

CDN

Environmental



Security Booklet



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Preface

In August 2025, in Sheptytskyi, Lviv Oblast, CDN gathered 25 young people from Ukraine and Europe to work together in the International Seminar “Environmental Consequences of War: Monitoring and Overcoming”. During the event, participants explored how Russia’s aggression impacts our environment, democracy, and human rights — and learned how to make our environment more resilient. Over 2025 and 2026, CDN disseminated the results of the activity in the form of posts and webinars.

Now we present to you a collection of a few more serious and detailed texts than those that can be published on social media. The texts explore the topics of environmental security and environmental consequences of Russia’s aggression in Ukraine and other armed conflicts, notably the 1992-95 war in Bosnia and Herzegovina. It includes a workshop template you can conduct in your own community to raise awareness.

We hope that it will further contribute to increasing understanding of security and foreign policy among Eastern European progressive changemakers. We wish you a pleasant reading, and encourage you to stay in touch with CDN!

CDN Executive Committee

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“Environmental Consequences of war”

Sheptytskyi, 2025



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Western Bug river in Sheptytskyi

Environmental security and Green values

by Igor Skórzyński



The environmental security is crucial for broader security and foreign policy frameworks. But what is the environmental security?

There are several definitions of the concept in the academic literature and laws of specific countries. Due to the topic of project and publication we will present one from the Ukrainian Law. The article 50 of the Law of Ukraine "On Environmental Protection" states that:

1. *Environmental security is a state of the natural environment that prevents deterioration of the ecological situation and the emergence of dangers to human health.*
2. *Environmental security is guaranteed to citizens of Ukraine by implementing a wide range of interrelated political, economic, technical, organizational, state-legal and other measures.*
3. *The activities of individuals and legal entities that cause harm to the environment may be terminated by court decision.*

What can we see in this definition is that that environment is a part of security infrastructure of a country. Firstly, while the environment has of course incredible worth on its own, its degradation can undermine public health, but also other key sectors, as infrastructure, energy production. Secondly, the environmental security requires coordinated action across different policy areas and institutions.

Hence, the protection of the environment is crucial to the security, but environmental policy is different aspect, focusing on preserving or increasing quality of ecosystems, while environmental security preventing the degradation from becoming the danger for people's health, culture and identity, and the mechanism of protection of environment from conflict or geopolitical challenges. Together with other non-military aspects of security, such as energy security, food security, etc., it more and more often appears in national security strategies.

Environmental costs of conflicts

Armed conflicts have severe and long-lasting consequences for the environment. Recovery of countries' environment takes usually around 20-30 years¹. Some of the ecosystems can never recover. The conflicts, especially high-intensity, lead to contamination of soil and water, or deforestation.

It is often the side effect of war – but in case of russian invasion of Ukraine, the destruction of environment by russia is massive and deliberate, equating to ecocide. This ecocide, and specific aspects of environmental damage, are topics of the following articles in this publication.

The damage to the environment further undermines security, as environmental stresses, such as contamination or deforestation, can be one of the causes for the unrest, hindering the peace-building processes. Sustainability of the recovery process is also crucial for the security, as ignoring the environmental dimension or increased resource extraction can further increase the environmental stress.

The need for cross-border cooperation

The environment can suffer even without active military conflict: rivers flow across multiple countries, pollution spreads, and borders go through unique ecosystems. Thus, environmental security requires international agreements, data exchange or a shared monitoring system, leading to the institutional dialogue we need in the world. But we also need to be able to prevent the environmental threats from other countries, and ensure that those guilty of the damage face responsibility.

For example, Białowieża Forest, lying on the border between Poland and Belarus, is suffering damage due to geopolitical tensions. The physical barriers constructed in recent years and increased military patrols disrupt the natural migration routes of animals, including bison. Greens and progressives need to advocate for increasing the importance of environmental protection in such cases, but also to address the root causes of the damage. In this case, the cause was the threat from russia. If russia had been stopped before 2022, the militarisation of this unique ecosystem at the border would not be necessary.

¹ Krampe, F., Kreutz, J., & Ide, T. (2026). "Armed conflict causes long-lasting environmental harms". *Environment and Security*, 4 (1), 3-17.

Not everything is about the security, not everything is about the environment.

Taking seriously environmental security and other non-military aspects of security does not mean they should dominate policy discussions. We must seriously work on policies regarding developing defence capabilities (such as armaments, civil defence, and interoperability). Environmental protection, though connected with security, does not need to be framed as a security issue. The same logic makes sense in other policy areas: social inclusion or education strengthen long-term resilience and defence capabilities. All these topics can be included in the national security strategies and in our policy documents on security, but only together with strategic goals and military aspects. And they are important on their own, as separate policy areas.

At the same time, not everything is primarily about the environment. In the Greens' discourse about the Syrian civil war, the climate and environmental aspects were often emphasised. In reality, while droughts in Syria were one of the many reasons for the large-scale pro-democracy protests in 2011, the responsibility for the war, atrocities, including over 190.000 civilian deaths², and mass refugee movement lies in Assad's regime and russian intervention. Underlining the role of environment and climate change was used to justify the anti-interventionist attitude of Green politicians and European governments and their total inaction towards Assad and russia, thus undermining Europe's security.

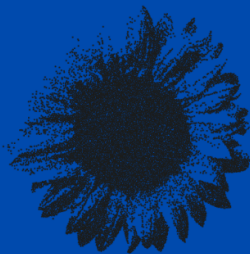
Moving forward

The recognition of how environmental protection, peace and security are deeply connected is crucial for increasing the resilience of our ecosystems and for European security. Understanding of environmental security, thus, will help Greens and progressives in programming work and advocacy, but we need to remember that environmental security is only one dimension of a multi-track response, military and non-military, to the threats to European security. And the main threat, for the environment, and all the other aspects of security, remains the terrorist state of russia.

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² Syrian Observatory for Human Rights (2024). *Syrian Revolution 13 years on | Nearly 618,000 persons killed since the onset of the revolution in March 2011.*

Environmental damage caused by Russia's war against Ukraine



by Olga Adamenko

Since the beginning of the full-scale invasion, Russia has had a significant impact on Ukraine's environment, which can vary from local landscape fires to the destruction of industrial and energy facilities, causing severe and long-term damage.

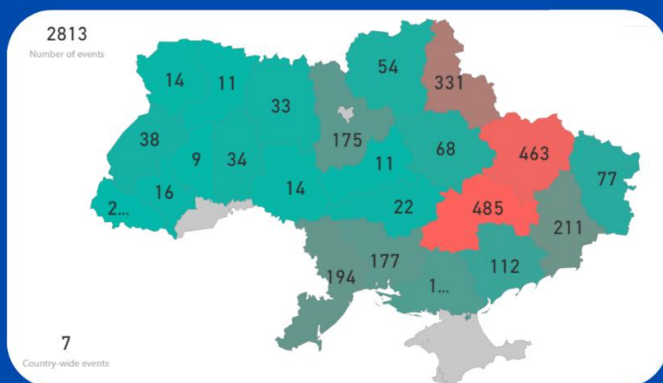
At the national level, Ukraine has established a mechanism to document environmental damage caused by the war. The "EcoZagroza" platform, developed by the Ministry of Environmental Protection and Natural Resources, has already recorded more than 10,000 cases.

Since 24 February 2022, Ukrainian environmental NGO Ecoaction has also been monitoring cases of potential environmental damage through an interactive map³. As of April 2026, over 2,800 cases have been recorded in seven categories. Each of these cases represents a risk of contamination of soil, water, and air with heavy metals, petroleum products, and explosive materials. Although the number of cases is lower than reported on the state platform, this is mainly due to differences in documentation methodologies and verification approaches.

The map is not only a record of specific events, but also a tool for understanding the larger picture of environmental damage across regions and sectors. The highest number of cases has been recorded in frontline regions, such as Dnipropetrovsk, Kharkiv, Sumy, and Donetsk (more than 1,400 in total). The leading categories of incidents include damage to industrial facilities, damage to energy infrastructure, and impacts on ecosystems.

³ Center for Environmental Initiatives "Ecoaction". (2022). *Potential environmental impacts caused by Russian aggression in Ukraine (interactive map)*.
<https://en.ecoaction.org.ua/warmap.html>

As of April 2026, over 2.800 cases of potential environmental damage have been recorded (source: Ecoaction)



Along with the more “visible” environmental impacts, there is also damage to a less obvious but equally important system – the climate system. Climate is often not perceived as something directly affected by war, yet the impact is substantial.

Since the beginning of the full-scale war, the Initiative on Greenhouse Gas Accounting of War, together with Ecoaction and with the support of the responsible Ministry, has been systematically assessing GHG emissions caused by the war.

These emissions come directly from military activities, including fuel consumption for combat operations, the use of ammunition, the production of military equipment, and the construction of fortifications. They also result from landscape fires, the destruction of energy infrastructure, future reconstruction, and impacts on civil aviation, such as the rerouting of flights due to the closure of Ukrainian and parts of Russian airspace.

Over four years of the full-scale war, climate damage caused by Russia's aggression has resulted in approximately 311 million tonnes CO₂ equivalent⁴. This amount is comparable to the total annual emissions of the European Union's largest country, France. In monetary terms, using a social cost of carbon of \$185 per tCO₂e⁵, the total climate damage reaches 57 billion USD.

⁴ Center for Environmental Initiatives “Ecoaction”. (2026). *Climate damage caused by Russia's war in Ukraine: 48 months* (report).

https://en.ecoaction.org.ua/wp-content/uploads/2026/02/climate-damage-rusaggression_48months_en-2s.pdf

⁵ Rennert, K., et al. (2022). *Comprehensive evidence implies a higher social cost of CO₂*. *Nature*, 610(7933), 687–692. <https://doi.org/10.1038/s41586-022-05224-9>

The largest share of emissions comes from warfare (37%), followed by landscape fires (23%) and future reconstruction (23%).

Landscape fires in frontline areas show that war and climate change are closely linked and, moreover, reinforce each other. On the one hand, military activities directly cause fires through shelling and explosions. On the other hand, rising temperatures and prolonged heatwaves create conditions in which fires spread more easily and become more intense.

The years 2024 and 2025 have been marked by much drier-than-average conditions in Ukraine, which significantly increase the likelihood and spread of landscape fires. Under such conditions, military activity further intensifies fire outbreaks, with most occurring along or near the frontline. With firefighters unable to operate in active combat areas, these fires spread uncontrolled, increasing in both scale and intensity. This creates a compounding effect, where climate change and war jointly accelerate environmental degradation.

At the same time, the impact goes beyond military-related emissions. Russia is historically one of the world's largest greenhouse gas emitters⁶, while revenues from oil and gas remain one of the key sources of funding for its state budget, including the financing of military activities. It is assessed that over four years of the full-scale war, Russia has earned more than 1 trillion USD⁷ in revenue from fossil fuel exports. This creates a direct link between fossil fuel consumption and the continuation of the war. Thus, Russia is both accelerating the climate crisis and profiting from it.

Overall, the environmental consequences of Russia's war against Ukraine go far beyond immediate damage. They include long-term ecosystem degradation and significant climate damage, which affect not only Ukraine, but the whole world. Russia must be held accountable for the environmental damage it has caused. This accountability should be ensured through international legal mechanisms and further reparations.

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⁶ Evans, S. (2021, October 5). *Analysis: Which countries are historically responsible for climate change?* [Carbon Brief](#).

⁷ Centre for Research on Energy and Clean Air (CREA). (2026). *Four years of Russia's invasion of Ukraine: Fossil fuel revenues and impacts* (analysis report).

https://energyandcleanair.org/wp/wp-content/uploads/2026/02/CREA_RU_Analysis_Four-years-of-invasion_24.02.2026.pdf

Pollution of the Black Sea in the context of Russia's war against Ukraine

by Jakub Bojanowski



The Black Sea is a unique oceanographically semi-enclosed body of water, characterised by limited water exchange with the Mediterranean Sea through the system of Turkish Straits. This means that all pollutants introduced into its basin accumulate, and that self-purification processes occur much more slowly than in open-ocean systems. Already at the end of the 20th century, it was indicated that the Black Sea was in a state of profound ecological crisis resulting from eutrophication, excessive nutrient inputs, and industrial pollution. In subsequent decades, research confirmed the deepening of these problems and their impact on ecosystem structure, including the collapse of higher organism populations and the dominance of opportunistic planktonic species⁸. These transformations led the ecosystem to transition to an alternative state of equilibrium that is difficult to reverse.

Multifaceted consequences of Russian aggression

In this context, Russia's invasion of Ukraine represents a further destabilising factor for the marine environment. Scientific literature emphasises that contemporary armed conflicts have multifaceted impact on the environment, encompassing both direct pollution and indirect consequences related to the weakening of institutions responsible for environmental protection⁹. In the case of the Black Sea, these impacts overlap with existing problems, leading to a cumulative effect.

One of the most significant events affecting the environment was the destruction of the Kakhovka Dam in June 2023. This disaster led to a rapid

⁸ Kideys A. E. (2002). Ecology. Fall and rise of the Black Sea ecosystem. *Science*, 297(5586), 1482–1484. <https://doi.org/10.1126/science.1073002>

⁹ Lawrence M. J., Stemberger H. L. J., Zolderdo A. J., Struthers D. P., Cooke S. J. (2015) The effects of modern war and military activities on biodiversity and the environment. *Environmental Reviews*. 23(4): 443–460. <https://doi.org/10.1139/er-2015-0039>.

runoff of the Dnipro River, carrying significant amounts of bottom sediments and pollutants accumulated over decades of industrial and agricultural activity. Research indicates that the Dnipro basin is a significant source of heavy metals such as cadmium, lead, and zinc¹⁰. The sudden release of these substances leads to their secondary mobilisation and increased availability in the aquatic environment. This process can lead to intensified eutrophication and disruption of biogeochemical element cycles. Furthermore, the transport of organic matter promotes the formation of oxygen-deficient zones, which are characteristic of the deeper layers of the Black Sea.

Pollution, leaks, noise

Military operations conducted directly at sea constitute a significant source of chemical pollution. Explosions, sinking of vessels, and the use of munitions result in the release of toxic substances, including heavy metals and explosives, into the environment. Studies of dumped munitions indicate that compounds such as trinitrotoluene (TNT) and its degradation products can persist in the environment for decades, negatively impacting benthic organisms and fish¹¹. The presence of these substances can also lead to genotoxic changes and reproductive disorders in marine organisms¹².

Another threat is the oil pollution, resulting from both damage to port infrastructure and the increased risk of maritime transport breakdowns. The Black Sea is a crucial transport corridor for energy resources, and armed conflict significantly increases the likelihood of spills. Even the small oil spills can lead to long-term ecological effects, such as bioaccumulation in marine organisms, habitat degradation, and disruption of physiological process. The limited capacity to respond to environmental disasters in wartime conditions exacerbates their effects¹³.

¹⁰ Linnik, P. N. (2000) Heavy Metals in Surface Waters of Ukraine: Their Content and Forms of Migration. *Hydrobiological Journal* 36(3):24 DOI: 10.1615/HydrobJ.v36.i3.20.

¹¹ Beldowski J. Et al., (2013). *Chemical Munitions Dumped in the Baltic Sea Report of the ad hoc Expert Group to Update and Review the Existing Information on Dumped Chemical Munitions in the Baltic Sea* HELCOM MUNI, HELCOM BSEP Series, Finland.

¹² Missiaen T. et al. (2010) Evaluation of a chemical munition dumpsite in the Baltic Sea based on geophysical and chemical investigations, *Science of The Total Environment*, 408: 3536-3553.

¹³ Yancheshmeh, R. A., Bakhtiari, A. R., Mortazavi, S., & Savabieasfahani, M. (2014) Sediment PAH: contrasting levels in the Caspian Sea and Anzali Wetland. *Marine pollution bulletin*, 84(1-2), 391-400. <https://doi.org/10.1016/j.marpolbul.2014.05.001>.

A significant, though less visible, consequence of the conflict is an increase in underwater noise levels. The intensive use of military sonar and explosions generates acoustic waves that propagate over considerable distances. The literature emphasises that anthropogenic noise is a major threat to marine mammals, affecting their ability to communicate, navigate, and feed. Cases of mass stranding of cetaceans are directly linked to the activity of military sonar, which can lead to the formation of gas embolisms in these animals. In the Black Sea, an increase in dolphin mortality has been observed, as confirmed by recent scientific analyses¹⁴.

Not only the direct consequences

The conflict means also the destabilisation of the environmental management systems. Limited monitoring, lack of access to data, and disruption of international cooperation hinder environmental assessment and the implementation of protective measures. The war has significantly weakened institutional mechanisms for environmental protection, contributing to increased anthropogenic pressures. As a result, existing problems such as eutrophication, overfishing, and the degradation of coastal habitats are exacerbated.

In summary, the impact of Russia's full-scale invasion of Ukraine is complex and multifaceted, yet it directly impacts the Black Sea environment. It encompasses both direct chemical and physical pollution, as well as indirect impacts resulting from noise, infrastructure degradation, and the weakening of environmental management systems. These effects are long-term and cumulative, meaning their consequences will be felt for decades to come. Therefore, further research and international cooperation in monitoring and restoring the Black Sea ecosystems are necessary to limit the scale of degradation and enable the gradual restoration of its ecological functions.

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¹⁴ Węgrzyn E., Rusev I., Tańska N., Miedviedieva I., Kagalo A. A., Leniowski K. (2023) The use of social media in assessing the impact of war on cetaceans. *Biol Lett* 1 April; 19 (4): 20220562. <https://doi.org/10.1098/rsbl.2022.0562>.

Effects of the 1992-1995 war on environment in Bosnia and Herzegovina

by Sara Nukić



To say war is awful is an understatement. Unfortunately, too many people are deeply aware of the grim facts of war across the globe, and many more are aware that the horrid effects of war on a region last much longer after the shooting stops. This paper aims to conceptualise and understand the effects it has on the environment in the case of Bosnia and Herzegovina.

Bosnia and Herzegovina is a country situated in the western Balkan Peninsula of Europe. It borders Serbia to the east, Montenegro to the southeast, and Croatia to the north and southwest, with a 20-kilometre-long coast on the Adriatic Sea in the south. It was a part of the Socialist Federal Republic of Yugoslavia (SFRY). Following the disintegration of that state in 1991, the majority of the population of Bosnia and Herzegovina voted for independence in a 1992 referendum. Much of the country's Serb population, however, opposed independence and boycotted the referendum. This created ethnic tensions in the region.

The war in Bosnia and Herzegovina, lasting from the spring of 1992 until the end of 1995, was rooted in ethnic conflict between Bosnian Serb separatist forces whose aims were the secession of Republic of Srpska from Bosnia and Herzegovina and unification with the rest of "Serb lands" into what is most commonly referred to as "Greater Serbia, these forces were supported by the Yugoslav National Army and the Serbian government and were opposed by the Army of the Republic of Bosnia and Herzegovina and the Croatian Defence Council. The war resulted in more than 100000 victims, 2,2 million displaced people, and tens of thousands of cases of sexual violence against women and girls. The Bosniak people endured an ethnic cleansing campaign culminating in the Srebrenica genocide in 1995, where over 8.000 Bosniak and Roma men and boys were systematically executed, making this the worst mass killing in Europe since the Holocaust. Victims buried in mass graves are still being identified to this day. This event was ruled a genocide by the International Criminal Tribunal for the former Yugoslavia in 2001, was confirmed again

after appeals in 2004 and finally was ruled as a genocide again in 2007 by the International Court of Justice.

Unfortunately, this is not the only reminder of the war in Bosnia and Herzegovina. The effects of the war are part of everyday life for the local population. From infrastructure destruction, poor economic conditions, to literal reminders in the shape of destroyed civilian domiciles and residential buildings still bearing bullet holes, the looming shadow of war is simply unavoidable.

The environmental impact did not take priority at first as much of the attention closely following the war was delegated towards rebuilding infrastructure and tending towards the needs of civilians, it has come more and more into the light in recent years. Environmental concerns in Bosnia and Herzegovina are numerous. For most of these concerns, it is hard to conclude that they come exclusively as remnants of the war, but most were still negatively affected anyway, as the conditions and reality of the country today are a direct product of the somewhat recent war.

“But man is a part of nature, and his war against nature is inevitably a war against himself.”

Rachel Carson, Silent Spring

As SFRY republic, Bosnia and Herzegovina was largely transformed from an agrarian region into a leader in heavy industry and defence manufacturing. In this transition, the electrical energy industry took advantage of the rich water resources, wood processing (Šipad), and energy and engineering (Energoinvest) developed significantly as well. The chemical industry developed around Tuzla, car manufacturing in Sarajevo, Mostar and Banja Luka. All of these specialised heavy industries made the country very vulnerable during the breakup of the SFRY.

By the time the Dayton Accords were signed in 1995, Bosnia and Herzegovina lost about 90% percent of its industrial production ability with unemployment surging to 90% as well. The total financial damages of the war ended up being around €89,7 billion to €125,7 billion, adjusted for inflation. Such an economic collapse in Europe has not been seen since the end of the WW2, and its effects are still being felt in the country.

With the country's industrial sector being devastated either directly or due to economic stressors caused by wartime activities, many facilities harbouring dangerous chemicals and environmental pollutants were left to simply decay. A great example is *Hlor alkalni kombinat* (HAK), near the

city of Tuzla. The facilities suffered damage during the war, and with little to no investment into rebuilding, poor privatisation efforts, and not paying workers for up to five years following the war, this former chemical industry giant was left to rot. Now the ground surrounding it is a toxic dumping ground full of mercury, persistent organic pollutants (POPs) and other hazards. The mismanagement of the former HAK site led to crime, and it was stripped of metal piping, exposing even more toxic chemicals into the environment, such as asbestos and kruks (toluene diisocyanate waste product), a potential carcinogenic substance buried across the site itself. The relevant government department, the Federation of BiH (FBiH), the Ministry of Environment and Tourism, does not have accurate and complete data about the types and amounts of hazardous waste. Nevertheless, the ministry gave away nearly 850,000 KM (around €434,795) for the cleaning of kruks in Tuzla. This, however, was not nearly enough to rehabilitate the whole site. This has proven to be a huge danger to local communities as it presents a public health risk whilst polluting previously arable and liveable land, in turn leading to widespread deforestation. Beyond this site, there are many examples of abandoned infrastructure and incomplete infrastructure projects, such as the Mostar aircraft hangar or the power plant in Banja Luka. Some of these have since been sold into redevelopment, but most stand as cold reminders of war. Although some of these attract more adventurous tourists, they pose a health risk for the local population. Old buildings contain toxic chemicals such as lead-based paint and asbestos, which, when airborne, can cause respiratory issues. Beyond this, they remain at greater risk of collapse and fire damage, as well as ideal places for the accumulation of biohazards such as waste, rotting materials and garbage, which in turn provides a breeding ground for pests and rodents that can spread disease.

Consequences for the mining industry

The mining industry of Bosnia and Herzegovina was also largely affected during the war, and many mines pose a threat to the population and environment to this very day.

Such localities include the city of Vareš, where several different mining operations were closed down due to war¹⁵, surface mines Smreka and Brezik, underground mine Droškovac, Veovača - a zinc, lead and barite

¹⁵ Velić A., Karadžić Z. (2025), Proposal of measures to mitigate environmental impacts on the area of abandoned Vareš mine. *Journal of Faculty of Mining, Geology and Civil Engineering*. 13/2025: 101-112

mine, as well as the processing plant Tisovac. These localities were determined to pose a great to public health, property and living organisms in the region. There have been recorded instances of dangerous water accumulation, danger to water organisms, heavy metal pollution or loss of biodiversity due to erosion and water accumulation. These are only some of the potential dangers and risks these closed mines represent. This is not an unprecedented sight across the country.

Perhaps the most disturbing one is the Omarska mine complex, which is located some 20 kilometres from Prijedor. This complex was infamously used as a concentration camp during the war. The first detainees were taken to the Omarska concentration camp sometime in May 1992. and it quickly grew to become the largest of such camps. The captives were mostly Bosnian Muslims, but also Bosnian Croats. The camp itself was the site of many unspeakable horrors and war crimes, among which murder and rape were common. It was surrounded by antipersonnel landmines and snipers to deter escape attempts. It was the main site of the Prijedor ethnic cleansing, where 7,000 people went missing from a population of 25,000. It is believed by authorities such as the U.S. State Department that hundreds of detainees were executed in the camp itself and many more in the surrounding area during the evacuation process. The site itself is surrounded by 14 mass graves. The mine complex operated between 1986-1992 and was revitalised in 2004. The exploitation started under the auspices of a new company, ArcelorMittal D.O.O. Prijedor. Today, despite cleaning efforts, some areas remain dangerous in terms of landmine pollution, especially near old infrastructure sites.

Impact of migration

Forced migrations played a crucial role as well. About 1.2 million people were forced to leave the country, while 1 million citizens were displaced within the country, which, in total, is 2.2 million refugees and displaced people. Given that most of the population displaced came from rural areas, out of 1 million displaced in the country, most were moving towards larger cities for better protection and access to aid. This started a trend of rapid urbanisation within the country, which continues to this day. Rapid urbanisation impacts the environment negatively and in certain cases severely. It leads to a huge loss of habitat and biodiversity by fragmenting natural ecosystems. On top of this, it is clear that urbanisation at this scale requires infrastructure developments such as roads, construction of schools, hospitals and civilian infrastructure. Deforestation occurs to

make way for buildings. Urbanisation increases energy consumption, industry needs, and vehicle exhausts, all contributing to overall greenhouse gas emissions. The speed at which urbanisation happened left a lot to be desired in terms of planning and sustainability considerations. Until 1991, Bosnia and Herzegovina had 109 municipal centres. Now, after the war events and a new territorial arrangement, Bosnia and Herzegovina has 143 municipal centres, increase of over 30%. Environmental degradation will likely continue to feed the loop of migration patterns. Bosnia and Herzegovina is ranked highly among disaster-vulnerable countries in Europe from risks such as earthquakes, floods, wildfires and droughts. The less developed, semi-abandoned rural areas with poor infrastructure are at the highest risk. The migration process had negatively impacted agriculture: rural areas being largely abandoned, left susceptible to erosion, the spread of contaminants or propagation of invasive species. They have low infrastructural capabilities and, are thus more suspected to wildfires or floods. This has left both the dwindling, oftentimes elderly population, and the environment, exposed to greater risk.

The mining awareness and action

Many previously beautiful and flourishing mountain and forest ecosystems were left in ruin due to the use of antipersonnel landmines during the war. The contamination has restricted access to important infrastructure and recreational mountain trails. The landmines have made forest upkeep incredibly dangerous, whilst the dense forests and rocky environments have made the removal efforts difficult. The Bosnia and Herzegovina Mine Action Centre estimates that approximately 838km² of land is contaminated, impacting over 538,000 people in over 1,400 communities. In 1996-2023, there were 1,770 landmine/UXOs casualties in Bosnia and Herzegovina, 615 of them fatal. Often, the reason people end up entering such dangerous environments is due to economic necessity. Many of these environments are now at greater risk of forest fires due to a lack of upkeep. These areas are also more prone to landslides, erosion and even contamination because of heavy metals and toxic chemicals found in the landmines themselves. Mine and UXO often contain non-biodegradable chemical components such as mercury, lead and cadmium that can spread as far as about 6 kilometres from the site, contaminating groundwater and poisoning ecosystems. This has greatly impacted animal life as well, with many species dwindling in numbers due to multicausal habitat loss, leading to overall lower biodiversity. This is not even

accounting for wildlife directly killed by landmine explosions and more habitable areas already being overexploited by local communities. Beyond this, the terrifying truth is that even the necessary process of landmine removal requires some form of damage towards the environment through the use of heavy machinery, further erosion and vegetation loss. In case of controlled explosions, the area can be exposed to further contaminants and the use of certain machinery, such as mine flails, armoured vehicles equipped with a rapidly rotating horizontal rotor featuring heavy chains and hammers that explode, break, or dislodge buried landmines in their path, can destroy topsoil and cause erosion. Since August 2025, Bosnia and Herzegovina Mine Action Centre, from now on referred to as BHMAC, with "EU Support to Land Release on Targeted Mine Suspected Areas in Bosnia and Herzegovina", has begun demining operations in key areas such as Ilijaš, Ključ, Teslić, Hadžići, Pale and Drvar. Modern equipment such as advanced metal detectors, drones, GPS systems and 19 off-road vehicles were granted. The project remains ongoing.

Besides just regular explosive munitions, some sites are still polluted with nuclear waste materials, namely Depleted Uranium (DU), which was used by NATO forces in areas like Hadžići near Sarajevo. The estimated amount of this material used is around three tonnes. Certain isotopes of DU have been found present in local vegetation as well as on the ground level. Although not severely radioactive, they pose a danger and require complicated removal processes. In some sites, these materials were buried under only about a meter of dirt in relative proximity to populated areas. Further problems result from the unexploded and discarded munitions. Through corrosion, they begin to release heavy metals like barium, mercury and lead, and toxic chemicals, such as TNT and DNT. DNT may likely be a human carcinogen, and it is frequently identified in the soil near military activity. These chemicals then go through the process of bioaccumulation and make their way through the food chain.

There have been few studies done documenting the effects that war has on biodiversity loss. Biodiversity loss as a consequence of war and the further impacts it has on the environment remain shockingly overlooked. It is known that it has direct relations, but the exact scope and longevity of its effects are not very well documented. It can, however, be said concretely that habitat loss due to military action and chemical pollutants is significant. During wartime, many resources that could be allocated to environmental protection tend to be relocated, understandably, towards national security and defence. This creates more frugal financial

environment in the areas of conservation, forestry and ecological undertakings. Many species are under threat in Bosnia and Herzegovina, namely 17% of fish species, 0.3% of which are endemic, 33% of reptile species, 5,9% amphibian species and 4,2% of mammal species. As it was previously stated, it is impossible to pin the endangerment of these species solely on the war, but the drivers behind the endangered status are anthropological factors - those we can more easily relate to war.

Sustainability in the recovery process

On top of this, we must also consider that the efforts to rebuild infrastructure losses, such as roads, hospitals, and schools, release additional emissions. Social and environmental issues are critically interconnected. Governments tend to privatise both land and national resources to foreign companies for profit and short-term gains. Such is an issue in Majevica near the city of Tuzla. The area was heavily covered with landmines and depopulated during the war. The community still there finds itself again at the precipice of danger. Arcore, the Swiss prospecting company, began exploratory drilling in the area for lithium. The recent developments in Serbia regarding lithium mining have made the local population aware of the implications of such actions. The company has given vague assurances that they will be utilising only the "most modern", the "greenest" and the "safest" mining techniques. This material, lithium, is crucial for the "green transition" and great deposits of it have been uncovered across Europe, but in the EU, the environmental protections are stricter, making it so that international mining companies such as Arcore seek out countries with weaker rule of law and in need of foreign investment. Bosnia and Herzegovina, still impoverished and ravaged by the recent war, is being "attacked" by such companies on all sides.

Some see this as an adequate solution for land that is contaminated and polluted by remnants of war, such as mines and explosives, but the question arises: if we continue polluting already "unusable" land, what sort of effects will this have in the future and on nearby populations?

"Multinational corporations now have the ability to scour the planet in search of the cheapest labour and goods, poor countries are forced to compete to drive costs down." -

Jason Hickel, The Divide

The loss of arable land is heavily related to the war. The agricultural sector has suffered incredible financial damage during the war, with an estimated €7.3 billion euros being lost (adjusted for inflation). During the

war and shortly after, many land records and registries were destroyed or purposely destroyed to obscure ownership. This is another example of privatisation post-war, which has been notably corrupt in Bosnia and Herzegovina. Some positive linkages have been made between privatisation and the environment; however, we can conclude that these do not refer to the rampant and vast privatisation occurring in countries with poor economic conditions and lack environmental protections, as in case with Bosnia and Herzegovina shortly after the war. The first post-war wave of privatisation was non-transparent and corrupt. The sales of previously state-owned enterprises resulted in power consolidation among political and economic elites. Alongside this, the post-war economy was rather small and left many firms barely functioning and not returning a profit, turning them insolvent and subject to asset stripping.

Leaving impoverished populations in devastated areas, without the land they have used for generations, leads to desperate behaviours, pushing a significant amount of the population into either criminal activity or resorting to participating in the shadow economy. The shadow economy, representing roughly 23% of global output, harms the environment by operating outside regulatory oversight, causing increased pollution, uncontrolled waste disposal, and higher greenhouse gas emissions. These unregulated, often low-tech activities drive deforestation, resource extraction, and poor air and water quality, particularly in developing nations. Improper waste disposal can contaminate the waterways, get into the groundwater and decrease soil fertility. The avoidance of proper taxation can inhibit budgets that could be allocated towards environmental protection, and operating illegally means there is no oversight or compliance with laws regarding the environment. The size of shadow economy in Bosnia and Herzegovina accounts for around 30% of the GDP, and anywhere between 120,000 and 300,000 people partially or entirely participate in this sector and can largely be seen as an aftermath of wartime and post-war smuggling economy. The reason for this not being addressed quickly is the complexity of the legal system, where businesses turn to illegal conduct due to the fragmentary nature of the political structures, complicated and high tax systems. Slow conflict recovery in Bosnia and Herzegovina has contributed towards the normalisation of such practices. The shadow economy operations in Bosnia and Herzegovina consist mostly of construction, illegal logging, retail and transportation. Many instances of deforestation involve illegal logging, with public and private companies sometimes linked to political

elites, weakening enforcement efforts. Deforestation causes soil erosion, loss of biodiversity, and increased severe flooding risks. In 2024, the country lost 1.6 kha of natural forest, contributing to 900 kt of CO² being released from 2001 to 2024. This crime against the environment enriches a few and removes a crucial resource at the same time. Near Zavidovići, the company Bučje d.o.o. has removed almost 10.000 m³ of wood cover worth around €409.000. Incidentally, the company paid around €35.000 to have the area properly demined, which, as it turns out, has never been done. Another notable illegal practice is illegal landfills in Bosnia and Herzegovina (between 1200 and 1400). These are present all throughout the country, and with no laws followed regarding waste disposal, it is impossible to understand the scope of pollution they represent. Many types of harmful waste can be found in landfills, and they pose a public health risk and represent another environmental killer. The Uborak landfill near Mostar is a known pollutant contaminating the area's groundwater with arsenic and lead due to toxic runoff. More than a hundred landfills exist near the city of Zenica, several exist around Tuzla as well, and they are present in many other smaller population centres, as well as in forests.

The cause for the widespread existence of illegal landfills in the country is multiple. Firstly, infrastructure: certain areas, especially those more rural or inaccessible, don't have enough capabilities to handle waste. It leads residents to turn to illegal waste accumulation. Besides, only six landfills in Bosnia and Herzegovina are compliant with EU standards. Moreover, many authorities ignore the well-known existence of illegal landfills due to limited resources or the lack of legal disposal alternatives.

Slow path to recovery

Despite all of this, Bosnia and Herzegovina has made significant progress towards a greener future. The country has made the National Adaptation Plan as well as Climate Change Adaptation and Low-Emission Development Strategy for 2020–2030, both of which are supported by organisations such as the UNDP in BiH. The country has also committed to lowering overall greenhouse gas emissions by 33,2% by 2030.

"Countries with smaller, poorer economies, including Bosnia and Herzegovina, face significant challenges in financing the energy transition and the shift to clean energy sources from their own resources. Bosnia and Herzegovina, like many others, will require substantial international financial assistance and support to achieve the decarbonization of its energy sector by 2050."

This is all to say that the ultimate problem ends in the lack of ability to tackle these issues head-on, as the Bosnia and Herzegovina political system is heavily fragmented, between two entities, the Federation of Bosnia and Herzegovina and Republika Srpska, with an additional Brčko District. These entities are divided into further smaller governmental units known as cantons (Federation of BiH) and municipalities (Republika Srpska). This further overcomplicates the effectiveness of the handling the remnants of war. The slow and tedious coordination between the entities hampers the implementation of any reforms and makes coherent policymaking difficult. With all of the policies moving in the right direction, albeit very slowly, where Bosnia and Herzegovina truly lacks is proper enforcement. Rampant corruption in the country makes this all the more possible. The war created a flourishing environment for the establishment of criminal network ties to politics, elite ties to institutions, leading to them acting in political instead of public interest. Many of the funds allocated towards rebuilding have been embezzled into private accounts, and the same people who profited most from the war formed the political elite of today. This overly complicates the efforts to reverse the damage and creates a feedback loop in which further decay of infrastructure and industry leads to further decay of the environment and so forth.

Due to this, this sector has been relegated mostly to the third sector, that is lively in Bosnia and Herzegovina, as the citizens care deeply about their environment. Many NGOs were formed as a consequence of improper government enforcement to fight overexploitation of resources. Some significant actors include the Coalition for the Rivers, fighting the construction of destructive and oftentimes illegal small hydropower plants that would restrict waterways and harm ecosystems. It was formed in 2016, and today it counts some 20 organisations in its network, working together to stop further damaging projects from taking place.

“In the two entities of Bosnia, there are a total of eight municipalities and cities (...) that are on or near Majevisa (...) We started to create a network and to raise the whole of Majevisa to an open struggle. We also connected with people from Ozren, who were fighting another mining project. We have shown that, regardless of whether you are a Serb, Croat, or Muslim, it does not matter. We have created a network against hate. (...) We all share the same air, we share the same water, and we live on the same land”.

- *Leader of Eko Put Bijeljina Snežana Jagodić-Vujić,
for Osservatorio Balcani Caucaso Transeuropa*

The Bijeljina-based environmentalist organisation Eko Put has been following the protests in Serbia regarding the Rio Tinto lithium mining project. The organisation was among the first to find out about the lithium exploration mines happening in Majevisa and established a larger movement. This reached residents of the village of Boljanić in Ozren, who were fighting their own battle against the company Lykos Balkan Metals d.o.o. Bijeljina (owned by the Australian Lykos Metals Ltd), was granted permits to mine nickel, copper and zinc in 2021. This grassroots resistance concerns itself with biodiversity, public health and preventing pollution.

With all of this in mind, we can see just how devastating the 1992-1995 period was. The war was for Bosnia and Herzegovina's environment. Beyond missing and incomplete statistical data, we could use to measure the direct effects that the war had on the environment, what we can name and measure is already a sign of alarm by itself. From direct pollution caused by wartime, industry failures and further pollution caused by poor economic conditions, all the way to informing the current shadow economy whose carbon footprint is hard to track and even the creation of the fragmentary political system that makes all progress slow, it cannot be overstated how much it has impacted the region. Despite this, we can clearly determine that the right steps are being taken and that there exists the will to fight for conservation and against pollution in Bosnia and Herzegovina. The question that arises is, will this be enough to reverse the damages of war and create a prosperous future where clean air and water can be enjoyed by all? This will require the two entities to have better collaboration on policy proposals and adoption, as well as making sure to actually enforce existing laws. Although it will be a challenging, the public is demanding change. Some framework for a green strategy already exists in the country. Now is the time to properly enforce both it and the already existing laws. Given the 2026 general elections on the horizon, environmental issues should be kept in mind by voters when selecting candidates for the presidency, national, entity and cantonal governments. It's been over thirty years since the signing of the Dayton Accords, and although rebuilding was difficult, a brighter and greener future is on the cards for Bosnia and Herzegovina.

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She is a bachelor of philosophy and sociology.*

Decolonial Ecologies: Ukraine's Case

by Sintija Kriviņa



What is decolonisation?

Decolonisation is not just a metaphor or an abstract concept – it is a material and political process grounded in land, power, and sovereignty¹⁶. When we apply this idea to environmental security in Ukraine, it becomes clear that environmental destruction cannot be understood separately from histories of imperialism and colonial control. The ongoing war has made this connection visible in a way that is both urgent and difficult to ignore. A decolonial perspective pushes us to ask for some uncomfortable but necessary questions: whose land is being exploited, whose environments are being destroyed, and who is allowed to decide what recovery looks like? In the case of Ukraine, these questions are tied to both the Soviet past and the present aggression of Russia. As highlighted by Astahovska¹⁷, decolonial thinking in the post-socialist region challenges the idea that colonialism is only a feature of Western history (or the distinction between the South and the North). Instead, it reveals how imperial practices have also shaped Eastern Europe, particularly through extractivism, resource control, and environmental degradation.

This becomes clear when we look at regions like Donbas. Even its name, Donetsk Coal Basin, reflects a colonial logic that reduces land to its economic function¹⁸. During the Soviet period, the region was heavily industrialised and integrated into a military-industrial system, where both human and non-human life were treated as resources. This process, sometimes described as “resourcification,” continues to shape how the region is understood and exploited today. The current war intensifies

¹⁶ Tuck, E., & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, Education & Society*, 1(1), 1–40.

¹⁷ Astahovska, I. (Ed.). (2024). *Decolonial ecologies: Understanding the postcolonial after socialism*. Latvian Centre for Contemporary Art.

¹⁸ Tsymbalyuk, D. (2022). What does it mean to study environments in Ukraine now? *Environment & Society Portal, Arcadia*, (12). <https://doi.org/10.5282/rcc/9494>

these patterns, turning landscapes into battlegrounds and further degrading already fragile ecosystems. Decolonial ecologies help us move beyond seeing environmental damage as a side effect of conflict. Instead, frame it as part of a broader system of domination. Imperial and colonial powers have historically prioritised extraction and control over ecological balance, often disregarding the well-being of local communities and ecosystems¹⁹. In Ukraine, this is visible not only in the destruction of infrastructure and pollution of land and water, but also in the long-term disruption of ecological systems that may take decades to recover if they recover at all.

Additionally, the example of the Kreidova Flora reserve in Donetsk Oblast illustrates this clearly. This unique ecosystem, home to relic pine species dating back to the Cretaceous period (which is about 143.1 to 66 million years ago), is now once again located in an active conflict zone. The threat is not only immediate destruction, but also the loss of a rare ecological heritage that cannot be easily restored. Such cases show that environmental harm in war is not temporary – it can reshape entire ecosystems and erase forms of life that have existed for millions of years (Tsymbalyuk 2022). Nevertheless, decolonial ecologies are not only about identifying harm, but also offer a way to rethink what environmental security means. Rather than focusing only on protection and prevention, emphasise justice, restoration, and relationships with the land. Getachew's concept of "anticolonial worldmaking" is useful here, as it suggests that decolonisation involves creating new systems that go beyond existing structures of domination²⁰. Similarly, Coulthard highlights the importance of rebuilding relationships with land based on respect and reciprocity, rather than extraction²¹.

Applying these ideas to Ukraine means recognising that recovery is not just about rebuilding infrastructure or cleaning polluted areas. It is also about restoring sovereignty over land and resources, supporting affected communities, and creating more sustainable and just environmental practices. This includes questioning global systems, such as fossil fuel

¹⁹ Arneil, B. (2024). Colonialism versus Imperialism. *Political Theory*, 52(1), 146-176; Demos, T. J. (2016). *Decolonizing nature: Contemporary art and the politics of ecology*. Sternberg Press.

²⁰ Getachew, A. (2019). *Worldmaking after empire: The rise and fall of self-determination*. Princeton University Press.

²¹ Coulthard, G. S. (2014). *Red skin, white masks: Rejecting the colonial politics of recognition*. University of Minnesota Press.

dependence, which continue to finance and enable conflict. As Garland argues, the ecological crisis itself is deeply connected to colonial histories that have treated the non-human world as something to be controlled and exploited²². However, this raises a tricky question: how can we talk about decolonisation when environmental destruction is still ongoing? In Ukraine, ecosystems are being damaged faster than they can recover, and the timeline for restoration is measured in at least 20 years. This puts decolonial ecology in a difficult position, because it has to respond to immediate damage, while also thinking about long-term recovery.

In practice, this points to a different way of rebuilding. Instead of returning to extractive, centralised systems, there is space to prioritise local knowledge and smaller-scale solutions, especially in frontline and recently de-occupied areas. This could mean involving communities directly in land-use decisions, supporting local monitoring of environmental damage, or restoring soils and ecosystems in ways that reflect specific regional conditions. It also connects to energy choices: reducing dependence on fossil fuels is not only about climate, but about weakening the systems that finance and sustain the war. At the same time, documenting ecocide and pushing for accountability through platforms (like previously mentioned “EcoZagroza”) or initiatives by Ukrainian organisations (like Ecoaction) remains essential, not just as evidence, but as part of environmental justice.

Finally, the question is not only how to repair damage, but how to avoid repeating the same patterns that made environments vulnerable in the first place. Ukraine will face large-scale reconstruction, and with it the risk of falling back into extractive models. A decolonial approach does not reject rebuilding, but pushes for it to be done differently – more carefully, more locally grounded, and with long-term resilience in mind. In this sense, environmental security is not only about protection, but about shaping a future where caring for the land is part of what sovereignty actually means.

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²² Garland, G. (2023). *Decolonial ecology: Thinking from the Caribbean world*. *Environmental Politics*, 32(2), 373–375. <https://doi.org/10.1080/09644016.2022.2160115>

What need to be changed: law, policies, attitudes



By the Project Team

We discussed that the environmental security needs to be implemented in the national legislations, and that the liability of polluters and those who destroy the environment needs to be strengthened. But what does it mean in practice? We want to present some changes in the law, policies and attitudes of politicians and international community are needed and worth advocating for to protect our environment while building European deterrence and resilience.

Ecocide as an international crime

Ecocide should be introduced as an international crime under the Rome Statute – a grave violation of international law that affects the global community, as genocide, war crimes, crimes against humanity, and the crime of aggression. Only by that can we assume that the perpetrators of the ecocide cannot be held accountable before the International Criminal Court.

There are several attempts by bodies such as the Council of Europe or the European Parliament to introduce the concept of ecocide into international law. We need to keep campaigning.

But it is not only about new laws – they need to be respected by the international community. The International Criminal Court should be strengthened: the jurisdiction needs to be expanded, the arrest warrants need to be enforced and linked to the trade agreements or other cooperation, and diplomatic protection for ICC officials should be provided. The actions against ICC, as the 2025 US sanctions against judges are scandalous and should be met with a more decisive reaction from the international community.

ECOCIDE. STOP IT.



CDN conducted the awareness raising campaign on Ecocide. You can check it on our website.

Non-military aspects of security

The crucial points when discussing the security policy in Europe now are both the strictly military aspects, such as strategic autonomy, strategic instruments such as the SAFE programme, and the needed surge in ammunition production. But environmental and energy security are equally crucial, as are civic preparedness and resilience of critical infrastructure. The focus on all aspects is visible in recent changes in national and EU security policies in recent years, and should be reflected in all countries' policies and public discourses.

At the same time, "the equally equal aspects" means that the programme work on security should contain all of them – manifestos that only deal with non-military aspects of security, while ignoring the *hard security* are useless. Progressives being against "excessive militarisation" should mean precisely that we strive to take into account all aspects in order to best increase European deterrence and resilience.

Resilient infrastructure

What does it mean that the infrastructure is resilient? It can withstand, absorb and recover from threats and stresses, either caused by deliberate attacks (whether as a part of hybrid or conventional warfare, or the acts of terrorism) and natural disasters or climate change. It can continue to deliver the essential service to the citizens. It's not about systems that will never fail, but whose failure is survivable, temporary and easy to recover.

We need to integrate risk assessment into the major investments and adopt the sustainability and "build back better" principles in post-disaster and post-conflict settings. The infrastructure also needs to be more decentralised, to avoid the risk of single points of failure and prioritise nature-based solutions (eg, natural floodplains for flood protection).

Energy transition

Fast energy transition is not only needed to combat climate change, and to stop paying money to Russia, fuelling its war machine, and to the other authoritarian states. Energy infrastructure underpins the functioning of every other critical system. The failure in the grid affects all systems:

water supply, transport, emergency services. Transition to renewables means that the energy is more decentralised, and no longer depends on large power plants connected by the transmission lines, all being vulnerable to attacks or acts of terrorism. Energy transition means also the modernisation of energy grid to make it integrate renewables, manage new demand patterns and defend itself against cyberattacks.

Cross-border solidarity

Ecosystems do not respect the national borders: rivers go through several countries, animals migrate, etc. Joint monitoring systems, shared data and coordinated response mechanisms are needed for the protection of the environment and for the early warning in case of disasters such as floods, pollution incidents or infrastructure disorders. Resilience of one country supports the resilience and well-being of its neighbours.

Cross-border solidarity is not only the question of environmental security, but goes wider. A sabotage of Polish railway infrastructure or cyberattack on Estonian power distributor cannot be treated as a local incident – it is the matter of European security and it needs to be treated as one.

Accountability culture

We discussed the ICC strengthening, but the accountability culture should start at the lower level. Politicians need to be held accountable; failures investigated and the lessons learned. The impact assessments cannot be treated as just a bureaucratic formality. The policy and procurement decisions should prioritise long-term resilience, not short-term savings.

Finally, we need to hold our political parties and their representatives accountable for their words and actions. Failure to update their manifestos and views in the face of new global challenges is a failure of the organisation, and should be treated like that. If a party or organisation still has insufficient commitment to supporting Ukraine or downplaying the existing threats to European security, it must face political consequences. Resilience is the end product of governance quality, and the governance quality starts from the organisational level.

Cross-border environmental threats: how to tackle?



Session Outline

Every country have their own specific environmental threats that can be tackled only with detailed knowledge of the local conditions and laws. But some of the threats transcend national borders and require solutions at the international, European, or global level. We now present an approach to this problem using the workshop template. It includes the session outline template, as well as three cases of environmental threats that require cross-border cooperation.

The session was conducted during the "Environmental Consequences of War " seminar and was one of the highest-rated workshops. It was also used in university teaching by one of the PT members.

1. Name of the session:

Cross-border impact: soils and food security, water and sea pollution.

2. Description

Participants will be divided into three groups. Each group will be assigned a task related to land pollution, food safety, water pollution, and sea pollution. Their task will be to assume the role of one of the selected countries, analyse the selected case, and prepare an information campaign for the public about the problem. They will also develop arguments that will convince other countries to support measures to prevent the given problem. Finally, participants will be asked to indicate which group developed the best information campaign and convinced them to support preventive measures.

3. Learning Outcomes

Participants will learn about the cross-border impact of pollution. They will learn about soil, food, river, and sea pollution. They will also learn about collaboration by developing an information campaign for their own community and advocacy in preparation for an international campaign.

4. Timeline and methodology (90 minutes in total)

10 min – division into groups and distribution of tasks.

50 min – group work – participants are analysing the cases (attached), and working on their presentation

30 min – presentation (max 8 min per group) + voting by the all participants on which presentation is the best

5. **Materials:** Printed cases, assignment envelopes, markers and flipchart paper, tape/glue.

Case 1. Soil pollution

You represent the government of Ukraine 

As a result of Russia's full-scale invasion of Ukraine, environmental degradation is occurring and ecological threats are increasing. This will significantly impact the pace of the country's reconstruction process. Revitalization and repair of the environmental damage will be a process that will take decades.

Military operations on Ukrainian territory are leading to environmental degradation, which includes the devastation of ecosystems and natural resources and direct threats to humans and animals. Soil contamination with heavy metals and toxic substances is occurring. Threats are posed by landmining, the use of military equipment, and infrastructure damage. Fertile soils in the east of the country are being seriously damaged by the Russian invasion. The damage is both mechanical, such as compaction by heavy military equipment or the creation of trenches and craters, and chemical, such as soil contamination with heavy metals and rocket fuel. Danger also stems from the destruction of industrial facilities, including power plants, oil storage facilities, refineries, and large-scale plants (Azot in Severodonetsk, Azovstal in Mariupol) that have been shelled by Russia.

Ukraine has become the most heavily mined country in the world. Currently, it is estimated that up to 28% of its territory, approximately 174,000–250,000 km², requires demining (244,000 km², including almost 2,000 km² of nature reserves). The total cost of demining Ukraine could reach up to \$50 billion. The main challenge is the lack of adequate trained personnel and equipment. International partners have pledged approximately \$500 million for this purpose.

1. Prepare a plan for an information campaign raising awareness of the problem of soil contamination. Remember that soil contamination also affects agricultural products, groundwater, and surface water.
2. Prepare an argument for European countries, convincing them that your problem is the biggest and that counteracting it should be a priority.

Additional information: Ukraine is famous for its black earth/chernozem (mainly in the east), some of the most fertile soils in the world, accounting for approximately 25% of the global reserves of this type of soil. Ukraine is a significant exporter of grains such as wheat, corn, and barley, and its agriculture plays a key role in the global food supply chain, which is why, alongside Argentina, it is called the "granary of the world."

Case 2. Water pollution

You represent the government of Serbia 🇷🇸

The Danube is the second longest river in Europe. It flows through 10 European countries: Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Bulgaria, Romania, Moldova, and Ukraine.

Nearly 450 km of the Danube lies in Serbia, where it flows, among other places, through the country's capital. Belgrade is one of the oldest cities in Europe, currently home to approximately 1.2 million people. In many districts of the city, even those considered upscale, sewage flows directly into the Sava River. The Sava is a tributary of the Danube, which is struggling with pollution.

Due to the massive pollution of the river, Belgrade residents are giving up swimming. They also claim that in some places there are almost no fish left in the river, and that animals caught from the Danube are not readily eaten due to the stench from the river. Every year, a huge amount of sewage is discharged into the river. The entire environment, including plants and animals, is at risk.

Serbia is not a member of the European Union, and the lack of adequate sewage treatment plants and environmental protection, among other factors, disqualifies it from applying for membership. If Serbia were to join the EU, it would have to process at least 90% of its municipal wastewater. Currently it processes only about 15%. 70% of settlements lack access to sewage treatment plants.

The Serbian Ministry of Environment announced that the government is "intensively working" on measures to protect water from pollution. However, according to government information, many projects are delayed. The lack of adequate infrastructure negatively impacts pollution on the Danube, affecting further sections of the river in Romania, Bulgaria, Moldova, and Ukraine.

1. Prepare a plan for an information campaign for the public, raising awareness of Danube pollution and what they can do to better protect the river.
2. Prepare arguments for European countries that Danube pollution is priority and that they should support your government in investing in new technical solutions.

"[Belgrade] dumps enough untreated sewage each year to fill 60,000 Olympic swimming pools, government data show, threatening wildlife downstream and contributing to the city's reputation as one of the worst polluters in Europe" (Reuters)

Photo: Sava at its confluence with the Danube, Belgrade, 2024



Case 3. Sea pollution

You represent the government of Poland 

The Baltic Sea is one of the most polluted seas in the world. Factors contributing to the pollution of Baltic waters include the construction of drainage ditches, intensive industrialisation, the development and construction of new cities, and nearby sewage and waste.

Eutrophication is estimated to be the greatest conservation problem in the Baltic Sea. Its main causes are excessive nitrogen and phosphorus loads, which originate from land areas within the Baltic Sea basin and from areas beyond. Since water exchange with the saltier and more oxygenated North Sea is limited, organic matter decomposing on the Baltic Sea floor consumes available oxygen and produces hydrogen sulfide, creating dead zones at the bottom.

After World War II and the invasion of Allied and Soviet forces into Germany, large quantities of chemical munitions and stockpiles of toxic warfare agents were discovered. Following the Potsdam Conference, it was decided to dump the chemical weapons in the Baltic Sea. Among the greatest threats are fuel oil leaks from the Stuttgart and Franken shipwrecks. The sea is one of the most polluted seas in the world. Factors contributing to the pollution of Baltic waters include the construction of drainage ditches, intensive industrialisation, the development and construction of new cities, and nearby sewage and waste.

Eutrophication is estimated to be the greatest conservation problem in the Baltic Sea. Its main causes are excessive nitrogen and phosphorus loads, which originate from land areas within the Baltic Sea basin and from areas beyond.

Since water exchange with the saltier and more oxygenated North Sea is limited, organic matter decomposing on the Baltic Sea floor consumes available oxygen and produces hydrogen sulfide, creating dead zones at the bottom.

Due to the high level of pollution in the Baltic Sea, cyanobacterial blooms, which are toxic to humans, are very common. Furthermore, many fish species (e.g., Baltic cod) are suffering from overfishing and climate change.

1. Prepare a plan for an information campaign for the public, raising awareness about Baltic Sea pollution and ways to better protect it.
2. Prepare arguments for European countries that the problem of Baltic Sea pollution is a priority and that they should support investments in new solutions to save the Baltic Sea.

Just Transition in Sheptytskyi

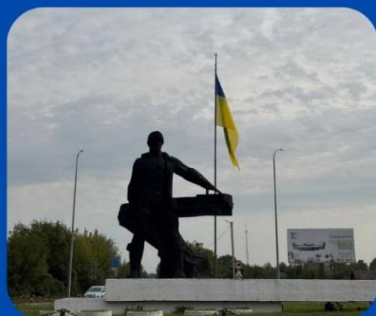


Sheptytskyi is a city that can be an example for well-led processes of the just transition, despite the war-related issues (e.g., the city offered huge help to the internally displaced people). This historical mining town of around 80000 inhabitants has 5 operating mines, one in the process of liquidation, and one already liquidated. In 2023, 40% of revenues of the municipality came from the extractive industry.

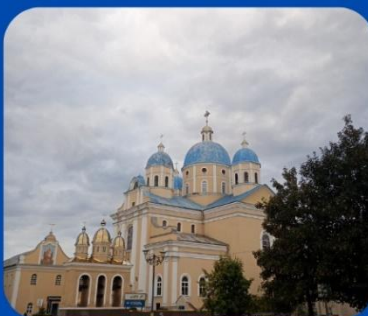
The Just Transition Action Plan was developed in 2023, meaningfully engaging the citizens. Three focus groups (economic development, ecology and environment and human capital) consisting of 420 participants were created. Residents submitted 130 project ideas.

As a result of the plan, 38 projects will be realised, resulting in, among others, 1348 new jobs, over 40.000 MW of newly installed renewable energy facilities, 5 hectares of revitalised and reclaimed areas, all benefitting 220.000 residents in the municipality and the region. One of the projects focused on the solar power plants for the three water intakes in the municipality, so they are provided with uninterrupted power supply. Other examples include the successful transition of former miners who, with the support of the program, opened sustainable local businesses.

From the notes of one of the participants on the session “Just Transition in Sheptytskyi” during the activity. Big thanks for the Just Transition Agency in Sheptytskyi for conducting of workshop and informative presentation.



The miner monument
“Hymn to Labor” at the
entrance to the city



The Church of St. Vladimir
in Sheptytskyi (1703) one
of the symbols of the city



The monument to the
victims of the war

