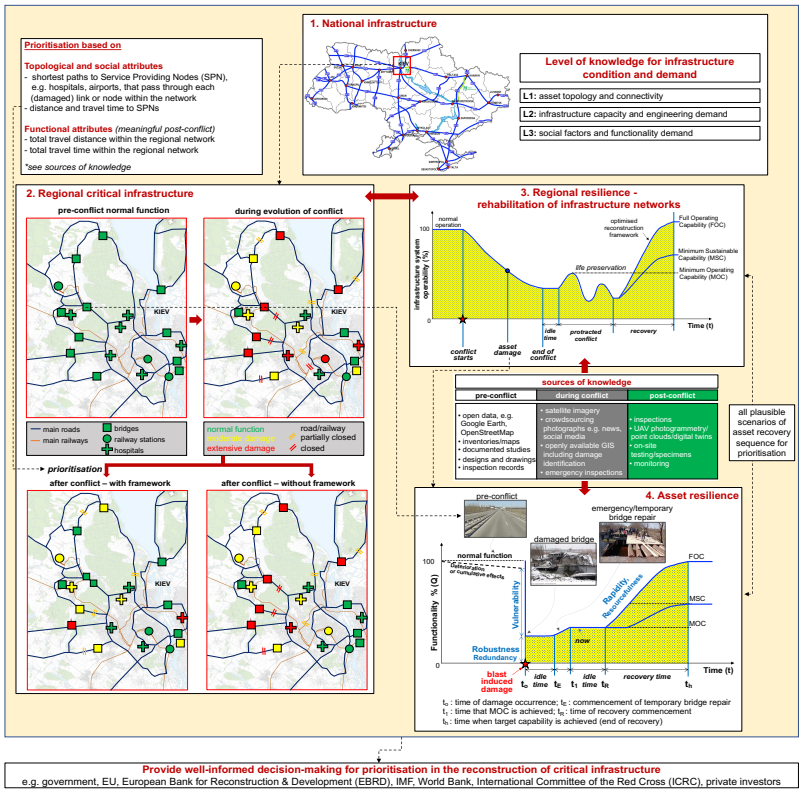

Published report

on Conflict Resilience Framework for Critical Infrastructure Peacebuilding

Find it here >>

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we accelerate Ukraine's critical infrastructure recovery

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